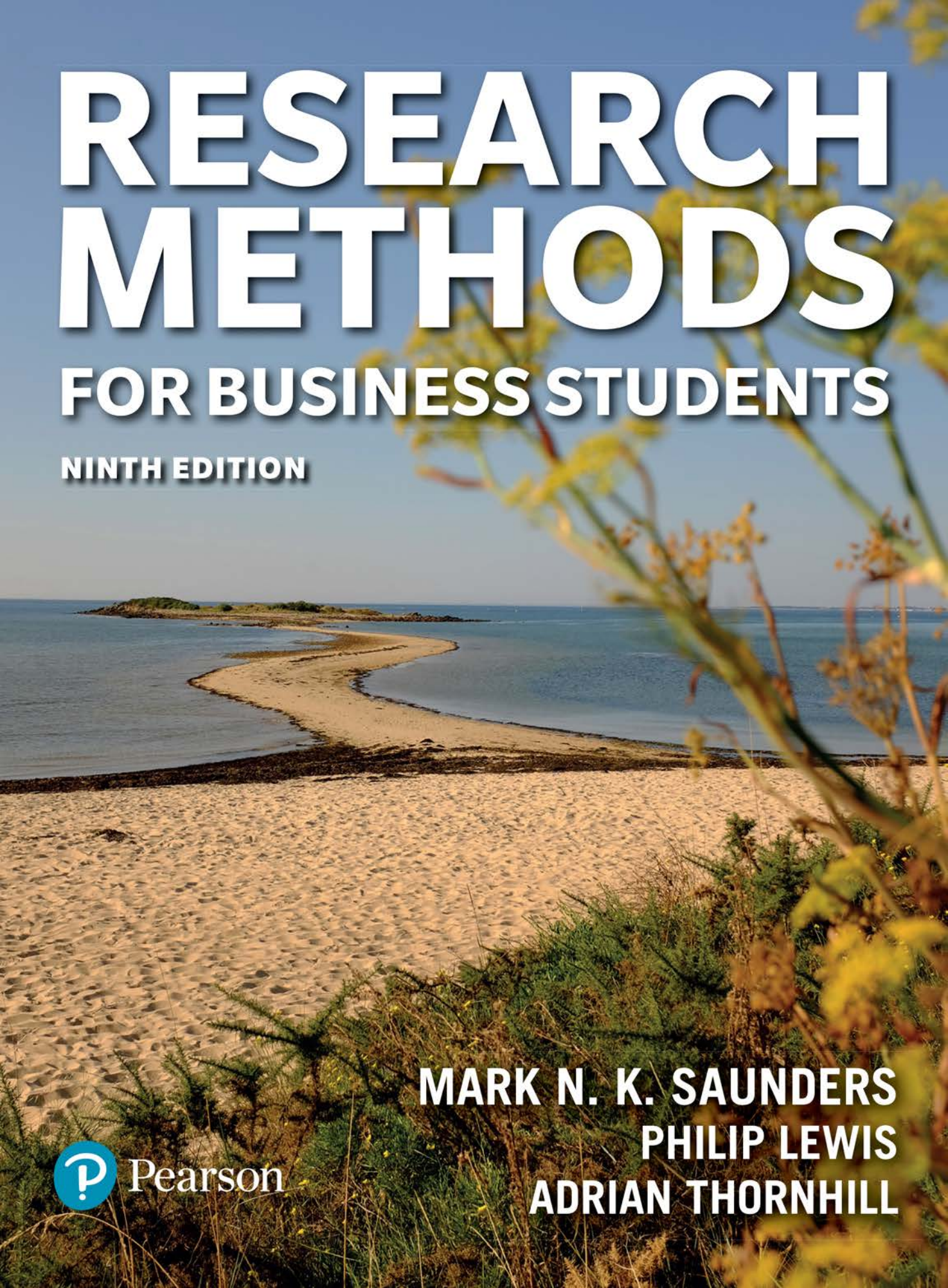

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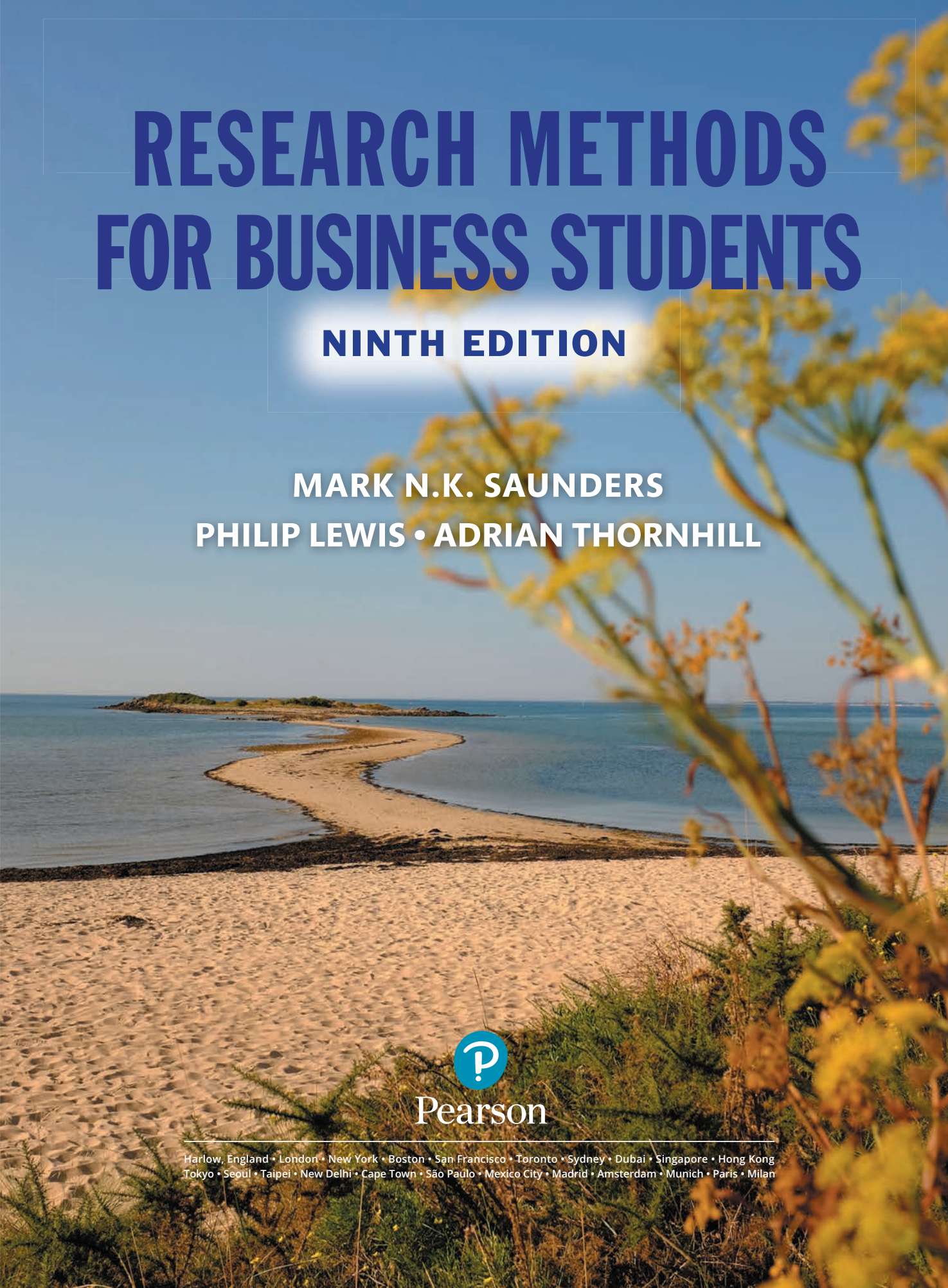
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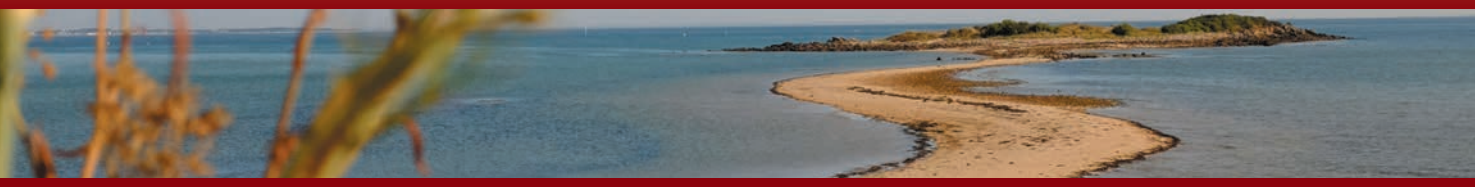
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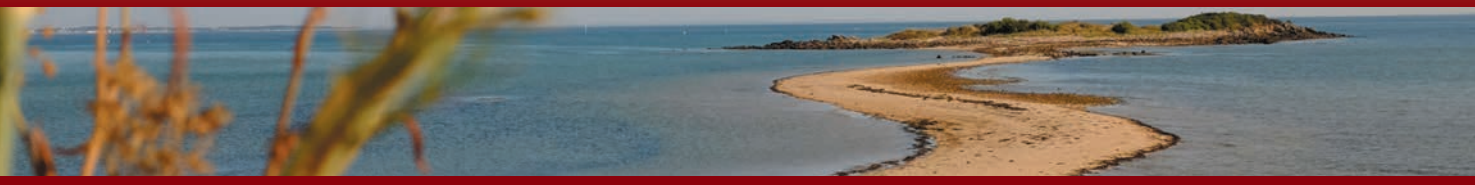
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How to use this book

This book is written with a progressive logic, which means that terms and concepts are defined when they are first introduced. One implication of this is that it is sensible for you to start at the beginning and to work your way through the text, various boxes, self-check questions, review and discussion questions, case studies and case study questions. You can do this in a variety of ways depending on your reasons for using this book. However, this approach may not be suitable for your purposes, and you may wish to read the chapters in a different order or just dip into particular sections of the book. If this is true for you then you will probably need to use the glossary to check that you understand some of the terms and concepts used in the chapters you read. Suggestions for three of the more common ways in which you might wish to use this book follow.

As part of a research methods course or for self-study for your research project

If you are using this book as part of a research methods course the order in which you read the chapters is likely to be prescribed by your tutors and dependent upon their perceptions of your needs. Conversely, if you are pursuing a course of self-study for your research project, dissertation or consultancy report, the order in which you read the chapters is your own choice. However, whichever of these you are, we would argue that the order in which you read the chapters is dependent upon your recent academic experience.

For many students, such as those taking an undergraduate degree in business or management, the research methods course and associated project, dissertation or consultancy report comes in either the second or the final year of study. In such situations it is probable that you will follow the chapter order quite closely (see Figure P.1). Groups of chapters within which we believe you can switch the order without affecting the logic of the flow too much are shown on the same level in this diagram and are:

- those associated with obtaining or collecting data (Chapters 8, 9, 10 and 11);
- those associated with data analysis (Chapters 12 and 13).

Within the book we emphasise the importance of beginning to write early on in the research process as a way of clarifying your thoughts. In Chapter 1 we encourage you to keep a reflective diary, notebook or journal throughout the research process so it is helpful to read this chapter early on. We recommend you also read the sections in Chapter 14 on writing prior to starting to draft your critical review of the literature (Chapter 3).

Alternatively, you may be returning to academic study after a gap of some years, to take a full-time or part-time course such as a Master of Business Administration, a Master of Arts or a Master of Science with a Business and Management focus. Many students in such situations need to refresh their study skills early in their programme, particularly

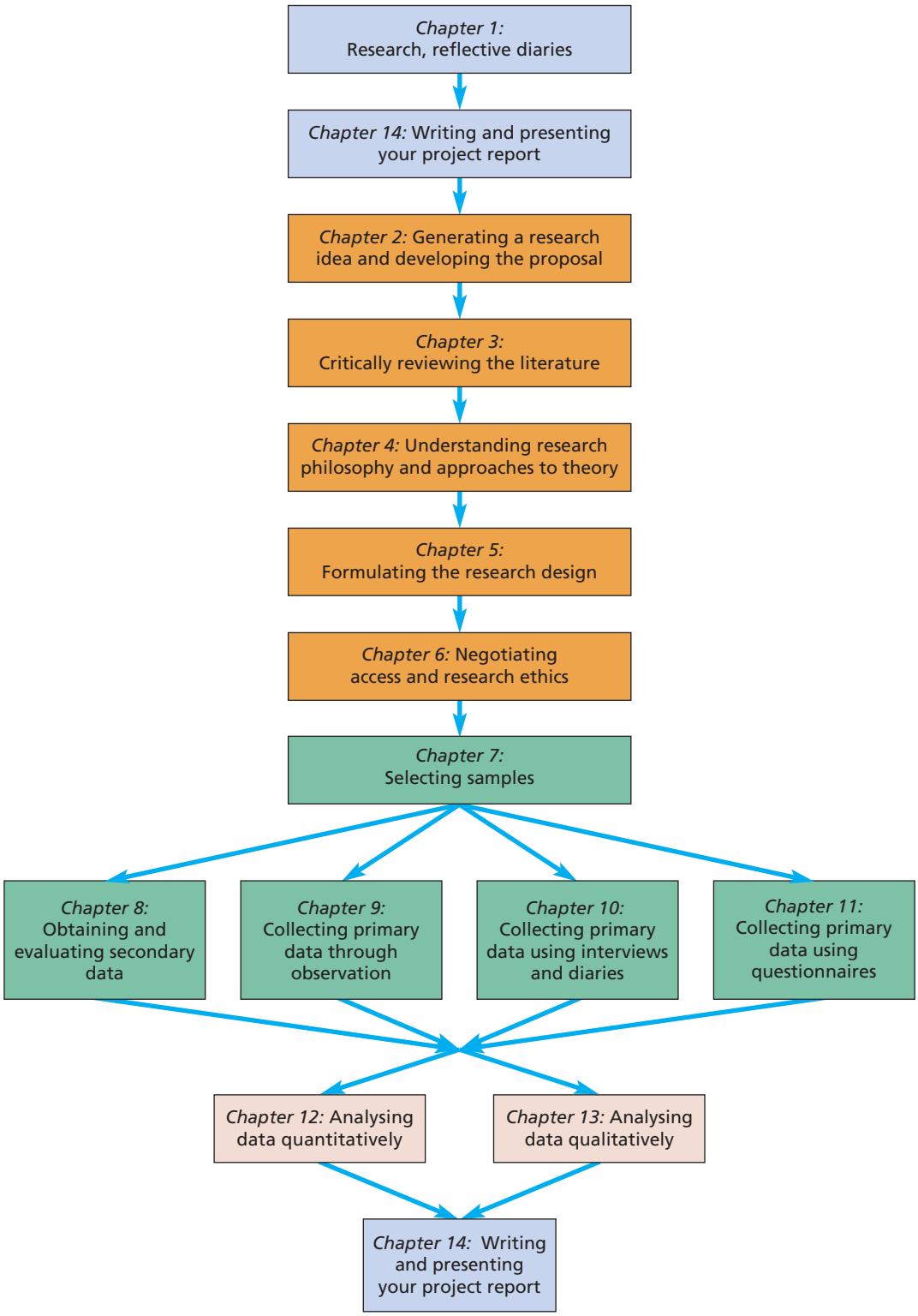


Figure P.1 Using this book for your research methods course and associated project

those associated with critical reading of academic literature and academic writing. If you feel the need to do this, you may wish to start with those chapters that support you in developing and refining these skills (Chapters 3 and 14), followed by Chapter 8, which introduces you to the range of secondary data sources available that might be of use for other assignments (Figure P.2). Once again, groups of chapters within which we believe

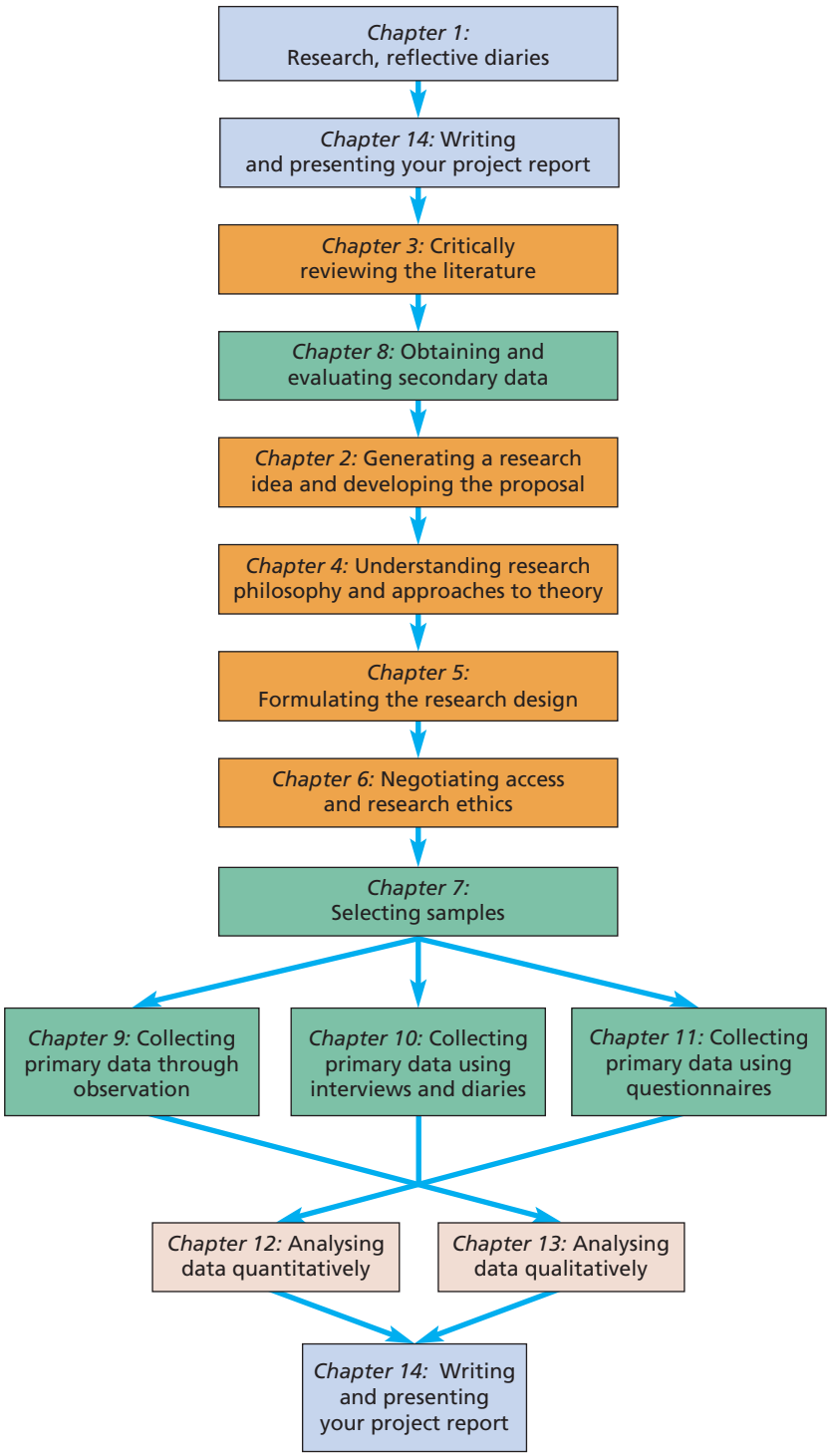


Figure P.2 Using this book as a returner to academic study

you can switch the order without affecting the logic of the flow too much are shown on the same level in the diagram and are:

- those chapters associated with primary data collection (Chapters 9, 10 and 11);
- those associated with data analysis (Chapters 12 and 13).

In addition, we would recommend that you re-read Chapter 14 prior to starting to write your project report, dissertation or consultancy report, or if you need to undertake a presentation.

In whichever order you choose to read the chapters, we would recommend that you attempt all the self-check questions, review and discussion questions and those questions associated with the case studies. Your answers to the self-check questions can be self-assessed using the answers at the end of each chapter. However, we hope that you will actually attempt each question prior to reading the answer! If you need further information on an idea or a technique, then first look at the references in the further reading section.

At the end of each chapter, the section headed 'Progressing your research project' lists a number of tasks. Such tasks might involve you in just planning a research project or, alternatively, designing and distributing a questionnaire of your own. They all include making an entry in your reflective diary or notebook. When completed, these tasks will provide a useful aide-mémoire for assessed work (including a reflective essay or learning log) and can be used as the basis for the first draft of your project report. It is worth pointing out here that many consultancy reports for organisations do not require you to include a review of the academic literature.

As a guide through the research process

If you are intending to use this book to guide you through the research process for a research project you are undertaking, such as your dissertation, we recommend that you read the entire book quickly before starting your research. In that way you will have a good overview of the entire process, including a range of techniques available, and will be better able to plan your work.

After you have read the book once, we suggest that you re-read Section 1.5 on keeping a reflective diary or notebook and Sections 14.2–14.10 on writing first. Then work your way through the book again following the chapter order. This time you should attempt the self-check questions, review and discussion questions and those questions associated with each case study to ensure that you have understood the material contained in each chapter prior to applying it to your own research project. Your responses to self-check questions can be assessed using the answers at the end of each chapter.

If you are still unsure as to whether particular techniques, procedures or ideas are relevant, then pay special attention to the 'Focus on student research', 'Focus on management research' and 'Focus on research in the news' boxes. 'Focus on student research' boxes are based on actual students' experiences and illustrate how an issue has been addressed or a technique or procedure used in a student's research project. 'Focus on management research' boxes discuss recent research articles in established refereed academic journals, allowing you to see how research is undertaken successfully. These articles are easily accessible via the main online business and management databases. 'Focus on research in the news' boxes provide topical news stories of how particular research techniques, procedures and ideas are used in the business world. You can also look in the 'Further reading' for other examples of research where these have been used. If you need further

information on an idea, technique or procedure then, again, start with the references in the further reading section.

Material in some of the chapters is likely to prove less relevant to some research topics than others. However, you should beware of choosing techniques because you are happy with them, if they are inappropriate. Completion of the tasks in the section headed 'Progressing your research project' at the end of Chapters 2–13 will enable you to generate all the material that you will need to include in your research project, dissertation or consultancy report. This will also help you to focus on the techniques and ideas that are most appropriate to your research. When you have completed these tasks for Chapter 14 you will have written your research project, dissertation or consultancy report and also prepared a presentation using slides or a poster.

As a reference source

It may be that you wish to use this book now or subsequently as a reference source. If this is the case, an extensive index will point you to the appropriate page or pages. Often you will find a 'checklist' box within these pages. 'Checklist' boxes are designed to provide you with further guidance on the particular topic. You will also find the contents pages and the glossary useful reference sources, the latter defining over 750 research terms. In addition, we have tried to help you to use the book in this way by including cross-references between sections in chapters as appropriate. Do follow these up as necessary. If you need further information on an idea or a technique then begin by consulting the references in the further reading section. Wherever possible we have tried to reference books that are in print and readily available in university libraries and journal articles that are in the major business and management online databases.

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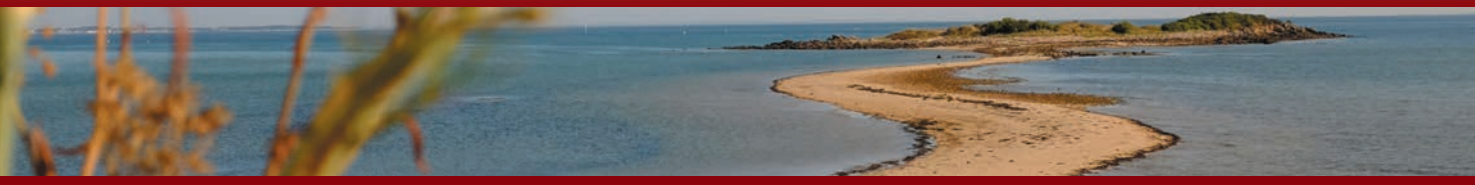
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Preface

In writing the ninth edition of *Research Methods for Business Students* we have, alongside the many comments we have received regarding previous editions, considered the implications of the Covid-19 pandemic for undertaking research. The pandemic invariably caused us to adapt the way we do research posing new challenges for gaining access and recruiting people to take part, and in the collecting of data (Nind et al., 2021). Alongside an already growing use of online questionnaires, there was a shift from face-to-face to online and telephone interviews. The former of these made considerable use of cloud based video-conferencing and the latter computer assisted telephone interviewing. Ethnographic, diary and other expressive methods were also used more widely.

In response to these challenges and over developments we have fully revised the book, expanding our consideration of online, ethnographic, diary and other expressive methods and the analysis of the resulting data. In particular: Chapter 1 now includes a discussion of responsible business research; Chapter 2 contains considerably more detail on developing research questions including using the AbC (Abstract, Context) rule; Chapter 4 now considers the interrelationships between paradigms and philosophies in more depth; Chapter 5 now considers engaged scholarship; Chapter 6 now considers Internet mediated access and associated issues of ethics in more detail; Chapter 7 discusses using purchased database lists and volunteer panels alongside more detailed discussions of sample size; Chapter 9 contains enlarged sections on using researcher and informant created videos, static images and audio recordings in observation; Chapter 10 has a new section on evaluating interview practice looking at conversational space mapping and language cleanliness; Chapter 11 now provides an overview of scale development; Chapter 13 includes more detail on transcription and thematic coding, including using the Gioia method; Chapter 14 includes more detailed advice regarding using quotations from transcripts, diaries and other documentary data, as well as on poster design; and we have developed further the Glossary, which now includes over 750 research-related terms. New case studies at the end of each chapter have been developed with colleagues, providing up-to-date scenarios through which to illustrate issues associated with undertaking research. Alongside this we have also taken the opportunity to update many examples and revise the tables of Internet addresses.

As in previous editions, we have taken a predominantly non-software-specific approach in our discussion of methods. By doing this, we have been able to focus on the general principles needed to utilise a range of analysis software and the Internet effectively for research. However, recognising that many students have access to sophisticated data collection and analysis software and may need help in developing these skills, we continue to provide access to up-to-date 'teach yourself' guides to Qualtrics™, IBM SPSS Statistics™, Excel™ and Internet searching via the book's website (www.pearsoned.co.uk/saunders). Where appropriate, these guides are provided with data sets. In the preparation of the ninth edition we were fortunate to receive considerable feedback from colleagues and students

in universities throughout the world. We are extremely grateful to all the reviewers who gave their time and shared their ideas.

Inevitably, the body of knowledge of research methods has developed further since 2019, and we have revised all chapters accordingly. Our experiences of teaching and supervising students and working through the methods in classes have suggested alternative approaches and the need to provide alternative material. Consequently, we have taken the opportunity to update and refine existing worked examples, remove those that were becoming dated, and develop new ones where appropriate. However, the basic structure remains much the same as the previous eight editions.

Other minor changes and updating have been made throughout. Needless to say, any errors of omission and commission continue to remain our responsibility.

As with previous editions, much of our updating has been guided by comments from students and colleagues, to whom we are most grateful. We should like particularly to thank students from University of Birmingham, and various Doctoral Symposiums for their comments on all of the chapters. Colleagues in both our own and other universities have continued to provide helpful comments, advice and ideas. We are particularly grateful to Heather Cairns-Lee, Zeineb Djebali, Colin Hughes, Emrah Karakaya, Juliet Kele, Amanda Lee, Ben Saunders, and Nicholas Wheeler for their insightful comments and help with early drafts of chapters. Colleagues and friends again deserve thanks for their assistance in providing examples of research across the spectrum of business and management, co-authoring chapters, writing case studies and in reviewing parts of this book: Neve Abgeller, Mina Beigi, Alexandra Bristow, Clare Burns, Catherine Cassell, Fariba Darabi, Viktor Dörfler, Adina Dudau, Sarah Forbes, Mat Hughes, Joséphine Lapointe, Natasha Mauthner, Megane Miralles, Emily Morrison, Trevor Morrow, Shahrzad Nayyeri, Jonathan Scott, Maura Sheehan, Melika Shirmohamma, Marc Stierand and Catherine Wang.

We would also like to thank all of the staff at Pearson (both past and present) who supported us through the process of writing the ninth edition. Our thanks go, in particular, to Vicky Tubb, our commissioning editor, and Kay Richardson our online content developer for their continuing support and enthusiasm throughout the process. We would also like to express our thanks to Andrew Muller as content producer and as copy-editor.

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March 2022

Reference

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Chapter 1



Research, reflective diaries and the purpose of this book

Learning outcomes

By the end of this chapter you should be able to:

- define the nature of research;
- outline the features of business and management research;
- recall the stages you will need to complete (and revisit) as part of your research process;
- understand the importance of keeping a reflective diary;
- recognise the purpose, structure and features of this book;
- progress your research project by starting to make entries in your reflective diary or notebook.

1.1 Introduction

This book is designed to help you to undertake your research project, whether you are an undergraduate or postgraduate student of business and management or a practising manager. It provides a clear guide on how to undertake research as well as highlighting the realities of undertaking research, including the more common pitfalls. The book will provide you with the necessary knowledge and skills to undertake a piece of research from first thoughts about a potential research topic to writing your project report and delivering an oral presentation. As such, you will find it useful as a manual or handbook on how to tackle your research project.

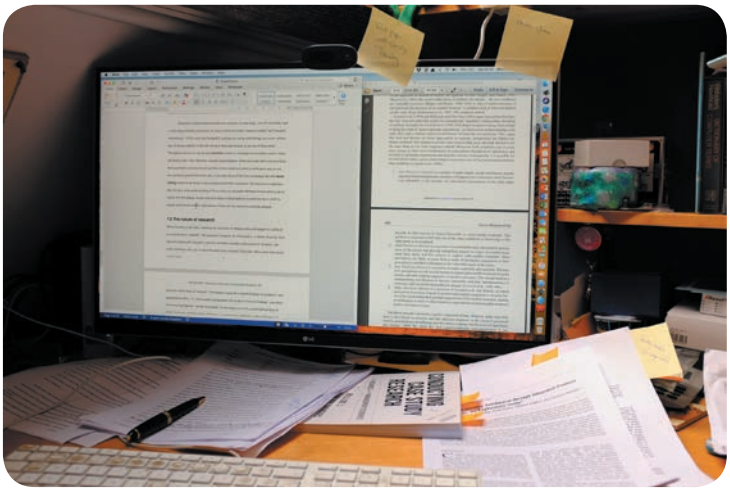
After reading the book you will understand what it means to review the literature critically; have been introduced to research philosophies and approaches to reasoning; explored a range of strategies, techniques and procedures with which you could collect and analyse data; and considered how to report and present your research. Of equal importance, you will know that there is no one best way for undertaking all research. Rather you will be aware of the choices you will have to make and how these will impact upon what you can find out. This means you will be able to make a series of informed choices including your research philosophy, approaches to reasoning, strategies, techniques and procedures that are most suitable to your own research project and be able to justify them. In reading the book you will have been introduced to the



wealth of data that are available online, both online and face-to-face procedures for collecting your own data and techniques for analysing different types of data, have had a chance to practise them, and be able to select and justify which to use.

The invention of Post-it® notes

The Post-it® note is one of the best-known and most widely used office products in the world. Yet, despite the discovery of the repositionable adhesive that made the Post-it® note possible in 1968, it was not until 1980 that the product was introduced to the market (Post-it® 2022). In the 1960s, 3M research scientist Spencer Silver was looking for ways to improve the adhesive used in tapes. However, he discovered something quite different from what he was looking for, an adhesive that did not stick strongly when coated onto the back of tapes! What was unclear was how it might be used. Over the next five years he struggled to find a use for his new adhesive, talking about it and its merits to colleagues whenever possible. He became known as 'Mr Persistent' because he would not give up!



Post-it® notes in use
Source: © Mark NK Saunders 2018

Most people working for 3M know the story of what happened next and how the Post-it® note concept came about. A new product development researcher working for 3M, Art Fry, was frustrated by how the scraps of paper he used as bookmarks kept falling out of his church choir hymn book. He realised that Silver's adhesive would mean his bookmarks would not fall out. Soon afterwards the Post-it® note concept was developed and market research undertaken. This was extremely difficult as the product was revolutionary and was, in effect, designed to replace pieces of torn scrap paper! However, despite some initial scepticism within the company, Post-it® notes were launched in 1980. One year after their launch, they were named 3M's outstanding new product.

While your research project will be within the business and management discipline rather than natural science (such as developing a new adhesive), our opening vignette still offers several insights into the nature of research and in particular the business and management research you will be undertaking. It highlights that when undertaking research we should be open to finding the unexpected and how sometimes the applicability of our research findings may not be immediately obvious. It also emphasises the importance of discussing your ideas with other people.

However, a word of caution before you continue. In your study, you will inevitably read a wide range of books and articles. In many of these the terms 'research method' and 'research methodology' will be used interchangeably, perhaps just using methodology as a more verbose way of saying method. In this book we have been more precise in our use of these terms. Throughout the book we use the term **method** to refer to a procedure or technique used to obtain and analyse data. This, therefore, includes questionnaires, observation and interviews as well as both quantitative (statistical) and qualitative (non-statistical) analysis techniques and, as you have probably gathered from the title, is the main focus of this book. In contrast, the term **methodology** refers to the theory of how research should be undertaken. We believe it is important that you have some understanding of this so that you can make informed choices about your research. For this reason, we also discuss a range of philosophical assumptions upon which research can be based and the implications of these for the method or methods adopted.

1.2 The nature of research

When browsing social media, listening to the radio, watching television, listening to the radio or reading a daily newspaper it is difficult to avoid the term 'research'. The results of 'research' are all around us. A debate about the findings of a recent poll of people's opinions inevitably includes a discussion of 'research', normally referring to the way in which the data were collected. Politicians often justify their policy decisions on the basis of 'research'. Newspapers report the research findings of academics and organisations (Box 1.1). Documentary programmes tell us about 'research findings' and advertisers may highlight the 'results of research' to encourage you to buy a particular product or brand. However, we believe that what these examples really emphasise is the wide range of meanings given to the term 'research' in everyday speech.

Walliman (2020) argues that many of these everyday uses of the term 'research' are not research in the true meaning of the word. As part of this, he highlights ways in which the term is used wrongly:

- just collecting facts or information with no clear purpose;
- reassembling and reordering facts or information without interpretation;
- as an activity with no or little relevance to everyday life;
- as a term to get your product or idea noticed and respected.

The first of these highlights that, although research often involves the collection of information, it is more than just reading a few books or articles, talking to a few people or asking people questions. While collecting data may be part of the research process, if it is not undertaken in a systematic way and without a clear purpose, it will not be seen as research. The second of these is commonplace in many reports. Data are collected, perhaps from a variety of different sources, and then assembled in a single document with the sources of these data listed without any explanation of what the data means. In other words, there is no interpretation of the data collected. Again, while the assembly of data from a variety of sources may be part of the research process, without interpretation it is not research. The third emphasises, as shown in the opening vignette, how despite research often appearing abstract, it influences our daily lives and creates our understanding of the world. Finally, the term 'research' can be used to get an idea or product noticed by people and to suggest that people should have confidence in it. In such instances, when you ask for details of the research process, these are either unclear or not forthcoming.

Box 1.1 Focus on research in the news

What would persuade you to change?

'Megastudies' are teasing out what helps people to behave differently

By Andrew Hill

Gym members are 'the fruit fly of habit research', in the words of behavioural scientist Katy Milkman.

Natural scientists keep coming back to experiment on the flies because the insects share 60 per cent of their DNA with humans. Similarly, social scientists swarm around gym users, or at least their data, to work out why people stick with, or drop, healthy workout habits.

Milkman is both a gym-goer and, as a professor at the Wharton School of the University of Pennsylvania, an avid student of other people's gym-going habits. Her interest goes well beyond the locker room, though. Find the key to good repeat behaviour, she suggests, and you can use it to unlock motivation at work or in your studies or build a better and more productive business.

Milkman and Angela Duckworth, best known for her work on 'grit' and the book of the same name, organised a 'megastudy' in partnership with the 24-Hour Fitness chain, simultaneously testing on its 60,000 members, 54 four-week micro-interventions suggested by dozens of scientists.

Of the ideas they tested, 45 per cent increased weekly gym visits by between 9 and 27 per cent, according to the study, recently published in the journal *Nature*. All the ideas outperformed a placebo control programme.

The most effective nudge turned out to be the offer of a few pennies of reward, in the form of Amazon vouchers, for users who returned to the gym after missing a session. The study also tested 'temptation bundling', based on ideas Milkman explored in previous research looking at how people are encouraged to go to the gym if they combine visits with the opportunity to listen to favourite audiobooks. Persuasion expert Robert Cialdini, bestselling author of *Influence,* proposed an experiment that successfully demonstrated the power of simply informing users that most Americans were exercising, and numbers were growing. The technique boosted gym visits by 24 per cent.

The willing participation of Milkman and Duckworth's gym-going 'fruit flies' is only a start. Megastudies are planned or under way to look at how teachers can improve the performance of their pupils, universities can retain students, people can create emergency savings pots, societies can reduce misinformation and – critically during Covid-19 – patients can be encouraged to consider vaccination.

In *How to Change,* Milkman poses this question: 'If you can't persuade people to alter their behaviour by telling them that change is simple, cheap and good for them, what magical ingredient will do the trick?' Megastudies could open a fast track to find the magic spell.

FT *Source:* Abridged from the article by Andrew Hill, *Financial Times,* 10 February 2022.
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Based upon this brief discussion we can already see that research has several characteristics:

- The purpose, to find out things, is stated clearly.
- The data are collected systematically.
- The data are interpreted systematically.

We can therefore define **research** as a process that is undertaken in a systematic way with a clear purpose, to find things out. Two phrases are important in this definition: 'systematic way' and 'to find out things'. 'Systematic way' suggests that research is based on logical relationships and not just beliefs (Ghauri et al. 2020). As part of this, your research will involve an explanation of the method or methods used to collect the data, will argue why the results obtained are meaningful and will explain any limitations that are associated with them. 'To find out things' suggests there are a multiplicity of possible purposes for your research. It is therefore an activity that has to be finished at some time to be of use. This will undoubtedly be true for your research project, which will have a specific deadline. Purposes are often stated as describing, explaining, understanding, criticising and analysing (Ghauri et al. 2020). Crucially, it also emphasises you have a clear purpose or set of 'things' that you want to find out, such as the answer to a question or number of questions or the solution to a problem.

1.3 Business and management research

Using our earlier definition of research we can define business and management research as undertaking systematic research to find out things about business and management. Ongoing debate within the literature has explored the transdisciplinary nature of business and management research, its relevance and utility to society, the importance of rigorous methods and, more recently, the need for responsible research in business and management (McKiernan and Tsui 2020).

Trans disciplinarity

Discussions about the nature of management research consider the transdisciplinary nature revealing how it also draws on knowledge from a range of other disciplines such as sociology, psychology and economics, which have differing underlying assumptions. They emphasise that the research 'cannot be reduced to any sum of parts framed in terms of contributions to associated disciplines' (Tranfield and Starkey 1998: 352). In other words, using knowledge from a range of disciplines enables management research to gain new insights that cannot be obtained through using these disciplines separately.

Relevance and utility

Debates about the relevance and utility of management research highlight a belief that it should have the potential for some form of practical consequences. In other words, it should be relevant to and have the potential to impact upon business and management practice. Here it has been argued that such research should complete a virtuous circle of theory and practice (Tranfield and Starkey 1998) through which research on managerial practice informs practically derived theory. This in turn becomes a blueprint for managerial practice, thereby increasing the stock of relevant and practical management

knowledge. Thus, business and management research needs to engage with both the world of theory and the world of practice. Consequently, the problems addressed should grow out of interaction between these two worlds rather than on their own. This suggests that managers are less likely to allow research access unless they can see the utility for their organisations or themselves.

Rigour

Alongside the relevance debate has been a concern for rigour in both quantitative and qualitative methods. An article by Hodgkinson et al. (2001) offers a useful four-fold taxonomy for considering relevance and rigour in relation to managerial knowledge. Using the dimensions of theoretical and methodological rigour, and of practical relevance (as discussed earlier) they identify four quadrants (see Table 1.1). Within this, **theoretical rigour** refers to the clarity and thoroughness with which the research as reported is grounded in existing explanations of how things work. Although part of the same dimension, **methodological rigour** refers to the strength and quality of the research method used in terms of the planning, data collection, data analysis and subsequent reporting; and therefore the confidence that can be placed in the conclusions drawn. Hodgkinson et al. argue that pedantic science is characterised by a focus on increasing methodological rigour at the expense of results that are relevant. This can sometimes be found in refereed academic journals. In contrast, popularist science is characterised by a focus on relevance and usefulness while neglecting theoretical and methodological rigour, examples being found in some books targeted at practising managers. Consequently, while findings might be useful to managers, the research upon which they are based is unlikely to be valid or reliable. Puerile science both lacks methodological rigour and is of limited practical relevance and, although unlikely to be found in refereed academic journals, can be found in other media. Finally, pragmatic science is both theoretically and methodologically rigorous and relevant.

Modes of research

Over the past two decades, debate about the nature of management research has focused on how it can meet the double hurdle of being both theoretically and methodologically rigorous, while at the same time embracing the world of practice and being of practical relevance (Hodgkinson et al. 2001; Wensley 2011); practice being reframed recently more broadly than just the world of practice to being socially useful (Hodgkinson and Starkey 2011) and impactful (MacIntosh et al. 2017). Recognising a lack of relevance for much research, debate centred initially around the work by Gibbons et al. (1994) on the

Table 1.1 A taxonomy for considering the 'relevance gap' in relation to managerial knowledge

Theoretical and methodological rigour	Practical relevance	Quadrant
Higher	Lower	Pedantic science
Lower	Higher	Popularist science
Lower	Lower	Puerile science
Higher	Higher	Pragmatic science

Source: Developed from Hodgkinson et al. (2001)

production of knowledge and, in particular, the concepts of Mode 1 and Mode 2 knowledge creation. **Mode 1** knowledge creation emphasises research in which the questions are set and solved by academic interests, emphasising a basic rather than applied nature, where there is little, if any, focus on utilisation of the research by practitioners. In contrast, **Mode 2** emphasises a context for research governed by the world of practice, highlighting the importance of collaboration both with and between practitioners (Starkey and Madan 2001) and the need for the production of practical relevant knowledge. Based upon this, Starkey and Madan (2001) observe that research within the Mode 2 approach offers a way of bringing the knowledge created in universities together with the needs of businesses, thereby overcoming the double hurdle. Bresnen and Burrell (2012: 25) suggest a further alternative, which they consider is a 'more insidious' form of knowledge production. This form, termed **Mode 0** knowledge creation, they argue has been around since the seventeenth century. It refers to knowledge production based on power and patronage, being particularly visible in the close relationships between sponsor and researcher, for example pharmaceutical industry sponsorship of medical research.

Drawing upon these debates, it could be argued that business and management research not only needs to provide findings that advance knowledge and understanding in this subject area, but it also needs to address business issues and practical managerial problems. However, this would negate the observation that Mode 2 practices develop from Mode 1. It might also result in business and management research that appears to have little obvious commercial benefit being ignored. This, Huff and Huff (2001) argue, could jeopardise future knowledge creation, because as highlighted in the opening vignette, research that is initially not of commercial value can have value in the future. Building upon these ideas, Huff and Huff highlight a further form of knowledge production: Mode 3. **Mode 3** knowledge production focuses on an appreciation of the human condition as it is and as it might become, its purpose being to 'assure survival and promote the common good at various levels of social aggregation' (Huff and Huff 2001: 53); in other words the research is of benefit to humankind rather than business. This emphasises the importance of broader issues of the wider implications of research and, we consider, links to the idea of research being of benefit to society in general rather than just business. Consequently, in addition to research that satisfies your intellectual curiosity for its own sake, the findings of business and management research might also contain practical implications, which may be far broader and complex than perhaps envisaged by Mode 2.

The relevance gap

Tranfield and Denyer (2004) draw attention to concerns resulting from the separation of knowledge producers from knowledge users. This has introduced a schism, or what Starkey and Madan (2001) call the 'relevance gap', which has been the subject of considerable debate. Rousseau (2006) has drawn attention to ways of closing what she terms the prevailing 'research–practice gap' – the failure of organisations and managers to base practices on the best available evidence. She extols the virtues of 'evidence-based management', which derives principles from research evidence and translates them into practices that solve organisational problems. Research findings do not appear to have transferred well to the workplace. Instead of a scientific understanding of human behaviour and organisations, managers, including those with MBAs, continue to rely largely on personal experience, to the exclusion of more systematic knowledge. Within these debates some maintain that the gap between academic research and practice is fundamentally unbridgeable because management researchers and the researched inhabit different worlds, are engaged in different activities and have different research orientations, while others disagree. Hodgkinson

and Rousseau (2009), for example, argue that the research–practice gap is due to more than differences in style and language, and that management researchers can generate knowledge that is both useful to society and academically rigorous.

Not surprisingly, many managers and academics perceive the gap between research undertaken by academics and management as practiced as problematic. Saunders (2011) categorises these as differences between academics' and practitioners' orientations in relation to their foci of interest, methodological imperatives, the key outcomes and how each views the other. These we summarise in Table 1.2, the contrasting orientations indicating where tensions may occur.

However, perhaps the most telling comment on the so-called 'relevance gap' is from Tranfield and Denyer (2004: 13), who assert that ignoring such a gap would be 'unthinkable in other professional fields, such as medicine or engineering, where a national scandal would ensue if science base and practice were not inextricably and necessarily interlinked'. This relates to the idea of conceptualising management as a design science rather than a social science. From the design science perspective, the main purpose of academic management research is to develop valid knowledge to support organisational problem solving. Many researchers would probably agree that the purpose of management research, like other social sciences, can be undertaken from a wide variety of perspectives involving exploration, description, evaluation, explanation and prediction. However, taking a design science perspective focuses upon solution-orientated research to develop valid knowledge which supports practitioners in solving business problems (Van Aken 2005). The counter argument proposes that management practice is characterised by a wide variety of organisational phenomena that are often ambiguous, and may not be suited to rule-like explanations offered by design science, and that there needs to be a balance between the different purposes of research and a need for application (Pandza and Thorpe 2010).

Responsible Research in Business and Management

The creation of the Community for Responsible Research in Business and Management (cRRBM) provided further impetus. They emphasise that findings needed to be both credible (drawn from research undertaken rigorously) and applicable (relevant) to practice if business and management research was to be useful to society (McKiernan and Tsui 2020).

Table 1.2 Practitioner and management researcher orientations

Management researcher		Practitioner
Basic understanding General enlightenment Theoretical explanation 'Why' knowledge Substantive theory building	**Focus of interest**	Usable knowledge Instrumental Practical problem solutions 'How to' knowledge Local theory-in-use
Theoretical and methodological rigour	**Methodological imperative**	Timeliness
Academic publication	**Key outcome**	Actionable results with practice impact
Disdain of practitioner Desire to make a difference to practice	**Views of other**	Deprecate or ignore Belief research can provide relevant (socially useful) fresh insights to managers' problems

Source: Developed from Saunders (2011)

Table 1.3 Community for Responsible Research in Business and Management's seven principles of responsible research

1. Service to society	
Research aims to develop knowledge that benefits business and the broader society locally and globally to create a better world	
Improving rigour	***Ensuring relevance***
2. Valuing both basic and applied contributions	***5. Stakeholder involvement***
Contributions of both basic and applied research are recognised	Different stakeholders can play critical role without compromising independence or autonomy of the research
3. Valuing plurality and multidisciplinary collaboration	***6. Impact on stakeholders***
Diversity in research themes, methods, forms of scholarship, types of inquiry and interdisciplinary collaboration reflect plurality and complexity of societal and business problems and are valued	Research that has an impact on diverse stakeholders, especially contributing to better business and a better world, is rewarded
4. Sound methodology	***7. Broad dissemination***
Uses sound scientific methods and processes in both quantitative and qualitative or both theoretical and empirical domains	Diverse forms of knowledge dissemination that collectively advance basic knowledge and practice are valued

Source: Developed from McKiernan and Tsui (2020)

Their objective is 'to change research practice for a better science and towards having a greater impact, especially on society as a whole' (McKiernan and Tsui 2020, p. 491). cRRBM offer seven principles to guide research and ensure it is both credible in terms of a rigorous method and methodology, and relevant to society (Table 1.3). Of these, principle 1 – service to society, is considered core, developing knowledge that creates a better world. Principles 2 to 4 (left column) are concerned with aspects of methodological rigour in research, whereas principles 5 to 7 focus on ensuring research is relevant to society. As you digest these seven principles, think about how they relate to both the earlier debates we have outlined and your own beliefs regarding how business and management research should be undertaken (Box 1.2).

Basic and applied research

Table 1.3 highlights responsible research in business and management valuing both basic and applied contributions, and thus although the immediate purpose and the context of your research project can differ considerably it can still benefit broader society. For some research projects your purpose may be to understand and explain the impact of something, such as a particular policy. You may undertake this research within an individual organisation and suggest appropriate action based on your findings. For other research projects you may wish to explore the ways in which various organisations do things differently. In such projects your purpose may be to discover and understand better the underlying processes in a wider context, thereby providing greater understanding for practitioners. For yet other research projects you may wish to place an in-depth investigation of an organisation within the context of a wider understanding of the processes that are operating.

Despite this variety, we believe that all business and management research projects can be placed on a continuum (Figure 1.1) according to their purpose and context. At one



Box 1.2 Focus on management research

Responsible research

In an article in *Academy of Management Discoveries,* Tsui (2021) discusses the 'necessary interdependence' (p. 166) of rigour and relevance and shows how the seven principles of responsible research can guide studies of responsible leadership.

Within this she outlines how each of these principles applies to the study of responsible leadership posing a series of illustrative questions that can be considered when designing responsible leadership studies. She notes that while a study may not meet all of the seven principles, using them as a guide to research design will increase the probability that the findings will be credible in terms of rigour and useful in terms of relevance.

Tsui stresses that the Community for Responsible Research in Business and Management aims to move research practices from their focus on the interests of researchers (and their universities) to a focus on the ultimate users of research knowledge, these including managers, policymakers and students. She concludes that for business and management, research should produce credible knowledge to enable all types of organisations to effect positive change for a better world. Within this she notes that responsible leadership offers a 'promising area in which to apply the principles of responsible research' (Tsui 2021, p. 169).

Basic research ⟷ **Applied research**

Purpose:
- expand knowledge of processes of business and management
- results in universal principles relating to the process and its relationship to outcomes
- findings of significance and value to society in general

Context:
- undertaken by people based in academia
- choice of topic and objectives determined by the researcher
- flexible timescales

Impact:
- initially academic community and researcher
- may also impact policy and practice

Purpose:
- improve understanding of particular business or management problem
- results in solution to problem
- new knowledge limited to problem
- findings of practical relevance and value to manager(s) in organisation(s)

Context:
- undertaken by people based in a variety of settings including organisations and academia
- objectives negotiated with originator
- tight ttimescales

Impact:
- initially policy and practice community and researcher
- may also impact academia

Figure 1.1 Basic and applied research
Sources: Authors' experience; Easterby-Smith et al. (2021); Hedrick et al. (1993), MacIntosh et al. (2017)

extreme of the continuum is research that is undertaken purely to understand the processes of business and management and their outcomes. Such research is undertaken largely in universities and largely as the result of an academic agenda. Its key impact is

within the academic community, with relatively little attention being given to relevance to or impact on practice. This is often termed **basic**, **fundamental** or **pure research** and, although the focus may not have been on practical or commercial value, the resultant model may be of considerable utility having impact in both academic and practitioner communities. Given our earlier discussion, it is unlikely that Mode 2 and Mode 3 business and management research would fulfil the criterion of being undertaken 'purely to understand' due to at least some consideration being given to the practical consequences of what has been found out. Through considering the practical consequences, the research would start to move towards the other end of the continuum (Figure 1.1). At this end is research that is impactful for practitioner communities being of direct and immediate use to managers, addresses issues that they see as important, and is presented in ways that they understand and can act on. This is termed **applied research**. In our view, applied research can be very similar to consultancy, particularly when the latter is conducted in a thorough manner.

Wherever your research project lies on this basic–applied continuum, and for each of the orientations in Table 1.2, we believe that you should undertake your research with rigour. To do this you will need to pay careful attention to the entire research process.

1.4 The research process

Most research textbooks represent research as a multi-stage process that you must follow to undertake and complete your research project. The precise number of stages varies, but they usually include formulating and clarifying a topic, reviewing the literature, designing the research, collecting data, analysing data and writing up. In the majority of these the research process, although presented with rationalised examples, is described as a series of stages through which you must pass. Articles you have read may also suggest that the research process is rational and straightforward. Unfortunately, this is very rarely true, and the reality is considerably messier, with what initially appear as great ideas sometimes having little or no relevance. While research is often depicted as moving through each of the stages just outlined, one after the other, this is unlikely to be the case. In reality some stages will overlap, and you will probably revisit each stage more than once. Each time you revisit a stage you will need to reflect on the associated issues and refine your ideas. Alongside this you will need to consider ethical and access issues during the process.

This book also presents the research process as a series of linked stages and gives the appearance of being organised in a linear manner. However, as you use the book you will see that we recognise the concurrent and iterative nature of the research process you will follow in the examples of research by academic researchers, student research, how research is reported in the news and case studies, as well as our extensive use of cross-referencing. As part of this process we believe it is vital that you spend time formulating and clarifying your research topic. This we believe should be expressed as one overarching research question that your research must answer, or an aim your research will address. These will be accompanied by a set of objectives or investigative questions. However, we would also stress the need to reflect on your ideas continually and revise both these and the way in which you intend to progress your research.

We believe regular writing is an intrinsic part of developing your ideas and understanding your research. Indeed we, and our students, have found that it is not until we write our ideas that we discover where our arguments need further clarification. Often this will involve revisiting stages (including research question(s) and objectives) and working through them again. There is also a need to plan ahead, thereby ensuring that

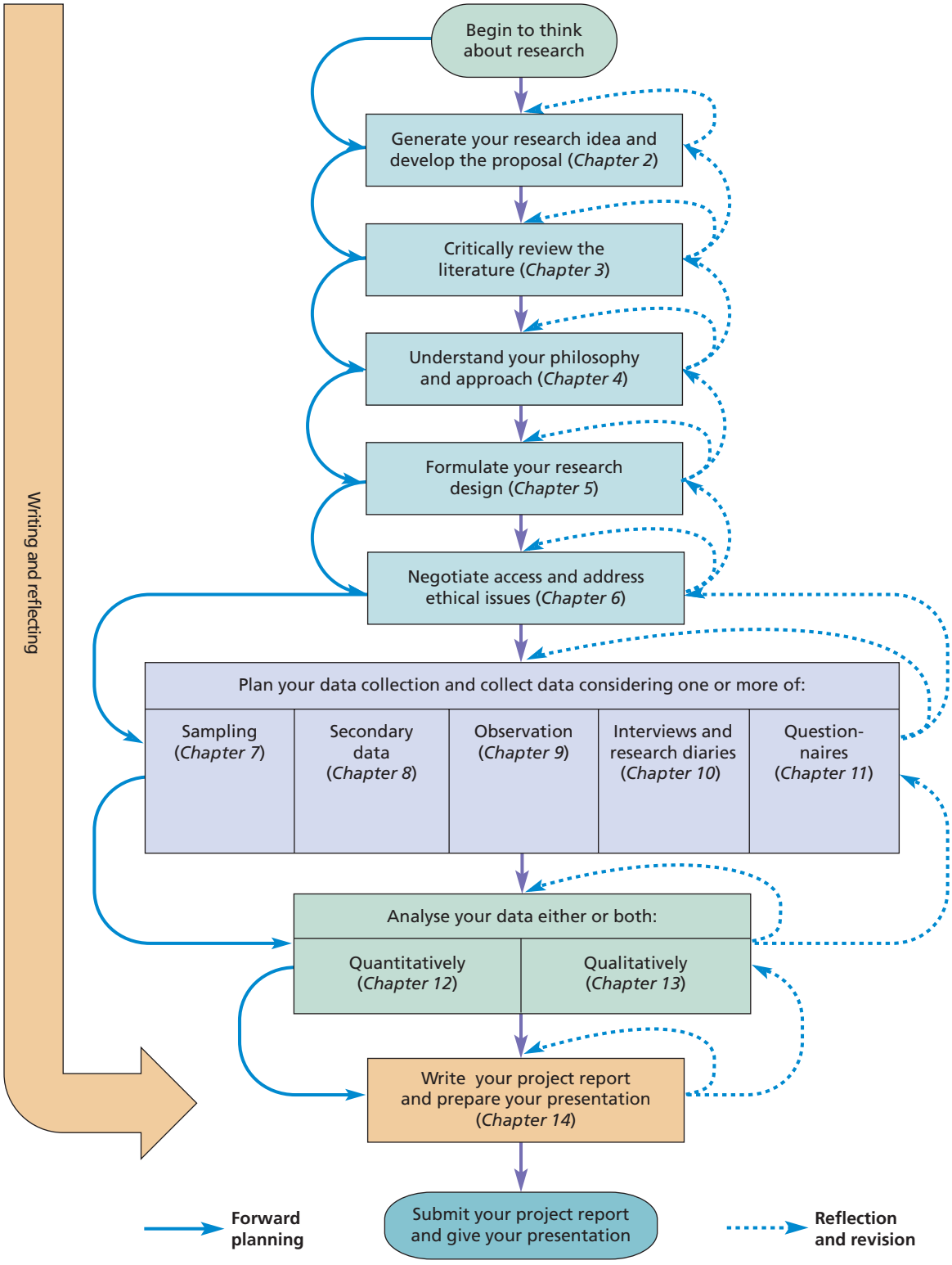


Figure 1.2 The research process

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2022

the necessary preliminary work for later stages has been undertaken. This is emphasised by Figure 1.2, which also provides a schematic index to the remaining chapters of the book. Within this flow chart (Figure 1.2) the stages you will need to complete as part of your research project are emphasised in the centre of the chart. However, be warned: the process is far messier than a brief glance at Figure 1.2 suggests!

1.5 Keeping a reflective diary or research notebook

You will notice in Figure 1.2 we include a series of arrows labelled 'reflection and revision'. During your research project you will find it helpful to keep a separate **reflective diary** or reflective journal – the terms are used interchangeably. In your diary you can note down what has happened and the lessons you have learnt both from things that have gone well and things that have not gone so well during the research process, on a regular basis. Others keep a **learning journal,** which uses a more free-flowing structure to describe, analyse and evaluate what has happened. Some researchers incorporate their reflective diary or journal into a **research notebook** in which they chronologically record other aspects of their research project such as useful articles they have read, notes of discussions with their project tutor and other interesting conversations alongside their emergent thoughts about all aspects of their research. We have also found this helpful. The process of observing your own research practice and examining the way you do things is termed **reflection**. However, there is a more complex recursive process incorporating interpretation as well as reflection and involving you in thinking about your experiences and questioning the way you have done things. This process, known as **reflexivity**, involves you being constantly aware of your effects on your research. You should therefore be thinking about and interpreting your role in the research and the way in which this is influenced by the object of the research; and acknowledging the way you affect both the processes of the research and the outcomes and how they have affected you (Corlett and Mavin 2018; Box 1.3, Section 13.5).

Lincoln et al. (2018: 124) define **reflexivity** as 'the process of reflecting critically on the self as researcher'. As we say elsewhere in this book, research is like going on a journey. It is a journey that involves you making a number of decisions. Being reflexive will ensure you reflect on why and how you develop your research idea, why you prefer one research strategy over another, how you engage with those whom you wish to take part in your research, how you use the data they reveal to you, how you deal with any problems that confront you during your project and so on. It will allow you to surface any preconceived ideas that you may have about your topic and what you expect to find and help you to be aware of your own biases. Through doing this you will recognise your role or 'self' within the process of the research, remaining critically reflective and being open to new learning.

Critical reflectivity may be approached not just through an introspective examination of the ways your attitudes and actions affect your role as researcher, but also in relation to the way broader social assumptions and context may influence it (Charmaz 2017). Many preconceived ideas and personal biases have a social basis. This can have consequences for the research environment in terms of the need for researchers not only to reflect on their own predilections, preconceived ideas and bias, but also on those of potential participants in a research project. Such reflections are likely to also be appropriate as you undertake your research project.

You will almost certainly remember from your earlier studies the work of Kolb and of Honey and Mumford on the learning cycle (Marchington et al. 2021). This views the learning process as going through a four-stage cycle of:

Box 1.3 Focus on student research

Keeping a reflective diary as part of a research notebook

As part of her master's research project, Amanda's project tutor had encouraged her to incorporate her reflective diary into a research notebook. Over time she began to realise that her diary entries were providing her with a useful way of not only recording her experiences but also questioning her research practice. An extract from her reflective diary follows.

Monday 6 April 7:30 p.m.

I did my first observation today in a shop, watching and recording what people did when they came in, browsed the shoes and then, perhaps, made a purchase and left. Following what the textbook had told me, I sat as unobtrusively as possible in the corner on one of the sofas and used my tablet to make notes about the customers' and the sales assistants' behaviours. I'd prepared a checklist of what I was looking for. It all seemed to go well and, using the checklist, I made some interesting observations about the sorts of interactions customers were having with the sales assistants when they purchased shoes. Also I feel my position was unobtrusive and I was not really noticed. What went less well was the fact I could not hear precisely what was being said. I was too far away from the sales assistant and the customer. I need to make adjustments and be closer next time, while still being unobtrusive.

10:00 p.m.

I have just watched a television documentary on retail shopping and the changing nature of such shops. I'm feeling worried that I might not have really observed all of what was happening. The programme makers had filmed the same purchase in a shop from three different views, presumably using different cameras. One camera filmed the purchase from low down and appeared to be quite a distance from the purchase. It seemed as if the camera operator was sitting on a sofa, rather like my observation. Another had filmed it more closely from behind the sales assistant so you could see the expressions on the customer's face and easily hear the conversation. The final camera had filmed from behind the customer and this time you could see the sales assistant's face; she looked really disinterested. I had never really thought about the impact of my position in the shop on what I would see and the data I would be able to collect until I saw that programme. I definitely need to think this through.

Tuesday 7 April, 7:30 a.m.

On reflection I really need to think more carefully about where would be the best place from which to observe and collect my data. I have already thought about the data I need, but given my emphasis on the interaction with customers, I think I was not in the right place to collect it for my first observation. I need to be able to see both the customer and the sales assistant and to hear what is being said and the tones of the voices. But, at the same time, I need to be unobtrusive as well, so my presence does not influence the interaction. Also, there is also only one of me, so I cannot be in three places at once! However, if I remember correctly, there was a place to sit and try on shoes next to the sales desk. Perhaps that would be a better place to observe. I cannot use videography to record what is happening as, if I ask for permission to do this, it will completely change the way the people react with each other. However, I could note down what I saw and heard immediately afterwards. I'll talk to my project tutor.

1. concrete experience;
2. observation and reflection in relation to the experience;
3. forming abstract concepts and generalisations from these observations and reflections;
4. testing these concepts and generalisations in new situations.

The learning cycle emphasises that for learning to happen you need to pass through the complete cycle, as without reflection there will be no learning from experience. Such



Box 1.4 Checklist of questions to ask yourself when making reflective diary entries

In relation to each experience. . .

- ✔ What has gone well?
  - Why has it gone well?
  - So what does this mean in relation to my research?
- ✔ What has not gone so well?
  - Why has it not gone so well?
  - So what does this mean in relation to my research?
- ✔ What adjustments will/did I make to my research following my reflection?

Looking back. . .

- ✔ How could I have improved on the adjustments made?
  - Why?
- ✔ What key themes have emerged over several entries?
- ✔ How will I apply what I have learnt from each experience to new situations?

reflection is the process of stopping and thinking about a concrete experience that has happened or is happening, and the subsequent forming of concepts and generalisations, so you can apply what you have learnt from your experiences to new situations. In other words, you need to have an inquiring imagination and persistently ask yourself 'why?', 'what if?' and 'so what?' (Gabriel 2015).

Given the benefits to learning, it is not surprising that many universities require students to write a reflective essay or a reflective practice statement as part of the assessment for their research project. To do this well, and more importantly to enhance your learning during the research process, we recommend that you keep a reflective diary, research notebook or learning journal. You should write in this frequently regarding what has gone well, what has gone less well, what you have learnt from each experience and how you will apply this learning in the future (Box 1.3). Indeed, as you read on you will find that we ask you to do this at the end of each chapter in the section 'Progressing your research project'! Questions our students have found helpful to guide them when writing their diary entries are listed as a checklist in Box 1.4. Be warned, many students forget to write in their reflective diaries regularly; this makes writing a good reflective essay difficult as much of the learning will have been forgotten!

1.6 The purpose and structure of this book

The purpose

As we stated earlier (Section 1.1), the overriding purpose of this book is to help you to undertake research. This means that early on in your research project you will need to be clear about what you are doing, why you are doing it and the associated implications of what you are seeking to do. You will also need to ensure that you can show how your ideas relate to research that has already been undertaken in your topic area and that you have a clear research design and have thought about how you will collect and analyse your data. As part of this you will need to consider the validity and reliability (or credibility and dependability) of the data you intend to use, along with associated ethical and access

issues. The appropriateness and suitability of the analytical techniques you choose to use will be of equal importance. Finally, you will need to write and present your research project report as clearly and precisely as possible, making sure you meet all your university's assessment criteria.

The structure of each chapter

Each of the subsequent chapters deals with part of the research process outlined in Figure 1.2. The ideas, methods and techniques are discussed using appropriate terms but as little jargon as possible. Where appropriate you will find summaries of these, using tables, checklists or diagrams. When new terms are introduced for the first time they are shown in **bold,** and a definition or explanation follows shortly afterwards. They are also listed with a brief definition in the glossary. The use of appropriate information technology is considered in most instances as an integral part of the book. Discussion of information technology is not software specific but is concerned with general principles. However, we recognise that you may wish to find out more about how to use data analysis software packages and so have included tutorials for the quantitative data analysis software IBM SPSS Statistics and the spreadsheet Excel™ (with practice data sets) on this book's companion website. These will enable you to utilise whatever software you have available most effectively. We have also included the Smarter Online Searching Guide to help you with your online searches. Sections in chapters have been cross-referenced as appropriate, and an index is provided to help you to find your way around the book.

Included within each chapter are one or more boxes titled *Focus on student research.* These, like Box 1.3, reflect actual research projects, undertaken by students, in which points made in the book are illustrated. In many instances these examples illustrate possible pitfalls you may come across while undertaking your research. Further illustrations are provided by *Focus on management research* and *Focus on research in the news* boxes. *Focus on management research* boxes (such as Box 1.2) discuss recent research in business and management. These are normally derived from refereed academic journal articles, and you are likely to be able to download the actual articles from online databases at your university. *Focus on research in the news* boxes, one of which you will have already read (Box 1.1), offer abridged versions of topical newspaper articles that illustrate pertinent research-related issues. All these will help you to understand the technique or idea and to assess its suitability or appropriateness for your research. Where a pitfall has been illustrated, it will, it is hoped, help you to avoid making the same mistake. There is also a series of boxed *Checklists* (such as Box 1.4) to provide you with further focused guidance for your own research. At the end of each chapter there is a *Summary* of key points, which you may look at before and after reading the chapter to ensure you digest the main points.

To enable you to check that you have understood the chapter, a series of *Self-check questions* is included at the end. These can be answered without recourse to other (external) resources. *Answers* are provided to all these self-check questions at the end of each chapter. Self-check questions are followed by *Review and discussion questions.* These suggest a variety of activities you can undertake to help you further develop your knowledge and understanding of the material in the chapter, often involving discussion with a friend. Self-test multiple choice questions with feedback are available on this book's companion website. Each chapter also includes a section towards the end headed *Progressing your research project.* This contains a series of tasks that will help you to consider the implications of the material covered by the chapter for your research project. Undertaking the tasks in the section *Progressing your research project* for each chapter will enable you to generate all the material that you will need to include in your project report and, where

required, your reflective statement. These tasks involve you in undertaking activities that are more complex than self-check questions, such as an online literature search or designing and piloting a questionnaire. They are designed to help you to focus on the aspects that are most appropriate to your research project. However, as emphasised by Figure 1.2, you will almost certainly need to revisit and revise your answers as your research progresses.

Each chapter is also accompanied by *References, Further reading* and a *Case study*. Further reading is included for two distinct reasons:

- to direct you to other work on the ideas and concepts contained within the chapter;
- to direct you to further examples of research where the ideas contained in the chapter have been used.

The main reasons for our choice of further reading are therefore indicated.

The new case studies towards the end of every chapter are drawn from a variety of business and management research scenarios and have been based on the case study's authors' and students' experiences when undertaking a research project. All case studies have been written to highlight real issues that occur when undertaking business and management research. To help to focus your thoughts or discussion on some of the pertinent issues, each case is followed by evaluative questions. The additional case studies listed for each chapter are available from the book's companion website. This provides hyperlinks to over 80 additional case studies.

An outline of the chapters

The book is organised in the following way.

Chapter 2 is written to assist you in the generation of ideas, which will help you to identify a suitable research topic and offers advice on what makes a good research topic. If you have already been given a research topic, perhaps by an organisation or tutor, you will need to refine it into one that is feasible and should still therefore read this chapter. After your idea has been generated and refined, the chapter discusses how to turn this idea into an overarching research question(s), aim and objectives. Finally, the chapter provides advice on how to develop your research proposal.

The importance of critically reviewing the literature for your research is discussed in Chapter 3. This chapter commences by explaining what is meant by 'critical', when reviewing literature. The chapter explains the purpose of reviewing the literature, highlighting the content and possible structures. The range of secondary and grey literature sources are outlined, and a range of strategies discussed, including the use of Systematic Review Methodology. We also offer advice on how to plan and conduct your searches using online databases and search engines, and how to record (reference) items, evaluate their relevance and subsequently draft your critical review, acknowledging the work of others to avoid plagiarism.

Chapter 4 introduces the conceptualisation of the research process as peeling layers from a (research) onion. We start with the outermost layer considering five different research philosophies, including positivism, critical realism, interpretivism, post modernism and pragmatism. Within this the functionalist, interpretive, radical humanist and radical structuralist paradigms are discussed. The next layer considers deductive, inductive, abductive and retroductive approaches to theory development. In this chapter we challenge you to think about your own values and beliefs reflexively and the impact this will have on the way you undertake your research.

These ideas are developed further in Chapter 5, which, using the next three layers of the research onion, explores formulating your research design. Research design is the way you

turn your overarching research question or aim and your objectives into a research project. In this chapter we start with the methodological choice layer. This comprises quantitative, qualitative, multiple and mixed methods and, within this, whether your research is exploratory, descriptive, explanatory or evaluative. Next we explore the research strategy layer considering Experiment, Survey, Ethnography, Grounded Theory, Narrative Inquiry, Archival Research, Case Study and Action Research strategies. This is followed by a discussion of the time horizon layer focussing upon when to adopt a cross-sectional or longitudinal design. Consideration is also given to the implications of research design for the quality of your research findings and conclusions.

Chapters 6 to 13 are concerned with aspects associated with obtaining or collecting data collection and its subsequent analysis; the core of the research onion. Chapter 6 explores issues related to negotiating access and to research ethics. It offers advice on how to gain physical and cognitive access both to organisations and to individuals using both traditional and Internet-mediated and hybrid approaches. Potential ethical issues are discussed in relation to each stage of the research process and different data-collection methods, stressing the need to research ethically. Issues of data protection are also introduced.

A range of the probability and non-probability sampling techniques available for use in your research is explained in Chapter 7. The chapter considers why sampling may be necessary, how to determine an appropriate sample size and likely response rates for both probability and non-probability samples. Advice on how to relate your choice of sampling techniques to your research topic is given, and techniques for assessing the representativeness of those who respond are discussed. The extent to which it is reasonable to generalise from a sample is also assessed.

Chapters 8, 9, 10 and 11 are concerned with different methods of obtaining or collecting data. The obtaining and evaluating of secondary data is discussed in Chapter 8. This chapter introduces the variety of survey, document (text, audio and visual) and multiple source data that are likely to be available, suggesting ways in which they can be used. Advantages and disadvantages of secondary data are discussed, and a range of procedures for locating these data is suggested. Chapter 8 provides an indication of the myriad of sources available online and also offers advice on how to evaluate the suitability of secondary data for your research.

In contrast, Chapter 9 is concerned with collecting primary data using observation. The chapter examines three types of observation: participant observation, structured observation and Internet-mediated observation, as well as the use of videography, audio recordings and static images in the collection of observational data. Practical advice on using each is offered, and particular attention is given to ensuring that data are obtained ethically.

Chapter 10 is also concerned with collecting primary data, this time using interviews and diaries. The appropriateness of using different structures, modes and mediums of interview in relation to your research strategy is discussed. Advice is offered on how to undertake one-to-one semi structured or in-depth interviews online, as well as face-to-face and by telephone. Advice is also offered for conducting one-to-many and two-to-many group interviews and focus groups online and face-to-face. Visual interviews are discussed along with ways to conduct these online and face-to-face. We also consider the use of both quantitative and qualitative research diaries.

Chapter 11 is the final chapter concerned with collecting primary data. It introduces you to the use of both self-completed and interviewer-completed questionnaires and explores their advantages and disadvantages. Practical advice is offered on the process of designing, piloting and delivering online, SMS (text), postal, delivery and collection, telephone and face-to-face questionnaires to enhance their response rates. Within this we consider the use of images in questionnaires.

Analysis of data is covered in Chapters 12 and 13. Chapter 12 outlines and illustrates the main issues that you need to consider when preparing and analysing data quantitatively. Different types of data variable are defined, and advice is given on how to categorise and code text and visual data (including using content analysis) and create a data matrix. Practical advice is also offered on the analysis of these data using statistical analysis software. The most appropriate diagrams to explore and illustrate data are discussed, and suggestions are made about the most appropriate statistics to use to describe data, to examine associations and differences and strength of relationships, and make predictions and examine trends.

Chapter 13 outlines and discusses the main approaches available to you to prepare and analyse data qualitatively both manually and using computer-aided qualitative data analysis software (**CAQDAS**). The diverse nature of qualitative data and issues associated with transcription are considered. Several analytical aids that will help you analyse data and record your ideas as you progress your research are outlined. The use of deductively based and inductively based analytical approaches is discussed and a variety of techniques are outlined to analyse text, audio and visual qualitative data.

Chapter 14 helps you with the structure, content and style of your final project report and any associated online or face-to-face oral and poster presentations. Possible structures for both academic and practitioner (consultancy) project reports are discussed and alternative ways of presenting quotations from interviews outlined. Above all, and as illustrated by Figure 1.2, it encourages you to see writing as a daily activity and an intrinsic part of the research process that should not be left until everything else is completed.

Appendices and glossary

This book contains three appendices designed to support you at different stages of your research project. In the early stages, as you begin to read, you will need to keep a reference of what you have read using a recognised system, the most frequently used of which are detailed in Appendix 1. When selecting your sample you may need to calculate the minimum sample size required and use random sampling numbers (Appendix 2). Finally, when designing your data collection tools and writing your project report you will need to ensure that the language you use is non-discriminatory. Guidelines for this are given in Appendix 3. A separate glossary of over 750 research-methods-related terms is also included for quick reference.

1.7 Summary

- This book is designed to help you to undertake a research project whether you are an undergraduate or postgraduate student of business and management or a practising manager. It is designed as an introductory textbook and to support you through the entire research process.
- Business and management research involves undertaking systematic research to find out things. It is transdisciplinary and engages with both theory and practice.
- All business and management research projects can be placed on a basic–applied continuum according to their purpose and context.
- Wherever your research project lies on this continuum, you should undertake your research with rigour and try to ensure it benefits broader society. To do this you will need to pay careful attention to the entire research process.

- To enhance your learning during your research we recommend you keep a reflective diary or notebook.
- In this book, research is represented as a multi-stage process; however, this process is rarely straightforward and will involve both reflecting on and revising stages already undertaken as well as forward planning.
- The text of each chapter is supported through a series of boxed examples. These include focus on student research, focus on management research and focus on research in the news. In addition, there are checklists, self-check questions and review and discussion questions, an assignment to progress your research project and a case study with questions. Answers to all self-check questions are at the end of the appropriate chapter.
- Answering the questions in the section 'Progressing your research project' for Chapters 1–13 will enable you to generate all the material that you will need to include in your project report and reflect on what you have learnt. When you have also answered the questions in this section for Chapter 14, you will have written your research report.

Self-check questions

Help with these questions is available at the end of the chapter.

1.1 Outline the features that can make business and management research distinctive from research in other disciplines.

1.2 What are the key differences between basic and applied research (and consultancy)?

1.3 Examine Figure 1.2. What does this suggest about the need to plan and to reflect on and revise your ideas?

Review and discussion questions

1.4 Agree with a friend to each read a different quality newspaper. Make a note of at least 10 articles in your newspaper that mention the word 'research'. Now examine the articles one at a time. As you examine each article, does the reference to research:

- refer to the collection of facts or information with no clear purpose?
- refer to the reassembling and reordering of facts or information without interpretation?
- provide a means of getting the reader to respect what is being written?
- refer to the systematic collection and interpretation of data with a clear purpose? Discuss your answers with your friend.

1.5 Re-read Section 1.3 paying particular attention to the Community for Responsible Research in Business and Management seven principles of responsible research outlined in Table 1.3. To what extent does each relate to how you believe business and management research should be undertaken?

1.6 Revisit Table 1.2 and look at the differences in management researcher and practitioner orientations for foci of interest, methodological imperatives, key outcomes and how each views the other. For each of the continua implied by this table, where would you place yourself? To what extent do you believe that business and management research should meet the practitioner requirements? Give reasons for your answer.



Progressing your research project

Starting your reflective diary or notebook

- Find out if your university requires you to write a reflective practice statement, learning journal or keep a reflective diary or research notebook as part of your research project or research methods module.
- If the answer is 'yes', look carefully at precisely what is required by the assessment criteria and ensure that your reflective diary or research notebook entries will enable you to meet fully the assessment criteria. Be sure to ascertain whether you are expected to be reflective or reflexive.
- When doing this, amend the questions in Box 1.4 to guide your diary or notebook entries as necessary.
- If the answer is 'no', we still believe it will be beneficial to your learning for your research project or research methods module if you keep a reflective diary or research notebook on a regular basis. The questions in Box 1.4 may help guide your reflective entries at the end of each chapter.

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Case 1
A reflective journal? . . . About research? . . . Where do I even begin?



Jasminko Ibrakovic/Shutterstock

Michael is in his last year of undergraduate studies in human services and economics and is conducting original research for his final research project. As part of his project, he is required to keep a reflective research journal (also known as a reflective diary) and will be assessed on it along with his project. His research methods' lecturer has instructed him to make weekly journal entries consisting of two parts: first, a table where he is to record the time of day he wrote, the length of time spent writing, and the focus of his writing; and second, an open response where he is to reflect critically on both his research process and the content of his research.

Michael sits down to write his reflective journal entry and his mind is blank even though his research methods' lecturer provided an example in class on how to write it. Where to begin? What to write about? Is he even going to be able to fill the one-page requirement? Since his writing process and topic seem so different from what was discussed in class, he is feeling a bit lost about where and how to begin his journal. Despite feeling unsure, he starts typing away as his thoughts float from idea to idea in a stream of consciousness. After 30 minutes, he is surprised to find he has written over 300 words. Although he has filled a page, he does not feel confident that he has done it right or that it is helping him gain clarity about the focus of his research or his process. He decides to email it to his project tutor for feedback:

This week's experience

Part 1:

I am to spend a minimum equivalent of 15 minutes of writing time per day each week (Gray, 2020). Here is my writing record:

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Total
Actual time I wrote	0	11 pm–1 am	0	0	0	2–3.30 pm	0	X
Time spent writing*	0	2 hours	0	0	0	1.5 hours	0	3.5 hours min.
Writing focus		Lit review				Writing Centre; edits		

*** Note**: 'Writing time' includes any time working to communicate your research with words, such as outlining, revising, editing, writing paragraphs that will someday appear in the final paper, writing paragraphs that will never appear in the final paper and writing the final presentation (not the generation) of numbers in tables or graphs.

Part 2:

This week Monday–Sunday I worked on improving my literature review on two different days and met with the support staff at the University's Writing Centre. I reckoned what I had written for my literature review was not that good and was hoping to learn how to improve it.

The person I met with in writing support was only able to help me with a few small things like referencing, most of which I already knew. However, I was asked to read my work out loud, and I was surprised by how much that helped. It made punctuation errors clearer.

I really want to improve my writing techniques, but I am not sure about how to do that. Speaking with the writing support person was not as useful as I hoped it would be. When I have asked my friends to read my work and be honest, they say it is 'fine'. But I hate it when I turn in the 'fine' draft and my paper comes back 'bleeding', covered in questions and corrections from my instructor. It's clear that I need to start thinking and writing more critically. After visiting the Writing Centre, I should be able to read my own work and see the flaws in my own arguments. I suppose I want to write better so people can't poke holes in what I am writing and criticise me. By my next draft, I should have cut the number of track change comments by half.

As for the literature review itself, I drew upon notes I made while studying abroad in Ghana. While there, I observed a microcredit lending program for women who wanted to run their own stands at the local street market. I found a few research reports written by international aid organisations, but I have had some trouble finding peer-reviewed sources that address the topic and population I'm studying for my research project. Since it's a newer area of study, I'm hoping these sources will suffice.

Reference

Gray, T. (2020). *Publish & Flourish: Become a Prolific Scholar* (15th Anniversary Edition). Las Cruces, NM: New Mexico State University Teaching Academy

Questions

1. Which parts of Michael's journal entry, if any, were reflective or reflexive? Give reasons for your answer, including the evidence you used to inform your assessment.
2. The journal entry was to consist of two parts: first, a table that summarises data points about his writing practices for the week; and second, a critical reflection of his research process and content. To what extent, if any, did Michael fulfil these requirements? Is there a better way he could have approached and written the research journal entry? In your answer, state how you assessed the entry and include examples that illustrate your point. If you think there was a better approach, describe it.
3. Imagine you are Michael's project tutor and you need to give him feedback. Reread his entry, making comments throughout it. While critiquing and commenting, be sure to note what he has done well and provide specific feedback on what he could do to strengthen it.

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.

They are:

- Isabelle's research dilemma (focussing on applied research and recording learning in a reflective diary).
- Reporting evidence from business and management research (focussing on the differences between academic project reports and consultancy reports).
- Researching buyer–supplier relationships (focussing on conducting research that has organisational benefits).
- Investigating diversity and inclusion at OilCo (focussing on keeping a research diary and differences in approaches to research between academics and practitioners).

Self-check answers

1.1 The features you outline are likely to include:

- the transdisciplinary nature of business and management research;
- the development of ideas that are related to practice and in particular the requirement for the research to have some practical consequence;
- the need for research to complete the virtuous circle of theory and practice;
- addressing problems that grow out of the interaction between the worlds of theory and practice.

1.2 The key differences between basic and applied research relate to both the purpose and the context in which it is undertaken. They are summarised in Figure 1.1.

1.3 Figure 1.2 emphasises the importance of planning during your research project. Forward planning needs to occur at all stages up to submission. In addition, you will need to reflect on and to revise your work throughout the life of the research project. This reflection needs to have a wide focus. You should both consider the stage you have reached and revisit earlier stages and work through them again. Reflection may also lead you to amend your research plan. This should be expected, although large amendments in the later stages of your research project are unlikely.

Get ahead using resources on the companion website at: **www.pearsoned.co.uk/saunders**.



- Improve your IBM SPSS Statistics analysis with practice tutorials.
- Save time researching on the Internet with the Smarter Online Searching Guide.
- Test your progress using self-assessment questions.
- Follow live links to useful websites.

Chapter 2



Generating a research idea and developing your research proposal

Learning outcomes

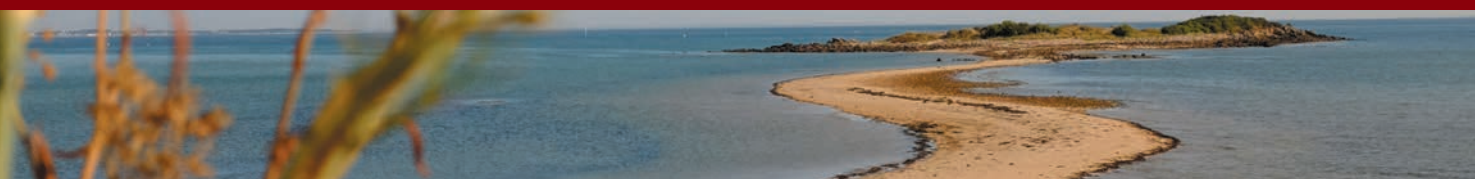
By the end of this chapter you should be able to:

- identify the characteristics of a good research idea;
- generate your own research ideas;
- refine your research ideas;
- express your research idea as a clear overarching research question, a research aim and research objectives or investigative research questions;
- recognise the relationship between the overarching research question, research aim and research objectives or investigative research questions;
- recognise the role of theory in developing the overarching research question, a research aim and research objectives or investigative research questions;
- develop a research proposal that outlines your proposed research project.

2.1 Introduction

Many students think that researching an idea of their choice is the most exciting part of their course. It is something that you get to decide for yourself rather than having to complete a task decided by your tutors. We will stress in this chapter that it is important to choose something that will sustain your interest throughout the months that you will need to complete it. You may even decide to do some research on something that forms part of your leisure activities!

Before you start your research, you need to have at least some idea of what you want to do. This is probably the most difficult, and yet the most important, part of your research project.



Research ideas, contemplative moods and mindfulness



Malvern Link Common © 2021 Mark NK Saunders

Legend tells us that the law of gravity was prompted into Isaac Newton's mind when he was sitting in contemplative mood under an apple tree and was hit on the head by a falling apple. In reality it appears that, although sitting in an orchard under an apple tree and witnessing a falling apple, Newton was never hit on the head (Nix 2018). Rather this observation, while relaxing and drinking tea under the shade of some apple trees, caused him to contemplate why apples (and other objects) always fell straight downwards. He had an idea!

For most of us, coming up with a research idea is difficult. Fortunately, numerous articles on creativity and the generation of ideas emphasise that we are not alone whether we are generating ideas for research or some other purpose. An article in the *Harvard Business Review* (Schootstra et al. 2017) recognises this, noting that it is hard to keep on having great ideas and posing the question 'What do you do when you run out of good ideas? How do you "get your mojo back"?' Observing that an increasingly popular solution to this is mindfulness meditation, the authors both reviewed the literature and undertook their own research.

Among other findings, the researchers revealed that, for most participants, practising mindfulness helped them clear their minds, focus better, and come up with a wider range of ideas, including original solutions to problems. Similar to Isaac Newton's relaxed contemplation in the peace of the orchard, they found that mindfulness meditation can help enhance creativity and innovation by improving attention and making it easier to recognise both the novelty and usefulness of ideas that come into our minds.

Up until now, most of your studies will probably have been concerned with answering questions that other people have set. The start of this chapter is intended to help you generate your own research idea and decide the direction of your research journey. If you are not clear about what you are going to research, it will be difficult to plan how you are going to research it. This reminds us of a favourite quote in *Alice's Adventures in Wonderland.* This

is part of Alice's conversation with the Cheshire Cat. In this Alice asks the Cat (Carroll 1989: 63–4):

> 'Would you tell me, please, which way I ought to walk from here?'
> 'That depends a good deal on where you want to get to', said the Cat.
> 'I don't much care where', said Alice.
> 'Then it doesn't matter which way you walk', said the Cat.

Generating a research idea is unlikely to involve you in a single moment of inspiration. Even if, like Isaac Newton, inspiration arrives while you are relaxing and contemplating, developing this is still likely to be iterative, involving you in a process of formulating, clarifying and re-formulating your research idea(s) until it becomes an acceptable and focused overarching research question. Part of this process will involve refining your initial overarching research question so that it is more focused with a related research aim and set of research objectives. Once you have focused your overarching research question, and can operationalise it through your aim and objectives, you will be better able to choose the most appropriate research strategy and data collection and analysis techniques, and develop your research proposal. This process will be time-consuming, and will probably take you up blind alleys (Saunders and Lewis 1997). However, without spending time on this, you are far less likely to achieve a successful project. This is likely to be the case even when you have been given an embryonic research idea, perhaps by an organisation or a tutor. Whether you start with such a research idea or formulate one for yourself, it is also important to work on something that will sustain your interest throughout the months that you will need to complete it.

We commence this chapter by looking at the characteristics of good research ideas (Section 2.2). We then consider techniques for generating (Section 2.3) and refining (Section 2.4) research ideas. Taking your research idea(s) and chosen topic and developing a research proposal will involve a number of tasks. You will need to develop an overarching research question(s), ensuring it is focused (Section 2.5), and express this as a research aim and a set of research objectives (Section 2.6). You will also need to consider how your research topic fits into the existing theory in the literature. Using theory may help you to clarify your research topic. It will also inform your research question, aim and objectives, and your research proposal more generally. We discuss these aspects in Section 2.7. Before you commence the research to meet your aim and objectives, you will be expected to produce a structured plan in the form of a research proposal. We discuss the rationale and a structure for the research proposal in Sections 2.8 and 2.9, respectively. Once approved, your research proposal will act as the guide for the rest of your research project.

2.2 Characteristics of good research ideas

The attributes of a business and management research idea do not vary a great deal between universities, although there will be differences in the emphasis placed on these attributes. Some of these characteristics reflect the need to fulfil the specification set for the research project and meet the assessment criteria. We outline these under the heading, 'Appropriateness'. Other characteristics reflect the feasibility of the idea being operationalised and the associated developmental opportunities. We consider some of these briefly under the headings of 'Capability' and 'Fulfilment'. There may be other characteristics of a good research idea that become evident to you in relation to your own research project. Identifying these should be helpful in terms of generating a research idea and developing your research proposal. You may also find it useful to discuss them with your project tutor.

Appropriateness

The scope of the research idea you generate and the nature of the research proposal that you develop will need to meet the requirements of your examining body (such as your university, professional body or other accredited organisation). This means that you must generate your research idea and develop your research proposal with care. For example, some universities require students to collect their own data as part of their research project, whereas others allow them to base their project on data that have already been collected. Alternatively, some ask you to undertake an organisation-based piece of applied research, while others simply say that it must be within the subject matter of your course or programme. You therefore need to check the assessment criteria for your research project and ensure that your idea and the plan you propose will enable you to meet these criteria. If you are unsure, you should discuss any uncertainties with your project tutor.

It will be important to use existing theory from the academic literature to inform your research idea and in the development of your research proposal. As part of your assessment criteria you are almost certain to be asked to consider the theoretical context of your research in your research proposal. As we discussed earlier, using existing theory should help you to clarify your research idea and to inform your overarching research question, aim and objectives. Using theory should also help you to develop clear definitions of the concepts that you use in your research (Podsakoff et al. 2016). We consider the role of theory further in Section 2.7 and the critical review of the literature that discusses it in Section 3.3.

Most project tutors will argue that one of the characteristics of a good research proposal is a clearly defined research question(s), aim and set of objectives or investigative questions (Section 2.4). These will, along with a good knowledge of the literature (Chapter 3), enable you to assess the extent to which your research is likely to provide fresh insights into the topic. Many students believe this is going to be difficult. Fortunately, there are numerous ways in which such insight can be defined as new (Sections 2.4 and 2.5). We offer a word of warning, an idea offering new insights is far more likely than a completely new research idea. If you come up with a research idea that no-one has ever thought of or researched and is therefore new, there are at least three possibilities:

- Your idea is new and exciting and no one has ever thought of it, let alone researched it.
- Your idea has been researched before and you have been searching for literature about it in the wrong places.
- Your idea has no worth and that is why it has not been researched up to now.

We therefore recommend you consider any such potential ideas extremely carefully, before claiming the idea is both completely new and worthy of researching.

It is also important that your research will have **symmetry of potential outcomes**: that is, your findings will be of similar value whatever you find out (Gill and Johnson 2010). Without this symmetry you may spend a considerable amount of time researching, only to find an answer of little importance. Whatever the outcome, you need to ensure you have the scope to write an interesting project report.

Capability

Your research must also be something you are capable of undertaking. Capability can be considered in a variety of ways. At the personal level you need to feel comfortable that you have, or can develop, the skills that will be required to undertake the research. We hope that you will develop your research skills as part of undertaking your project, such as those related to data analysis. However, some skills, for example, learning a new foreign language, may be impossible to acquire in the time you have available.

Your ability to find the financial and time resources to undertake the research will also affect your capability. This relates, in part, to the concept of feasibility (which we return to in Section 2.8 and also discuss in Section 6.2). Some research projects are unlikely to be possible to complete in the time allowed by your course of study. This may be because they require you to measure the impact of an intervention over a long time period or because of their complexity. Similarly, ideas that are likely to require you to travel widely or use expensive equipment or specialist software not available at your university should also be disregarded unless financial resources permit.

Capability also means you must be reasonably certain of gaining access to any data you might need to collect. Many people start with ideas where access to data will prove difficult. Certain, more sensitive topics, such as financial performance or decision-making by senior managers, are potentially fascinating. However, these may present considerable access problems. You should, therefore, discuss this with your project tutor after reading Sections 6.2–6.4.

Fulfilment

Your research idea needs to be one that excites your imagination and in which you have or will develop a genuine interest. Most research projects are undertaken over at least a four-month period. An idea in which you are only vaguely interested at the start is likely to become one in which you have no interest and with which you will fail to produce your best work. It may also be important to consider your future aspirations. If you wish to obtain employment or pursue a career in a particular subject area, it is sensible to use this opportunity to start to develop some expertise in it.

It is almost inevitable that the extent to which these characteristics apply to you will depend on your research idea and the reasons why you are undertaking the research. However, most are likely to apply. For this reason, it is important that you check and continue to check any potential research idea against the summary checklist contained in Box 2.1.



Box 2.1 Checklist

Characteristics of a good research idea

Appropriateness

- ✔ Does the idea fit the specifications and meet the standards set by the examining institution?
- ✔ Does the idea contain issues that have a clear link to theory?
- ✔ Are you able to state an overarching research question(s), research aim and research objectives or investigative questions clearly?
- ✔ Will the proposed research be likely to provide fresh insights into this topic?
- ✔ Are the findings likely to be symmetrical: that is, of similar value whatever the outcome?

Capability

- ✔ Do you have, or can you develop within the project time frame, the necessary research skills to undertake the research?
- ✔ Is the research achievable within the available time?
- ✔ Is the research achievable within the financial resources that are likely to be available?
- ✔ Are you reasonably certain of being able to gain access to data you are likely to require for this research?

Fulfilment

- ✔ Does the research idea really interest and motivate you?
- ✔ Will the research help towards the achievement of your future aspirations or career goals?

2.3 Generating research ideas

Many business and management students are expected to generate and refine their own research ideas, whereas some others, particularly those on professional and post-experience courses, are provided with an embryonic research idea by their employing or sponsoring organisation. In the initial stages of their research they are expected to refine this to a clear and feasible idea that meets the requirements of the examining organisation. If you have already been given a research idea, we believe you will still find it useful to read this section as many of the techniques can also be used for refining research ideas.

As outlined in the opening vignette, ideas can come to us at anytime and anywhere; recognising them is made easier if our minds are clear. In addition, if you have not been given a research idea, there are a variety of techniques that can be used to generate one you would like to research. These can be divided into two groups: those that predominantly involve **rational thinking techniques**, being based on a systematic approach and those that involve more **creative thinking techniques** favouring individual preferences or spontaneous ideas (Table 2.1).

The precise techniques you choose to use, and the order in which you use them, are entirely up to you. However, by using one or more creative techniques, you are more likely to ensure that your heart as well as your head is in your research project. In our experience, it is usually better to use both rational and creative techniques. In order to do this, you need to have some understanding of the techniques and the ways in which they work. We therefore list the techniques in Table 2.1 and then discuss possible ways they might be used to generate research ideas. These techniques will generate one of two outcomes:

- one or more possible project ideas that you might undertake;
- few ideas that relate to your interests. In this case you may want to revise the area in which you are interested, either by choosing another area or by refining and perhaps narrowing or widening your original area of interest.

In either instance, we suggest that you make some notes and arrange to talk to your project tutor.

Rational thinking techniques

Examining your own strengths and interests

It is important that you select an idea in which you are likely to do well and, if possible, already have some academic knowledge. One way of doing this is to look at completed assignments for which you have received good grades (Box 2.4). Many, if not most, of these assignments are likely to be in subject areas in which you have an interest. These

Table 2.1 More frequently used techniques for generating (and refining) research ideas

Rational thinking	Creative thinking
Examining your own strengths and interests	Keeping a notebook of your ideas
Examining academic staff research interests	Exploring personal preferences using past projects
Looking at past project titles	Exploring relevance to business of ideas in the literature
Discussion	Relevance trees
Searching existing literature	Brainstorming
Scanning the media	

assignments will provide you with subject areas in which to search and find a research idea. In addition, you may, as part of your reading, be able to focus more precisely on the sort of ideas about which you wish to conduct your research.

As noted in Section 2.2, there is the need to think about your future. If you plan to work in financial management, it would be sensible to choose a research project in the financial management field. One part of your course that will inevitably be discussed at any job interview is your research project. A project in the same field will provide you with the opportunity to display clearly your depth of knowledge and your enthusiasm.

Examining academic staff research interests

Your university's website will have profile pages of academic staff, which may be helpful in exploring and generating research ideas that could be of interest for your own project. These pages usually outline the subject area or areas taught by each member of staff (e.g. accounting, international management, marketing, responsible business), and are also likely to list their particular research interests (e.g. regulation of accounting standards, transnational management, pricing and price promotions, organisational learning). In many cases, academic staff provide short commentaries on their research interests offering more insights. Lists of publications and conference papers with hyperlinks to copies may also be included. Working through this information may allow you to generate ideas for your own research and guide you to some initial reading to test this interest.

Looking at past project titles

Many of our students have found looking at past projects a useful way of generating research ideas. For undergraduate and taught master's degrees these are often called **dissertations**. For research degrees they are termed **theses**. A common way of doing this is to scan a list of past project titles for anything that captures your imagination. Titles that look interesting or that grab your attention should be noted, as should any thoughts you have about the title in relation to your own research idea. In this process the fact that the title is poorly worded or the project report received a low mark is immaterial. What matters is the fact that you have found an idea that interests you. Based on this you can think of new ideas in the same general area that will enable you to provide fresh insights.

Scanning actual research projects may also produce research ideas. However, you need to beware. Just because a project is in your library is no guarantee of the quality of the arguments and observations it contains. In some universities all projects are placed in the library whether they are bare passes or distinctions.

Discussion

Colleagues, friends and university tutors are all potentially good sources of possible research ideas. Often project tutors will have ideas for possible student projects, which they will be pleased to discuss with you.

Ideas can also be obtained by talking to people who work in, or have direct experience of, the topic area in which you are interested to develop a research idea. People who have experience of a topic area may include managers and other practitioners such as accountants, business analysts, marketing executives, human resource administrators, purchasing or sales staff as well as others. Entrepreneurs and small business owners may be useful to talk to, and members of professional groups or workplace representatives may also provide you with insights that help to generate research ideas. Your contact with such people at this early stage may be fortuitous, relying on being able to talk to someone you already know such as those in an organisation in which you have undertaken a work placement.

It is important that as well as discussing possible ideas you also make a note of them. What seemed like a good idea in the coffee shop may not be remembered quite so clearly after the following lecture!

Searching existing literature

As part of your discussions, relevant literature may also be suggested. There are various types of literature that are of particular use for generating research ideas. These include:

- articles in peer-reviewed academic journals;
- articles in trade and professional journals;
- reports;
- books and e-books.

Peer-reviewed academic journal articles nearly always contain a section that reviews literature relevant to the article's topic area. Given the nature of published research, such articles are generally highly specialised, focusing on a particular aspect of a management subject. You will need to be prepared to undertake an extensive search lasting some hours (or even days) to find articles that might be helpful in generating research ideas related to your broader topic of interest. The (advanced) search facilities available to you through your university library's or professional association's databases and search interfaces will be very helpful here (Sections 3.4 to 3.6). You may also consider signing up to and using one or more of the social networking platforms used by academics to share their research papers such as Academia.edu and ResearchGate. Although these copies are unlikely to be the final version for copyright reasons, they can provide access to those articles, reports and conference papers that are not available through those databases for which your university's library has subscriptions.

Browsing journals and using available search facilities should help you to identify possible research ideas and potential topics.

Of particular use are academic **review articles**. Some journals such as the *International Journal of Management Reviews* only publish review articles – so look out for these! These articles contain a considered review of the state of knowledge in a particular topic area and are therefore likely to contain a wealth of ideas about that area (Box 2.2). These ideas will act as pointers towards aspects where further research needs to be undertaken.

For many subject areas your project tutor will be able to suggest recent review articles, or articles that contain recommendations for further research. Journal articles reporting research often also indicate where further research is needed. Both may be phrased in the form of questions and, even if not, may suggest possible questions for you. Reports may also be of use. The most recently published are usually up to date and, again, often contain recommendations that may form the basis of your research idea. Books by contrast may be less up to date than other written sources. They often, however, contain a good overview of research that has been undertaken, which may suggest ideas to you.

Alvesson and Sandberg (2011) report that articles published in academic management journals are predominantly based on research that finds new ways to investigate existing theoretical perspectives. They call this approach 'gap spotting', suggesting it results in incremental changes in theory. They identify a more critical and reflexive but rarer approach to research that challenges the assumptions underpinning existing theoretical perspectives and that has the potential to lead to more interesting and high-impact theories. Given the difficulties associated with designing an assumption-challenging study, it is much more likely that you will adopt the 'gap spotting' approach. We discuss this further when we consider the importance of theory in writing research questions and objectives (Section 2.7).



Box 2.2 Focus on management research

Achieving the United Nations Sustainable Development Goals

An article first published in 'early view' online in *Decision Sciences* in February 2021 reviews management literature about the emerging nutraceutical (food that provides medical or health benefits) industry within the context of global goals to end hunger, in particular the United Nations Sustainable Development Goals (Chaurasia et al. 2021). The authors of this review undertook a content analysis (see also Section 12.2) of 138 studies published in peer-reviewed journals to establish the growth of the literature over time, the methodologies adopted, disciplines considered, theoretical lenses used and sustainability issues considered.

Following their analysis, the authors draw their ideas together in a 'conclusions and future directions' framework. In this they summarise trends in the literature and identify potential research areas and gaps to address for the future. These include issues such as sustainable distribution and supply chain network design, which they highlight are not explored in the literature. They also emphasise the need to study public policy-driven issues across geographies in relation to supply chain performance and sustainability practices. Any researcher setting out to explore and generate research ideas relating to supply chains, sustainability and management should therefore consider including this review article in their first batch of reading, after conducting a preliminary search of the existing literature on this topic.

Searching for publications is only possible when you have at least some idea of the area in which you wish to undertake your research. One way of obtaining this is to re-examine your lecture notes and course textbooks and to note those subjects that appear most interesting (discussed earlier in this section) and the names of relevant authors. This will give you a basis on which to undertake a **preliminary search** (using techniques outlined in Sections 3.5 and 3.6). When you have located a series of articles, reports and other relevant items, it is often helpful to look for statements on the absence of research and possibly unfounded assertions in some types of publication, as these are likely to contain or suggest ideas that may help you to develop a research idea.

Scanning the media

Keeping up to date with items in the news can be a very rich source of ideas. The stories that occur every day in the 'broadsheet' or 'compact' newspapers, in both online and traditional print versions, may provide ideas that relate directly to the item (e.g. the extent to which items sold by supermarkets contravene the principles of 'green consumerism' by involving excessive 'food miles' in order to import them). Please note, however, that some of these online media are only available by subscription. The stories in these media may also suggest other ideas that flow from the central story (e.g. the degree to which a company uses its claimed environmental credentials as part of its marketing campaign).

Creative thinking techniques

Keeping a notebook of your ideas

One of the more creative techniques that we all use is to keep a **notebook of ideas**. This involves simply noting down any interesting research ideas as you think of them and, of equal importance, what sparked off your thought. You can then pursue the idea using more rational thinking techniques later.

Exploring personal preferences using past projects

One way to generate and evaluate possible project ideas is to explore your personal preferences by reading through a number of past project reports from your university. To get started you need to search through these and select a number that you like and a number that you do not like.

For each project that you like, note down your first thoughts in response to each of the following questions:

1. What do you like in general about the project?
2. Why do you like the project?
3. Which ideas in the project appeal to you?

For each project that you do not like, note down your first thoughts in response to each of the following questions:

1. What do you dislike in general about the project?
2. Why do you dislike the project?
3. Which ideas in the project do not appeal to you?

When you have completed this task, you may find it helpful to spend some time reflecting on each set of notes for the projects you like and those you do not. By reflecting on and thinking about each list you will begin to understand those project characteristics that are important to you and with which you feel comfortable. Of equal importance, you will have identified those with which you are uncomfortable and should avoid.

This process has two benefits. First, it may help you to generate possible research ideas. Second, you may use the project characteristics that emerge from exploring your personal preferences as parameters against which to evaluate possible research ideas.

Exploring relevance to business of ideas in the literature

There is an enormous amount of research published in business and management journals. The nature of these journals varies considerably, ranging from those with a more applied focus to those that are more esoteric. As a result, there will be many ways in which you may explore the relevance to business of ideas published in the literature. The real-world benefits to business practice of academic business research remains a key issue (Box 2.3). Yet, even more esoteric journal articles contain a wealth of ideas that may be explored for their relevance to business. Such articles can contain ideas that you may be able to translate, make operational and test in practice in a given setting, such as a particular organisation, albeit using a simpler methodology than that in the published study. The 'Discussion' section in many business and management journals routinely includes an 'Implications for practice' sub-section, which may guide you towards developing a research idea to explore the relevance of the theory in the article to a particular business setting, such as your employing organisation.

Articles based on empirical studies may also provide you with research ideas. A published empirical study may have been undertaken as a case study. It may have been based in a particular sector or industry, and it may have been based in a particular organisation or type of organisation. Reading it may lead you to think that you could undertake a similar study, albeit possibly scaled down, in a different type of organisation, in a different industry or sector.

There may be scope for you to undertake a case study that seeks to apply the findings from a large sample statistical study to a particular organisational context or type of organisation. This will allow you to test the applicability of these previous findings and to convert them into a relevant and accessible form for a particular context.

Box 2.3 Focus on research in the news

Does business school research deliver real-world benefits?

By Andrew Jack

When Richard Locke at MIT's Sloan School of Management was researching Nike's approach to corporate responsibility in the early 2000s, he came across data on labour standards in its factories that sparked reforms far beyond the sportswear manufacturer.

His experience provides a pointer to how business schools can work with business to bring about positive social change, bridging a divide between ideas and practice that critics argue remains far too wide.

After lengthy negotiations to gain access to corporate records and freedom to publish his findings, Prof Locke, now provost at Brown University, was able to demonstrate the limited effectiveness of labour audits alone in improving working conditions. Far greater progress came when they were combined with measures to tackle underlying problems, such as training and enabling suppliers to schedule their work better.

The conclusions, disseminated over a number of years in seminars and in consultations with managers, unions and policymakers as well as in academic journals and more accessible publications, helped spark new policies at multiple companies. 'It's extremely important for scholars in business schools to try to address some of society's great challenges through their research,' he says. 'By bringing a rigorous methodology, you can both show your academic skills and generate new research to not only change the way we think but do so with implications in the real world.'

For many, such examples remain too rare. In a 2018 article in *BizEd,* a journal of the Association to Advance Collegiate Schools of Business, William Glick from Rice University, Anne Tsui from the University of Notre Dame and Gerald Davis from the University of Michigan delivered a damning verdict. 'With a few notable exceptions,' they wrote, 'scholarly research rarely reaches the worlds of business or policy, and academic journals are neither read nor cited widely beyond the academic community.'

FT *Source of extract:* Jack, A. (2021) 'Does business school research deliver real-world benefits?', *Financial Times,* 27 January. Copyright 2021 The Financial Times Limited

Creatively approaching the literature to convert existing work into a relevant and specifically applied study, in the ways we have described, may provide you with a rich and valuable research idea.

Relevance trees

Relevance trees may also prove useful in generating research ideas. In this instance, their use is similar to that of mind mapping (Buzan 2018) in which you start with a broad concept from which you generate further (usually more specific) topics. Each of these topics forms a separate branch from which you can generate further, more detailed sub-branches. As you proceed down the sub-branches, more ideas are generated and recorded. These can then be examined and a number selected and combined to provide a research idea. This technique is discussed in more detail in Section 3.5 (and illustrated in Box 3.6).

Brainstorming

The technique of **brainstorming** (Box 2.4), taught as a problem-solving technique on many business and management courses, can also be used to generate and refine research ideas. It is best undertaken with a group of people, although you can brainstorm on your own. Brainstorming involves a number of stages:

1. *Defining the problem.* This will focus on the sorts of ideas you are interested in – as precisely as possible. In the early stages of formulating a topic this may be as vague as, 'I am interested in marketing but don't have any ideas for my research.'
2. *Asking for suggestions.* These will relate to the problem.
3. *Recording suggestions.* As you record these you will need to observe the following rules:
   - No suggestion should be criticised or evaluated in any way before all ideas have been considered.
   - All suggestions, however wild, should be recorded and considered.
   - As many suggestions as possible should be recorded.
4. *Reviewing suggestions*. You will seek to explore what is meant by each as you review these.
5. *Analysing suggestions*. Work through the list of ideas and decide which appeal to you most as research ideas and why.



Box 2.4 Focus on student research

Brainstorming

George's main interest was football. In his university city, he worked part-time in the retail store of the local football club and thought he would like to carry out his research project in this setting.

When he finished university, he wanted to work in marketing, preferably for a sports goods manufacturer or retailer. He had examined his own strengths and discovered that his highest marks were in marketing. He wanted to do his research project on some aspect of marketing, preferably linked to the football club, but had no real research idea. He asked three friends, all taking business management degrees, to help him brainstorm the problem.

George began by explaining the problem in some detail. At first the suggestions emerged slowly. He noted them down on some flipchart sheets. Soon a number of sheets of paper were covered with suggestions and pinned up around the room. George counted these and discovered there were over 100.

Reviewing individual suggestions produced nothing that any of the group felt to be of sufficient merit for a research project. However, George recalled an article they had been asked to read based on a case study of an English Premier League football club (Ogbonna and Harris 2014). He had found this interesting because of its subject. He recalled that it was about organisational culture being perpetuated within organisations that have a long history of success, and stakeholder groups such as football fans who have a strong sense of identity.

George's recollections of this article encouraged the group to discuss their suggestions further. Combining a number of suggestions from the flipchart sheets with their discussion about organisational cultural perpetuation, George noted a possible research idea as: 'The impact of factors that perpetuate organisational culture on the development of marketing strategies – help or hindrance?'

George thought this idea could be based on his local football club.

George arranged to see his project tutor to discuss how to refine the idea they had just generated.

2.4 Refining research ideas

The Delphi technique

An approach that our students have found useful to refine their research ideas is the **Delphi technique** (Box 2.5). The standard Delphi method involves a researcher using a purposive sample of participants who are knowledgeable about the topic to be discussed; asking these participants to write down their answers anonymously to some initial questions to gather their opinions and perceptions; analysing these answers thematically; using this to generate a second round of questions to gain participants' feedback to the initial responses; repeating this process until a consensus is reached about the topic in order to inform decision-making, policy or practice. The initial round of questions is likely to be 'open' or 'semi-open', while subsequent rounds of questions are likely to be more focused and structured (Brady 2015). This process works well, not least because people enjoy trying to help one another. In addition, it is very useful in forming cohesive groups.

Preliminary inquiry

Having generated a research idea, you will need to refine it and express it as a clear overarching research question(s), a research aim and research objectives. This will involve searching for and evaluating literature and other related sources. Even if you searched the literature to generate your research idea, it is likely to be necessary to conduct another search of it in order to refine this idea into a workable research question. Once you have your research idea you can re-visit the literature with a much clearer focus to understand how this helps you to refine your research idea, and to develop the research question(s), aim and set of objectives (Sections 2.5 and 2.6).



Box 2.5 Focus on student research

Using a Delphi Group

Tim explained to the group that his research idea was concerned with understanding the decision-making processes associated with mortgage applications and loan advances. His briefing to the three other group members, and the questions that they asked him, considered aspects such as:

- the particular situation of potential first-time house buyers;
- the way in which the nature of contact between potential borrowers and financial institutions might influence decision-making.

The group then moved on to generate a number of more specific research ideas, among which were the following:

- the effect of being a first-time house purchaser on mortgage application decision-making;
- the effect of online only applications on mortgage decisions;
- the attributes that potential applicants look for in financial institutions operating in the mortgage market.

These ideas were considered and commented on by all the group members. At the end of the second cycle Tim had, with the other students' agreement, refined his research idea to:

- an evaluation of the factors that influence potential first-time buyers' choice of lending institution.

Tim now needed to pursue this idea by undertaking a preliminary search of the literature.

This search activity to refine, focus and operationalise your initial research idea into an overarching research question(s), aim and objectives or investigative questions involves a **preliminary inquiry** or initial inquiry. This may lead to the first iteration of your critical literature review or help to inform it (Figure 3.1). Unfortunately, because journal articles are word limited and the 'methods' section of an article only describes the research methodology and techniques used in the actual study, research is often presented as an unproblematic (and not a 'messy') process.

For some researchers, the preliminary inquiry may include informal discussions with people who have personal experience of and knowledge about your research ideas. It may also involve **shadowing** (following and observing) employees who are likely to be important in your research and who may therefore be able to provide some initial insights. If you are planning on undertaking your research within an organisation, it is also important to gain a good understanding of your host organisation (McDonald 2005).

At this stage, you should test your ideas using the checklist in Box 2.1 and, where necessary, amend them. It may be that after a preliminary inquiry, or discussing your ideas with colleagues, you decide that the research idea is no longer feasible in the form in which you first envisaged it. If this is the case, do not be too downhearted. It is far better to revise your research ideas at this stage than to have to do it later, when you have undertaken far more work.

Integrating ideas

Another, or complementary, way to refine, focus and operationalise your research idea into a research question(s), aim and objectives is to integrate ideas generated using a number of different techniques. Integrating ideas will help your research to have a clear purpose and direction. Jankowicz (2005: 34–6) offers an integrative process that our students have found most useful. This he terms 'working up and narrowing down'. It involves classifying each research idea first into its area, then its field and finally the precise aspect in which you are interested. These represent an increasingly detailed description of the research idea. For example, your initial area, based on examining your coursework, might be accountancy. After searching through relevant journal articles and holding a discussion with colleagues, this might become more focused on the field of financial accounting methods. After a further literature search and reading, the use of a Delphi technique and discussion with your project tutor you decide to focus on the aspect of activity-based costing.

Refining ideas given by your employing organisation

As a part-time student, your manager may provide you with an embryonic research idea. This may be something that affects your work and in which you have an interest. You may have discussed this with your manager and relish the opportunity to research it further.

It may, however, be something in which you are not particularly interested. In this case you will have to weigh the advantage of doing something useful to the organisation against the disadvantage of a potential lack of personal motivation. You therefore need to achieve a balance. Often the research project your manager wishes you to undertake is larger than is appropriate for your course. In such cases, it may be possible to complete both by isolating an element of the larger organisational project that you find interesting and treating this as the project for your course.

One of our students was asked to do a preliminary investigation of the strengths and weaknesses of her organisation's pay system and then to recommend consultants to design

and implement a new system. She was not particularly interested in this project. However, she was considering becoming a freelance human resources consultant. Therefore, for her research project she decided to study the decision-making process in relation to the appointment of human resources consultants. Her organisation's decision on which consultant to appoint, and why this decision was taken, proved to be a useful case study against which to compare management decision-making theory. In this event you would write a larger report for your organisation and a part of it for your project report. Section 14.4 offers some guidance on writing two separate reports for different audiences.

Other problems may involve your political relationships in the organisation. For example, there will be those keen to commission a project that justifies their particular policy position and see you as a useful pawn in advancing their political interests. It is important to have a clear stance with regard to what you want to do, and your personal objectives, and to stick to this. A further potential problem may be one of your own making: to promise to deliver research outcomes to your employer and not do so.

Conducting research in your own organisation may also be problematic because of your role as an internal researcher (Tietze 2012). We return to discuss a range of issues related to this role in Section 5.12.

2.5 Developing your overarching research question

You will know when you have a clear research idea as you will be able to say, 'I'd like to do some research on . . . '. Obviously, there is still a big gap between this and being able to start serious work on your research project. You will, however, be in a position to develop your overarching research question(s), before expressing it as a research aim and set of research objectives.

It will be important for you to express your research topic as one, or occasionally two or three, clearly defined **research questions** that your research will address before commencing the research process. Within this chapter we refer to this as your overarching research question to emphasise that this is the overview key question that your research will address. As a student, you are likely to be required to include a research question in your written research proposal (Sections 2.8 and 2.9). The importance of creating a clearly defined question or questions cannot be overemphasised. An **overarching research question** will allow you to say what the issue or problem is that you wish to study and what your research project will seek to find out, explain and answer. One of the key criteria of your research success will be whether you have developed a set of clear conclusions from the data you have collected. The extent to which you can do that will be determined largely by the clarity with which you have posed your question (Box 2.6).

The overarching research question will be at the centre of your research project. It will influence the literature you review, your research design, the access you need to negotiate, your approach to sampling, your choice of data collection and analysis methods, and help to shape the way in which you write your project report. It will also be used to generate a set of more detailed research objectives or investigative (research) questions to guide your research, discussed later.

However, it is also important to recognise that some research approaches and research strategies start off in a more exploratory and emergent direction (Chapter 5). For a researcher undertaking this type of research, their final research question may only emerge during the process of data collection and analysis as they discover the exact focus of the research project and refine its direction. Some of the mainly qualitative strategies



Box 2.6 Focus on student research

Defining the overarching research question

Imran was studying for a BSc in Business Management and undertaking his placement year in an advanced consumer electronics company. When he first joined the company, he was surprised to note that the company's business strategy, which was announced in the company newsletter, seemed to be inconsistent with what Imran knew of the product market.

Imran had become particularly interested in corporate strategy in his degree. He was familiar with some of the academic literature that emphasised the importance of 'fit' between the corporate strategy and the external environment in which the organisation operated. He wanted to do some research on corporate strategy in his organisation for his research project to better understand the concept of 'fit'.

After talking this over with his project tutor, Imran decided on the following overarching research question: 'To what extent does [organisation's name]'s corporate strategy "fit" their external operating environment and why?'

(discussed in Chapter 5), including Ethnography Studies and Grounded Theory, are exploratory and emergent and will often lead you, where you use one of these, to refine your initial overarching research question as you progress. Most tutors will say here that it is part of the process to refine the question as your project progresses to reflect the emerging focus of your research. It is always advisable to discuss such developments with your project tutor! The key point is that if you use such a research approach it is still important to define an initial overarching research question at the outset of your project to focus your research, even if you then refine your question accordingly.

Developing the overarching research question or questions, rather like generating and refining research ideas (Sections 2.3 and 2.4), is not a straightforward matter. It is important that a question is sufficiently involved to generate the sort of project that is consistent with the standards expected of you (Box 2.1). A question that prompts a descriptive answer – for example, 'What is the proportion of graduates entering the UK civil service who attended elite universities?' – is far easier to answer than: 'Why are graduates from elite universities more likely to enter the UK civil service than graduates from other universities?' However, answering the first question is unlikely to satisfy your examining body's requirements as it only needs description.

Questions may be divided into ones that are exploratory, descriptive, explanatory or evaluative (Section 5.7). Overarching research questions you ask are likely to begin with or include either 'what', 'when', 'where', 'who', 'why', 'how' or 'to what extent'. Some of these can result in an answer that is partly or entirely descriptive, such as: 'What was the cost of the marketing campaign for the new range of products?' Exploratory questions are likely to begin with 'How' or 'What'. For example, 'How has the corporate rebranding strategy affected consumer attitudes?' Questions that seek explanations will either commence with 'Why' or contain this word within the question. For example, a question may ask customers what they think about a new product and why they like or dislike it. Questions that are evaluative are also likely to begin with 'How' or 'What' but unlike the 'How much. . . ?' or 'How has. . . ?' questions, an evaluative question might ask, 'How effective was the marketing campaign for the new range of products?' Another way of wording this type of question might be, 'To what extent was the marketing campaign effective and why?'

The Goldilocks test

While some questions may be too simple, it is perhaps more likely that you might fall into the trap of asking research questions that are too difficult. The question cited earlier, 'Why are graduates from elite universities more likely to enter the UK civil service than graduates from other universities?', is a case in point. It would probably be very difficult to gain sufficient access to the civil service to get a good grasp of the subtle 'unofficial' processes that go on at staff selection that may favour one type of candidate over another. Over-reaching yourself in the definition of research questions is a danger.

Clough and Nutbrown (2012) use what they call the '**Goldilocks test**' to decide if research questions are either 'too big', 'too small', 'too hot' or 'just right'. Those that are too big probably need significant time and demand too many resources. Questions that are too small are likely to be of insufficient substance, while those that are too 'hot' may be so because of sensitivities that might be aroused as a result of doing the research. This may be because of the timing of the research or the many other reasons that could upset key people who have a role to play, either directly or indirectly, in the research context. Overarching research questions that have been written to take into account the researcher's capabilities and the availability of resources, including time and the research setting, are more likely to be about right.

The pitfall you must avoid at all costs is asking an overarching research question that will not generate new insights. This raises the question of the extent to which you have consulted the relevant literature. It is perfectly legitimate to replicate research because you have a genuine concern about its applicability to your research setting (for example, your organisation or your country's context). However, it certainly is not legitimate to display your ignorance of the literature.

The Russian doll principle and the AbC rule

To clarify a research question, Clough and Nutbrown (2012) talk of the Russian doll principle. This means refining your initial overarching research question until it reflects the essence of your research idea without including any unnecessary words or intentions. By stripping away any unnecessary layers (the larger outer dolls), the clearly defined research question (the smallest doll) that you reveal should provide you with an appropriately focused starting point for your research project. Dudau's (2016) AbC rule offers further insightful advice on the components of your research question, emphasising it should include:

- one or two clearly stated **Ab**stract concepts;
- the *C*ontext in which the research is undertaken.

For example, 'to what extent has organisational citizenship impacted on turnover intentions in the public sector and why?' Here 'organisational citizenship' and 'turnover intentions' are the abstract concepts and the 'public sector' the context. More than two **Ab**stract concepts (or the absence of any abstract concept) make for an undefined theoretical focus, whereas lack of context misses the opportunity for an empirical or theoretical anchor to your study. **Abstract concepts** and *Context* are highlighted for each of the focused overarching research questions in Table 2.2.

Writing your overarching research question(s) will be, in most cases, your task, but it is useful to get other people to help. An obvious source of guidance is your project tutor. Consulting your project tutor will avoid the pitfalls of the questions that are too easy or too difficult or have been answered before. Discussing your question with your project tutor will lead to it becoming much clearer.

Table 2.2 From research idea to overarching research question

Research idea	(Initial) overarching research question	(More focused) overarching research question
Media campaign following product recalls	In what ways can media campaigns be designed to increase consumer trust, value and loyalty in exchange relationships following product recalls?	How does **brand equity** in media campaigns increase **consumer trust, value and loyalty** *following product recalls*?
Graduate recruitment post pandemic	How have firms responded post pandemic to ensure effective recruitment and selection of graduates?	Can **cybervetting** predict **person environment fit and competence** in *post-pandemic graduate recruitment*?
Supermarket coupons as a promotional device	To what extent do supermarket coupon promotions influence buyer behaviour?	Does **couponing** affect **buyer motivation** in *supermarkets*?
Small business start-up funding	To what extent is small business start-up borrowing influenced by the characteristics of the owner?	To what extent are **small business start-ups'** *borrowing decisions* influenced by the *owners' need for independence*?

Key: ***Ab***stract concept, *C*ontext

2.6 Writing a research aim and set of research objectives

Research aim

As well as your overarching research question, you may also be required to formulate a research aim. A **research aim** is a brief statement of the purpose of the research project. It is often written as a sentence stating what you intend to achieve through your research. To illustrate this, the examples of research questions in Table 2.2 have been matched to their research aims in Table 2.3. You will see the close relationship between these: one stated as a question, the other as an aim.

Table 2.3 From overarching research question to research aim

Overarching research question	Research aim
How does brand equity in media campaigns increase consumer trust, value and loyalty following product recalls?	. . . to assess the impact of brand equity on consumer trust, value and loyalty relationships in media campaigns following a series of product recalls.
Can cybervetting predict person environment fit and competence in post pandemic graduate recruitment?	. . . to explore and explain the relationship between cybervetting and graduates' person-environment fit and competence in post-pandemic recruitment.
Does couponing affect motivation to purchase products in supermarkets?	. . . to establish the impact of supermarket couponing on buyer motivation.
To what extent are small business start-ups' borrowing decisions influenced by the owners' need for independence?	. . . to examine the extent to which small business start-ups' borrowing decisions are affected by the owners' need for independence.

Research objectives and investigative questions

Your overarching research question and research aim are complementary ways of saying what your research is about, providing a clear indication of the abstract concepts you will consider (and associated theory) and the context. However, neither gives sufficient detail about purpose and direction: the steps you will need to take to undertake your research. To do this you will need to devise a set of research objectives or more detailed investigative (research) questions. Many project tutors have a preference for either research objectives or investigative questions, but it may be that either is satisfactory. Do check whether your examining body has a preference.

Research objectives allow you to **operationalise** your question, that is to state the steps you will take to answer it. Each **research objective** therefore provides a clear specific statement of an aspect of the research that you need to undertake to meet your research aim. In contrast, **investigative questions** state with precision and depth the questions that by answering also mean you have answered your overarching research question and met your research aim.

Writing useful research objectives or investigative questions both require you to meet a number of fit-for-purpose criteria. Table 2.4 sets out criteria to help you devise research objectives and investigative questions to answer your overarching research question and meet your research aim. Each of these criteria is also rephrased as a short question, which you can use as a checklist to evaluate your own draft research objectives or investigative questions. Box 2.7 provides an example set of objectives at the stage when a student's overarching research question and aim were developed into a sequence of research objectives.

Table 2.4 Research objective and investigative question criteria

Criterion	Purpose
Transparency (What does it mean?)	The meaning is clear and unambiguous.
Specificity (What I am going to do?)	The purpose is clear and easily understood, as are the actions required to fulfil it.
Relevance (Why I am going to do this?)	The link to the aim and overarching research question and wider research project is clear.
Interconnectivity (How will it help to complete the research project?)	Taken together as a set, the research objectives and/or investigative questions outline the steps in the research process from its start to its conclusion, without leaving any gaps. In this way, they form a coherent whole.
Answerability (Will this be possible?) (Where shall I obtain data?)	The intended outcome is achievable. Where this relates to data, the nature of the data required will be clear or at least implied.
Measurability (When will it be done?)	The intended outcome will be evident when it has been achieved.



Box 2.7 Focus on student research

Writing research objectives

Diane worked for a medium-sized technology company that had been taken over by a much larger, multi-divisional firm. This company was gradually being integrated into its larger parent. Originally, the company had been incorporated as one division of the parent firm, although recently one of its most successful product areas had been reallocated into a different division. This had adverse consequences for many employees because it narrowed their scope to work across the company and to seek development opportunities. Many of the original employees had already left the company's employment. However, a significant number of the original employees remained and others who had joined since the take-over had been assimilated into the organisational culture that still prevailed from before the merger.

Diane was undertaking a management course as a part-time student. This course included a substantial research project and Diane thought that the changes at this company and how these affected employees' perceptions of working there would be a fascinating topic and provide the context for her research. She now needed to be clear about the related abstract concepts. She began to review literature related to organisational change, and in particular the impact of organisational structures on those who work within them, and decided that organisational culture and climate were potential abstract concepts. She brainstormed some ideas related to this topic and spent time evaluating these. She then decided to discuss her research idea with two people whose advice she valued.

First, she spoke to one of her tutors. Her tutor felt that this idea had merit but took time to discuss two possible concerns that focused around access and ethical issues. One focused on the likely sensitive nature of this research topic for both the company and those employees from whom Diane would need to collect data. The other focused on the fact that, as Diane worked for the company and alongside those from whom she would need to collect data, there were concerns about confidentiality. However, as they discussed this research idea they agreed that, if addressed in a sensitive way that absolutely ensured confidentially, it could be possible to use her ideas to develop a suitable research project.

Second, she spoke to one of the senior managers in the company. This manager knew that as a part-time student on a management course Diane needed to undertake an organisationally based research project. She explained her research idea to this manager carefully and her justification for wishing to undertake it. This manager had been employed in the company for several months, having been recruited from outside both the company and the parent firm. The manager was aware that some employees had spoken of their concerns about the ways in which the nature of work and scope for development had changed as a result of the take-over and structural changes.

This manager told Diane that there were significant concerns associated with her research idea. In particular, the manager thought there would be a risk of generating greater negativity with real consequences for the company. However, the manager also said that if conducted with sensitivity, her project might prove to be helpful. This, the manager felt, might be achieved by promoting a positive outcome from the research project by asking research participants to indicate how they could become re-engaged with and more committed to the company in spite of the changes that had occurred.

This manager also recognised that if employees felt the company was seen as being behind this research idea, they might be suspicious of Diane and refuse to share meaningful data with her. They discussed this and agreed that if she was going to proceed with this research idea, she should let potential participants know that the data produced would be used only for her dissertation; she would separately produce a short summary document for senior managers that would only focus on recommendations for improvement based on an aggregated level of analysis to ensure confidentiality and anonymity.

These two discussions gave Diane a great deal to think about. She decided to undertake a preliminary

Box 2.7 Focus on student research (*continued*)

Writing research objectives

inquiry to help refine her ideas about her research topic. Without referring to the discussion she had held with the manager to ensure confidentiality, she also held a Delphi group with a small trusted group of colleagues to refine her ideas and to build in scope for a positive focus. She also sought to integrate her ideas by working them up and narrowing them down. After this, she made an appointment to see her tutor. She took a draft overarching research question, aim and set of objectives to this meeting.

The research question read, 'How have employee engagement, commitment and development been affected in a medium-sized technology company, and how may these be promoted following recent organisational change?' It included both abstract concepts (employee engagement, employee commitment and employee development) and a context (medium-sized technology company that had undergone organisational change). The research aim was, 'The aim of this research is to evaluate employee engagement, commitment and development in a medium-sized technology company and explore how these may be promoted following recent organisational change.' The set of objectives were:

1. to describe the nature and cause of recent organisational change;
2. to define clearly the concepts used (employee engagement, employee commitment and employee development) to evaluate the impact of organisational change;
3. to evaluate the impact of recent organisational change on employee engagement and commitment;
4. to evaluate the impact of recent organisational change on employees' perceptions about their scope for development and future progression;
5. to explore ways to promote employee engagement, commitment, development and progression following recent organisational change in the company;
6. to make recommendations to promote employee engagement, commitment, development and progression in the company.

2.7 The importance of theory

We have already alluded briefly to the importance of theory in our earlier discussion of overarching research questions and abstract concepts. We now consider in more detail, what it is, why it is important, and how it informs the research objectives and investigative questions before discussing types of theoretical contribution. This is developed further in the discussion of approaches to theory development in Section 4.5.

What theory is

The term **theory** is used to refer to 'a systematic body of knowledge grounded in empirical evidence which can be used for explanatory or predictive purposes' (Saunders et al. 2015: 37). Theories are therefore based upon the development and examination of (abstract) concepts, the clear definition of these concepts being essential for testing and developing theory (Box 2.7). A theory uses related facts and concepts to provide an explanation or predict an outcome. The explanatory power of a theory is based on its ability to explain relationships between concepts. These explanations need to be capable of being confirmed, refined or contradicted as understandings develop and change based on further research.

To explore the question 'what is theory?' in more detail we use the influential work of Whetten (1989). Whetten identified that theory is composed of four elements, related to 'what', 'how', 'why' and a fourth group of 'who', 'where' and 'when'. The first of these may be summarised as: what are the concepts or variables that the theory examines? For example, in Box 2.7, the concepts in Diane's research question are organisational change, employee engagement, employee commitment and employee development.

The second element may be summarised as: how are these concepts or variables related? Diane's research question was designed to examine the relationships between organisational change, on the one hand, and employee engagement, commitment and development, on the other hand. A key aspect here is **causality**. Theory is concerned with cause and effect. In her research, Diane was interested to explore how organisational change affected employee engagement, employee commitment and employee development. In other words, how did change have an effect on each one of these?

The third element may be summarised as: why are these concepts or variables related? This is the critical element in a theory because it explains the reasons for relationships between the concepts or variables. According to Whetten, 'what' and 'how' are descriptive; it is 'why' that explains the relationship. This point is worth developing, as you may be asking, 'what is the difference between "how" and "why" in this context?' In the case of Diane's research, she found that organisational change had affected employee engagement, commitment and development, respectively. Diane's data allowed her to recognise a number of relationships that she could describe. However, this description did not explain why these outcomes had occurred and, in fact, the reasons for them were complex. For example, different categories of employee provided different explanations for the impact of organisational change upon themselves. Diane needed to analyse her data further (and where necessary to extend its collection) to answer the question, 'why do these relationships exist in my data?'

Once a good theory has been developed it may be used not only to explain why any relationship exists, but also to predict outcomes in a similar situation or where one or more of these theoretical variables are manipulated (changed). In the case of Diane's research, her theory may be used to predict a similar impact on employee engagement and commitment where change in another albeit similar organisation is implemented in the same way. Her theory may also be used to predict different outcomes for employee engagement and commitment where organisational change is managed differently.

While good theory has the power to explain and predict, it may also be subject to limitations. The scope of many theories will be limited by one or more constraints. The fourth group of elements that Whetten identified may therefore be summarised as: who does this theory apply to; where does this theory apply; when does this theory apply? In the case of Diane's research, she recognised that some of her theoretical conclusions applied more to professional-grade staff but less so to administrative staff. She also recognised that with the introduction of new policies to re-engage employees and offer development opportunities, the applicability of some of her conclusions would need to be re-evaluated in the future.

In this way, the explanations of the cause-and-effect relationships between variables in a theory may be contextual and time limited, indicating constraints to their generalisability. Another important contribution that addresses the question 'what is theory?' starts from the opposite perspective by discussing 'What theory is not' (Sutton and Staw 1995). This is a helpful contribution to our understanding and provides a complementary approach to that of Whetten (1989) (Box 2.8).



Box 2.8 Focus on management research

Clarifying what theory is not

Sutton and Staw (1995) make a helpful contribution to the question 'What is theory?' by defining what it is not. In their view theory is not:

1. *References*. Listing references to existing theories and mentioning the names of such theories may look impressive. However, alluding to the theory developed by other researchers may only provide a smokescreen. Instead researchers need to identify the concepts, causal relationships and logical explanations that they are using from previous theoretical work in relation to their own work.
2. *Data*. Data are important to be able to confirm, revise or overturn existing theory and to be able to develop new theory. However, data are used to describe the relationships or patterns that are revealed from their collection and analysis. Description by itself does not equal theory. Theory also requires logical explanations to discuss why such relationships or patterns were revealed, or why they might be expected to be revealed when testing existing theory (Section 4.3).
3. *Lists of variables*. Variables are important in the process of theory development but simply presenting or listing these by themselves does not represent a theory.
4. *Diagrams*. Diagrams are often helpful to show observed or expected causal relationships and how different relationships are related or how they are expected to be related. However, by themselves diagrams or figures are not theory. Sutton and Staw (1995: 376) state: 'Good theory is often representational and verbal.' They say that clear explanations can be represented graphically but that, to be able to develop a rich theoretical understanding, these will also require written discussion to explain why these relationships exist.
5. *Hypotheses or predictions*. In a similar manner to point 3, hypotheses are an important part of the process of developing and testing theory, in particular theoretical approaches (Experiment in Section 5.8), but they do not constitute a theory by themselves.

You are likely to use objectives or investigative questions rather than hypotheses in your research design and we would add to point 5 that the propositions or concepts that inform your research questions are also not theory by themselves.

Why theory is important

There is probably no word that is more misused and misunderstood in education than the word 'theory'. It is thought that material included in textbooks is 'theory', whereas what is happening in the 'real world' is practice. Students who used previous editions of this book remarked that they were pleased that the book was not too 'theoretical'. What they meant was that the book concentrated on giving lots of practical advice. Yet this book is full of theory. Advising you to carry out research in a particular way (variable A) is based on the theory that this will yield effective results (variable B). This is the cause-and-effect relationship referred to in the definition of theory developed earlier, and is very much the view of Kelly (1955). Kelly argues that as individuals attempt to solve the daily problems we face, we go about this activity in much the same way as the scientist. Both continuously make and test hypotheses and revise their concepts accordingly. Both organise their results into what are called schemata and then into a system of broader schemata, which are called theories. Kelly asserts that we need such schemata and theories in order to make sense of the complexity of the world in which we live. Without these organising frameworks we would be overwhelmed by the unconnected detail we would have to recall.

Implicitly, each of us uses theory in our lives and in the jobs that we undertake, for example the marketing manager who believes that issuing coupons (couponing) in the supermarket chain for which they work motivates customers to return, be more loyal, and be less likely to shop regularly at a competitor supermarket (Table 2.2).

Supermarket coupons as a promotional device	To what extent do supermarket coupon promotions influence buyer behaviour?	Does **couponing** affect **buyer motivation** in *supermarkets*?

This is a theory even though the marketing manager would probably not recognise it as such. They are less likely to refer to it as a theory, particularly in the company of fellow managers. Many managers are very dismissive of any talk that smacks of 'theory'. It is thought of as something that is all very well to learn about at business school, but that bears little relation to what goes on in everyday organisational life. Yet the coupons example shows that it has everything to do with what goes on in everyday organisational life. By issuing coupons (variable A), the supermarket is attempting to influence the buyer motivation (variable B). As every supermarket chain issues their own coupons, the marketing manager's personal theory that this encourages loyalty may begin to seem inadequate when confronted by a range of other complementary and innovative strategies to encourage customers to switch where they shop.

The use of coupons may become just one variable among many as supermarkets compete by offering extra loyalty card bonus points on particular goods, double or treble points if customers spend over a certain amount, the opportunity to redeem the value from accumulated bonus points against a range of discounted offers, and so on. In this case, research will provide the marketing manager with a much greater understanding of the effectiveness of couponing strategies used within her or his supermarket chain. The data collected will allow theoretical explanations to be developed, based on causal relationships that may then be used to predict which of these strategies is more effective. It may also indicate that different strategies will be effective in different locations and perhaps that specific strategies are more effective at particular times of the year, or that specific strategies should be targeted at particular socioeconomic groups. The ability to make these predictions potentially allows the supermarket chain to compete more effectively against its rivals. Valid theoretical explanations may lead to predictions that offer the supermarket chain increased opportunities for influence and control, and the possibility of increasing market share.

If theory is so rooted in our everyday lives, it is something that we need not be apprehensive about. If it is implicit in all of our decisions and actions, then recognising its importance means making it explicit. In research, the importance of theory must be recognised: therefore, it must be made explicit.

How theory informs research

So far we have defined the elements of theory and discussed the need to recognise it in your research, even as you start to plan this. At this point, you may be asking, 'why is it important for me to recognise theory at this early stage, when still developing my overarching research question and research objectives?' This relates to the capacity of theory to inform your research ideas (discussed earlier), your overarching research question, research aim and objectives, or investigative questions.

Theory published in the literature may inform your overarching research question in several ways. It will help you to formulate a question that should lead to a theoretical explanation, rather than just a descriptive answer. It will allow you to find out whether others have asked similar questions to the question you propose. Where you find that a

similar research question to yours has been addressed in the literature, you will be able to learn about the context within which it was explored and how the research was conducted. This may help to focus your question to provide you with a set of variables to test, or concepts to explore, to determine whether, how and why they are related in the context of your own research project (Box 2.9).

Using relevant theory to inform your research question will also sensitise you to the nature and level of importance of the research undertaken surrounding your question. You may find that a considerable body of relevant work exists, either in business and management or in another subject domain, for example in psychology, economics or sociology. Discovering this may help you to focus so that later on you can firmly connect your findings and conclusions to this existing theory. It is unlikely that you will fail to find any literature that relates to your proposed question, although where you find that you are working in a more specialised topic area, this discovery may also help to focus your research question to relate to the theory that you locate. It will be important to discuss how the results of your research relate to theory, to be able to assess that theory in the context of your work and to demonstrate the theoretical contribution, no matter how limited, of your research.

Where you simply find it difficult to formulate an overarching research question from your research idea, using existing theory may also help you to achieve this.

How theory is developed

How theory is developed provides a crucial reason for recognising relevant theory when writing your research question and objectives. Your research project will be designed (even if this appears implicit) to test a theory or to develop a theory. Where you wish to



Box 2.9 Focus on student research

Writing an overarching research question based on theory

Justine was a final-year marketing undergraduate who was interested in the theory of cognitive dissonance (Festinger 1957). She wanted to apply this to consumer-purchasing decision-making in the snack foods industry (e.g. buying potato crisps) in the light of the adverse publicity that the consumption of such foods has as a result of 'healthy eating' campaigns.

Justine applied Festinger's theory by arguing in her research project proposal that a consumer who learns that eating too many snacks is bad for her health will experience dissonance because the knowledge that eating too much snack food is bad for her health will be dissonant with the cognition that she continues to eat too many snacks. She can reduce the dissonance by changing her behaviour, i.e. she could stop eating so many snacks. (This would be consonant with the cognition that eating too many snacks is bad for her health.) Alternatively, she could reduce dissonance by changing her cognition about the effect of snack overeating on health and persuade herself that it does not have a harmful effect on health. She would look for positive effects of eating snacks, for example by believing that it is an important source of enjoyment that outweighs any harmful effects. Alternatively, she might persuade herself that the risk to health from overeating snacks is negligible compared with the danger of car accidents (reducing the importance of the dissonant cognition).

Justine's research question was, 'To what extent does adverse "healthy eating" campaign publicity affect the consumer's decision to purchase snack foods and why?'

adopt a clear theoretical position that you will test through the collection of data, your research project will be theory driven and you will be using a **deductive approach**. Where you wish to explore a topic and develop a theoretical explanation as the data are collected and analysed, your research project will be data driven and you will be adopting an **inductive approach**. We discuss approaches to theory development, also introducing the abductive approach, in much greater detail later (Section 4.5). However, it is useful to introduce this fundamental difference in the way theory is developed now to show why you need to think about this when developing your overarching research question, research aim, research objectives and investigative questions. A deductive approach will require you to identify a clear theoretical position when you draft the research question that you will then test. This is the approach we outlined earlier (Box 2.9).

An inductive approach does not rely on identifying an existing theoretical position, but it is likely that if you adopt this approach you will still need to familiarise yourself with theory in your chosen subject area before you draft your research question. Using an inductive approach does not mean disregarding theory as you formulate your research question and objectives. An inductive approach is intended to allow meanings to emerge from data as you collect them in order to identify patterns and relationships to build a theory, but it does not prevent you from using existing theory to formulate your research question and even to identify concepts that you wish to explore in the research process (Section 4.5). In this way, all researchers are likely to commence their research with knowledge of relevant literature and the theory it contains.

There is a further relationship between theory and your research that is important to recognise when developing your research proposal. In our discussion of theory, we recognised that it is crucial to be able to explain how variables or concepts are related and why they are related. Overarching research questions and investigative questions can play a crucial role in encouraging research that is designed to produce theoretical explanations, no matter how limited these explanations might be. A question that only encourages a descriptive outcome will not lead to a theoretical explanation. For example, compare the following questions. 'How satisfied are employees with recent changes in the department's business strategy?' 'What are the implications of recent changes in the department's business strategy for employee satisfaction and why?' The first question will result in a descriptive outcome. The second question has the potential to explore and test relationships and to arrive at theoretical explanations to explain why these might exist.

Types of theoretical contribution

Our discussion of theory has probably left you asking, 'What does this mean for me?' While you will be expected to produce a theoretical explanation, you will not be expected to develop a momentous theory that leads to a new way of thinking about management! Not all theoretical contributions are the same and it is reassuring to look at the threefold typology of theories shown in Figure 2.1.

'Grand theories', such as Newton's theory of gravity discussed in the opening vignette, are usually thought to be the province of the natural scientists. These may be contrasted with 'middle-range theories', which lack the capacity to change the way in which we think about the world but are nonetheless of significance. Some theories such as Maslow's (1943) hierarchy of needs and Herzberg et al.'s (1959) two-factor theory of motivation are well known to managers and would be in this category. However, most of us are concerned with 'substantive theories' that are restricted to a particular time, research setting, group or population, or problem.

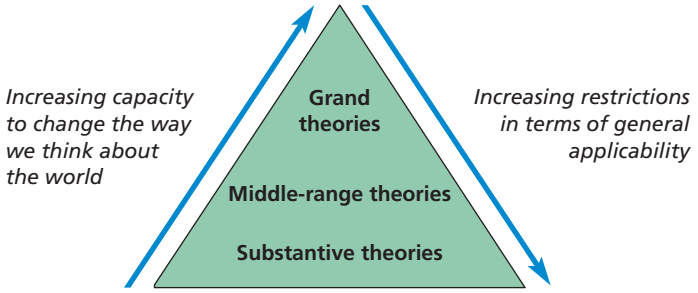


Figure 2.1 Grand, middle-range and substantive theories

For example, studying the implications of a cost-saving strategy in a particular organisation would be an example of a substantive theory. Although they may be restricted, a host of 'substantive theories' that present similar propositions may lead to 'middle-range theories'. By developing 'substantive theories', however modest, we are doing our bit as researchers to enhance our understanding of the world about us. A grand claim, but a valid one!

Another way to examine the theoretical contributions of research into business and management is to assess its practical usefulness for organisations and those who work in them (Box 2.10). This is beautifully stated by Lewin (1945: 130) as 'nothing is as practical as a good theory'.

Box 2.10 Focus on management research

What makes a theoretical contribution?

Corley and Gioia's (2011) study found that the theoretical contribution of management research can be measured along two dimensions. One of these relates to what they call the 'originality' of the contribution. This they divide into a contribution that is either 'incremental' or 'revelatory'. An incremental theoretical contribution is one that adds to or builds on a theory, perhaps by applying it in a new context. A revelatory theoretical contribution is more profound, offering a new theory to make sense of a problem or explain a phenomenon. The other dimension relates to what they call the 'utility' or 'usefulness' of a contribution. This they divide into a contribution that has 'scientific usefulness' or 'practical usefulness'. A scientifically useful contribution is one that emphasises methodological rigour and usefulness to an academic audience. A practically useful contribution emphasises organisational application and usefulness to organisational practitioners.

However, while theoretical contributions on the first dimension are likely to be exclusively either 'incremental' or 'revelatory' (it's unlikely that a contribution could be both!), this does not have to be the case on the second dimension. Corley and Gioia focus much of their article on discussing how to achieve research that is capable of being both academically and practically useful. They refer to designing research that has scope to be theoretically relevant to both academics and organisational practitioners. They consider ways in which this type of theoretical contribution may be achieved. This includes a continuing emphasis on examining the links between theoretical abstractions and practice implications. In interpreting their results, researchers also need to go beyond narrow generalisations and look for insights that can inform organisational practice. In a similar way, when developing theory, researchers need to look not only at the validity of their theories, but also their usefulness and applicability. Researchers also need to exercise some foresight when choosing their research topics so they pursue research that has, and will have, relevance to the problems and issues faced by organisations and organisational practitioners.

2.8 The need for a research proposal

The **research proposal**, occasionally referred to as a protocol or outline, is a structured plan of your proposed research project. In this section we discuss why it is necessary; but it is important to recognise that a competent research proposal will draw on material discussed in subsequent chapters. Before you can write your research proposal, you will need to be aware of available literature and appropriate theory (Section 2.7 and Chapter 3), the research philosophy and approach that you wish to use (Chapter 4), your research design including methodological choice, research strategy and time frame (Chapter 5), access and ethical issues (Chapter 6), sample selection (Chapter 7), data collection methods and data analysis techniques (Chapters 8–13).

Providing a clear specification to guide your research project

Your research project is likely to be a large element in your course. It is also yours! You will be responsible for conceiving, conducting and concluding this project and creating the report, dissertation or thesis. From this perspective, developing a research proposal offers you the opportunity to think carefully about your research project (Box 2.11). We do not suggest that you use the questions in Box 2.11 as headings under which you write responses, but we feel that they should be helpful as a guide and as a checklist against which to evaluate your research proposal before submitting it to your tutor. A well-thought-out and well-written research proposal has the potential to provide you with a clear specification of the what, why, how, when and where of your research project.

Developing a research proposal is demanding: thinking through what you wish to do and why, identifying and synthesising literature and then envisaging all of the stages of your research will be time consuming, as will the necessary revisions to create a coherent and clearly written proposal. However, the effort is likely to prove to be very worthwhile. As you juggle several activities during the period of your research project, there may be occasions when you pick up your research proposal and feel glad that you spent so much time producing a clear specification to guide your project through its various stages.

Ensuring assessment criteria can be met

It is likely that your research proposal will be assessed before you are allowed to carry on with your research project. A proportion of the overall marks available for your project report may be given for the research proposal. Alternatively, a research proposal may be subject to approval before you are permitted to proceed with your research project. In either case, it will be necessary to reach a certain standard before being allowed to progress. There are potentially a number of different criteria that may be used to assess a research proposal. These may include criteria that are specific to each of the components of the proposal, which we describe in Section 2.9. Part of the assessment and approval process may also centre on criteria that focus on more general concerns. We first consider three such criteria that are likely to be used to assess your research proposal: coherence, ethical considerations and feasibility.



Box 2.11 Checklist to guide and evaluate your research proposal

- ✔ Have I explained what am I going to do?
- ✔ Have I explained why I am doing this?
- ✔ Have I said why it is worth doing?
- ✔ Have I explained how it relates to the research that has been done before in the subject area?
- ✔ Have I stated which theory or theories will inform what I am doing and how I will use it or them?
- ✔ Have I stated my overarching research question(s), research aim and my research objectives or investigative questions?
- ✔ Have I outlined how I will conduct my research?
- ✔ Have I outlined my research design?
- ✔ Have I outlined what data I need?
- ✔ Have I stated who and where my intended respondents or participants are?
- ✔ Have I explained how I will select my respondents or participants?
- ✔ Have I explained how I will gain access?
- ✔ Have I outlined how I will collect my data?
- ✔ Have I outlined how I will analyse my data and use this to develop theoretical explanations?
- ✔ Have I outlined what data quality issues I might encounter?
- ✔ Have I outlined how I will seek to overcome these data quality issues?
- ✔ Have I considered the ethical issues I might encounter at each stage of my research?
- ✔ Have I outlined how I will address these?

Coherence

Undertaking research is a complex and time-consuming activity. As we indicated earlier, you are likely to benefit from creating a clear specification to guide your research project. Your project tutor and any other assessor will be looking for evidence of coherence and lucidity in the way you have written your research proposal, to demonstrate that it will be fit for purpose and able to direct your research activity.

Ethical considerations

Part of the approval process for your research proposal may involve it being considered and given a favourable opinion by a research ethics committee. Your university's code of ethical practice is likely to require all research involving human participants to be considered and 'approved', especially where research involves young or vulnerable participants. You will also probably have to state how data will be stored, whether they will be kept after the research is completed and under what conditions, in order to ensure the continuing anonymity of the participants and confidentiality of their data. Section 6.5 discusses ethical issues related to the design stage of a research project. You will need to be aware of and abide by the ethical requirements of your university. These requirements will add to the time that you will need to allow for the planning stage of your research project. As a professional student you may also need to be aware of and abide by the ethical requirements of your professional institute.

Feasibility

You may have devised a coherent and well-structured research proposal that would create much interest but it may not be possible to achieve, or sensible to contemplate. Feasibility is a multifaceted criterion that your assessors will be concerned about. Your proposal may not be possible to achieve in the time available to undertake the research project and produce your dissertation or management report. It may be that data collection would not be possible because you would not be able to gain access to participants, or it might not be practical and your tutor will tell you so! The proposal may require resources that

are not available, finance commitments that are unaffordable, or skills that you have not developed and would not be able to acquire in the timescale of the project.

It is always helpful to discuss your research proposal with a tutor. Where there are concerns about any of the issues just considered, it will be possible to discuss these to work out how the proposed research may be amended. For example, in relation to feasibility something more modest in scope may be discussed. Your task will then be to amend initial ideas and convince your tutor that the proposed research is achievable within the time and other resources available.

Ensuring that your research project isn't based on preconceived ideas

Your research project offers a valuable way to learn the skills involved in this activity. These skills are transferable to many other situations, including the world of work. It is about process as well as outcome. Concerns about feasibility (related to over enthusiasm) lie at one end of a continuum, at the other end of which lies a very occasional concern about sincerity. Do not be like the student who came to Phil to talk over a research proposal and said, 'Of course, I know what the answer will be'. When asked to explain the purpose of doing the research if he already knew the answer, he became rather defensive and eventually looked for another supervisor and, probably, another topic.

Approval of your research proposal implies that if it is followed, the research is likely to be satisfactory. While this is no guarantee of subsequent success, it will reassure you to know that you have started your research journey with an appropriate destination and journey plan. It will be for you to ensure that you do not get lost!

2.9 Structuring your research proposal

There are potentially different ways to structure your research proposal. Different philosophical traditions and approaches to theory development (Chapter 4) will involve a variety of research designs (Chapter 5), and may lead to different ways of structuring your proposal and, as you write up your research, your project report (Chapter 14). We describe what many think of as the standard approach to structuring your research proposal. You will therefore need to check if your assessment criteria require a different structure. Whichever structure you are required to adopt, this will need to be driven by and focused on your research question, aim and research objectives, and you will need to ensure that you produce a coherent proposal.

Title

The title should simply and concisely summarise the research question. It should avoid unnecessary phrases such as, 'A study to explore . . . ' Instead it should reflect the concepts or variables in your research question (Box 2.12). If your research question changes, this will naturally lead to a change to your title.

Background

This section has three related functions which are to:

- introduce the reader to the research issue or problem;
- provide a rationale for your overarching research question and aim;
- ground your research in the academic literature.



Box 2.12 Focus on student research

Devising research proposal titles

Imran (Box 2.6) reworded his research question into the following title for his research proposal:

> Reasons for a lack of fit between corporate strategy and the external environment.

Diane (Box 2.7) devised this title for her research proposal by rewording her research question:

> An evaluation of employee engagement, commitment and development, and scope for their promotion, following organisational change.

Justine (Box 2.9) used her research question to develop this title for her proposal:

> The effect of 'healthy eating' publicity on snack foods purchasing decisions.

Introducing the reader to the research issue addresses the question, 'what am I going to do?' You also need to provide a rationale for your overarching research question and research aim and justify this. This may be composed of two elements, one relating to you and the other relating to the value of the work and referencing the literature. Your reader will be looking for some evidence that this is a topic in which you have sufficient interest to sustain the effort that will be required from you over the period of the research project. This may relate to the need to tackle a problem, to your intellectual curiosity or to your intended career direction. It relates to the question, 'why am I going to do this?' The rationale will also need to address the question, 'why is it worth doing?' This will relate to one of the following types of justification using the academic literature: the application of a theory to a particular context (such as within an organisation); the development of a theory within a research setting; testing a theory within a given context. Your research may propose other such justifications depending on its nature.

Grounding your research in the academic literature means demonstrating how your research relates to relevant previous research. In achieving this you will show your knowledge of relevant literature and clarify where your proposal fits into the debate in this literature (Section 3.3). You will also be able to begin to show which theory or theories will inform what you are doing and show they will be used. The intention will be not to write a detailed review of the literature but rather to provide an overview of key literature sources from which you will draw and the theory or theories within them. This will not be the same as the critical literature review (Sections 3.2 and 3.3) that you will present in your final project report but the start of the process that leads to it.

Overarching research question(s), research aim and objectives or investigative questions

The Background section should lead logically into a statement of your research question(s), research aim and, usually, either research objectives or investigative questions. These should leave the reader in no doubt about what your research seeks to achieve. Be careful here to ensure that your objectives are precisely written and will lead to observable outcomes (Box 2.7).

Method

The Background and Method will be the longest sections of your proposal. The Method section will explain how you will undertake your research. It may be divided into subsections that deal with research philosophy, research design, participants, techniques and

procedures, and ethical considerations. This final element may need to be dealt with in a discrete section of your research proposal.

Research philosophy is discussed in Chapter 4. It involves you in being clear about your own research philosophy, how this may impact on your subsequent research design and ensuring these are consistent with subsequent decisions regarding your method. Research design is discussed in Chapter 5. You will need to make a methodological choice between a quantitative, qualitative or mixed methods design. You will also need to select one or more research strategies (e.g. an experiment, a case study, a survey, a Grounded Theory strategy), and determine an appropriate time frame for your project depending on the nature of your research. You will need to describe each of these and justify your choice by the way these elements fit together to form a coherent whole and are consistent with your research philosophy.

How you design your research will affect the type of data you require, where you intend to locate them and from whom you will collect them. Your data may be collected from human participants, or they may be secondary data (Chapter 8) such as from archival research (Section 5.8) or a combination of these. You will therefore need to be clear regarding type of data you need. If you are using secondary data you will need to explain what these are, where they are located, any issues related to access and justify this choice. If you intend to collect data from people, you will need to be clear who these are likely to be. You may be intending to conduct research in a single organisation or across a number of organisations. You will need to explain and justify the nature of the organisation or organisations and possibly the sector or sectors within which it, or they, operate. The people from whom you intend to collect data may be located within a specific part of an organisation or be drawn from across it. You will need to explain and justify this.

You will also need to explain the nature of your research population and why you chose it. For example, they may be entrepreneurs, managerial employees, non-managerial employees, a particular occupational group, trade union officials or some combination of these. Where you need to select a sample from within a research population you will need to explain how they will be selected. Chapter 7 discusses types of probability and non-probability sampling and you will need to describe and justify your sampling technique(s) and sample size.

You will also need to describe the data collection and analysis techniques you intend to use and how these will enable you to develop theoretical explanations. Data collection techniques include examination of secondary data, observation, questionnaires, interviews and diaries (Chapters 8 to 11). You will not need to explain the precise details of each technique you intend to use, such as including a copy of your questionnaire, an interview checklist or the content of an observation schedule, but you will need to describe how you will use it. For example, if you are using interviews, the structure, mode and medium you will use, how many you will conduct, their intended duration and how you will record the data. You will also need to describe, albeit briefly, how you intend to analyse each type of data that you collect.

It will also be important to discuss ethical considerations so that you anticipate these and demonstrate to your tutor and ethics committee that your research design and proposal have been formulated to minimise ethical concerns and avoid unethical practice. This will be essential where you are dealing with human participants, and sometimes even if using secondary data already collected from human participants. There may be a reduced need for some of you undertaking certain types of research (e.g. where this is based on macro-level, completely anonymised data) but in nearly all cases this requirement is very likely to mean that you need to be sensitive to ethical concerns.

Timescale

It is very helpful to divide your research project into its constituent stages or tasks. You may estimate the amount of time that each stage or task should take to complete. Allocating each stage or task so much time should help you and your tutor decide on the feasibility of the research project, by giving you a clear idea as to what needs to be achieved during the time allowed. Experience shows that however well the researcher's time is organised, the whole process seems to take longer than anticipated. Devising a timescale allows you to monitor your progress and indicates where you need to allocate more working hours to keep up with your intended schedule (Box 2.13).

Many researchers use a **Gantt chart** to produce a schedule for their research project. Developed by Henry Gantt in 1917, this provides a simple visual representation of the stages or tasks that make up your research project, the timings to be allocated to each of these and the relationship between them. It is a simple but effective tool used in various types of project management. In a grid of columns and rows, tasks are listed under each other in the first column. Each row therefore starts with a short description of a task and the remainder of the row indicates a timescale (Figure 2.2).

The time estimated that each task will take is represented by the length of its associated horizontal bar, while each task's start time and finish time is indicated by the beginning and end of the bar. As we can see from the first bar of the chart in Figure 2.2, the student has decided to schedule in two weeks of holiday. The first of these occurs over the Christmas and New Year period, and the second occurs while their tutor is reading a draft copy of the completed project in April. We can also see from the second and fourth bar that, like many of our students, they intend to begin to draft their critical literature review while still reading new articles and books. However, they have also recognised that some activities must be undertaken sequentially. For example, bars 9 and 10 highlight that before they can administer their questionnaire (bar 10) they must complete all the revisions highlighted as necessary by the pilot testing (bar 9). Finally, this student has noted that their project assessment criteria include a reflective essay and has decided to keep a reflective diary throughout the research project (bar 20).

Resources

These are another facet of feasibility (Box 2.1 and also our earlier discussion in this section). Including this discussion in your research proposal will allow you and your tutor to assess whether what you are proposing can be resourced. Resource considerations may be categorised as finance, data access and equipment.

Conducting research costs money. This may include, for example: travel, subsistence, help with transcription or, perhaps, postage for mailed questionnaires. Think through the expenses involved and ensure that you can meet them.

Assessors of your proposal will need to be convinced that you have access to the data you need to conduct your research (Sections 6.2 and 6.3). This may be unproblematic if you are carrying out research in your own organisation. Many project tutors wish to see written approval from host organisations in which researchers are planning to conduct research. You will also need to convince your reader of the likely response rate to any questionnaire that you send.

It is surprising how many research proposals have ambitious plans for large-scale data collection with no thought given to how the data will be analysed. It is important that you convince the reader of your proposal that you have access to the necessary computer software to analyse your data. Moreover, it will be necessary for you to demonstrate that

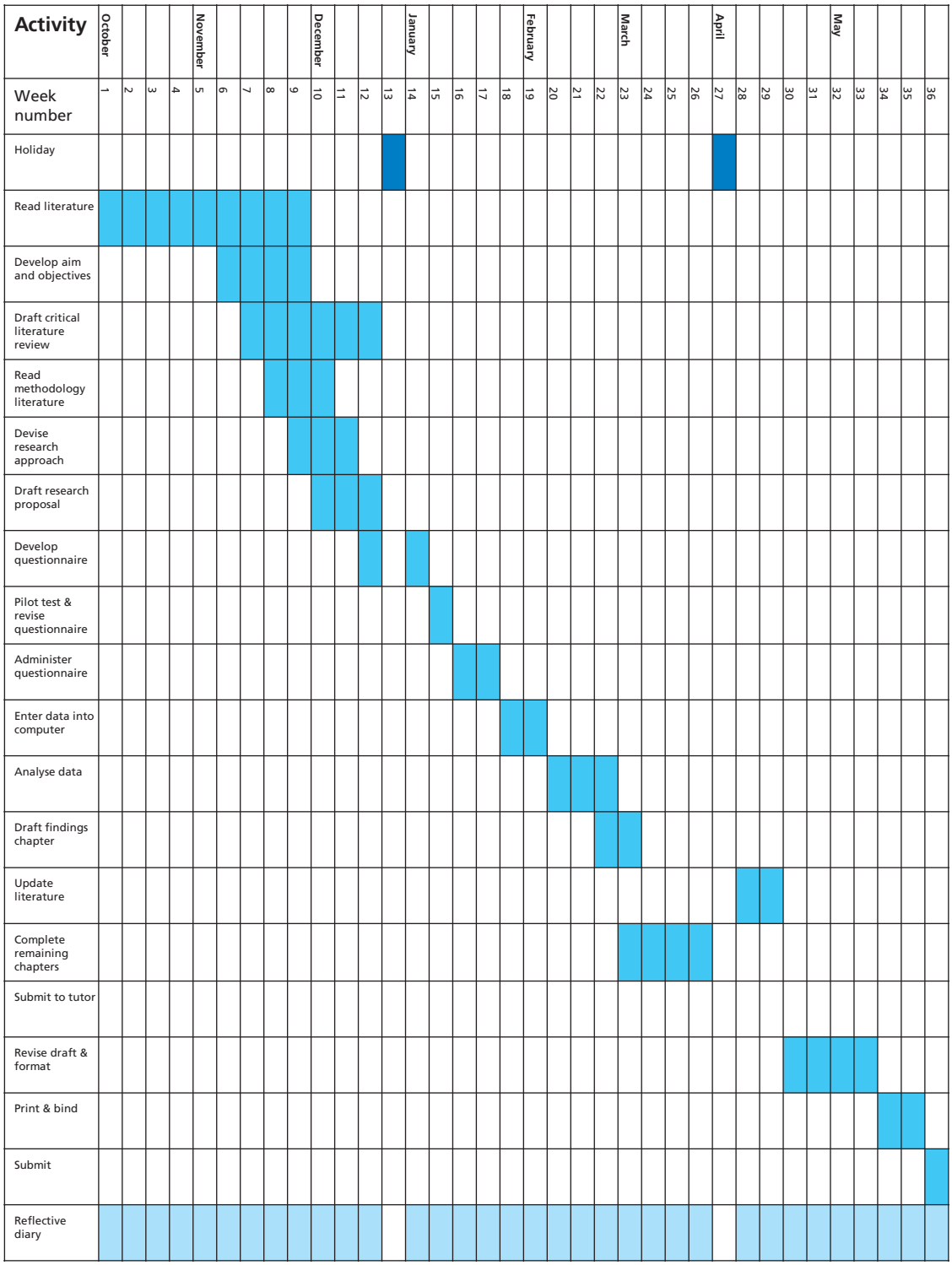
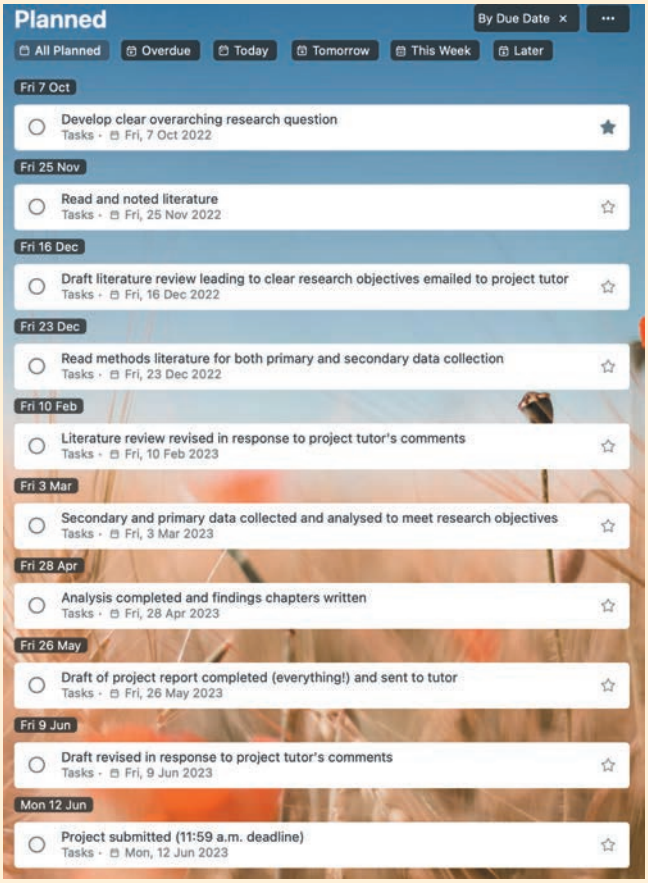


Figure 2.2 Gantt chart for a student's research project

Box 2.13 Focus on student research

Louisa's research timescale

As part of the final year of her undergraduate business studies degree, Louisa had to undertake an 8000–10,000-word research project. In order to assist her with her time management, she discussed the following task list, developed using Microsoft task and reminder setting app 'To Do', with her tutor, noting she had still to fully develop her overarching research question.



you have either the necessary skills to perform the analysis or can learn the skills in an appropriate time, or you have access to help.

References

It is not necessary to try to impress your proposal reader with an enormous list of references. A few key literature sources to which you have referred in the background section and which relate to the previous work and theory that directly informs your own proposal, as well as references to the methods literature, should be all that is necessary. We provide more detail on how to reference in Appendix 2.

2.10 Summary

- Generating a research idea and developing your research proposal are key parts of your research project.
- Characteristics of a good research topic include appropriateness, capability and fulfilment. However, the most important is that it will meet the requirements of the examining body.

- Generating and refining research ideas makes use of a variety of techniques. It is important that you use a variety of techniques, including those involving rational thinking and those involving creative thinking.
- Further refinement of research ideas may be achieved through using a Delphi technique, conducting a preliminary inquiry and integrating ideas by working these up and narrowing them down.
- A clearly defined overarching research question expresses what your research is about and will become the focal point of your research project.
- A research aim is a brief statement of the purpose of the research project. It is often written as a sentence stating what you intend to achieve through your research.
- Well-formulated research objectives or investigative questions operationalise how you intend to conduct your research by providing a set of coherent and connected steps to answer your research question.
- It will be important to use academic theory to inform your research irrespective of the approach you will use to conduct your research project.
- A research proposal is a structured plan for your proposed research project.
- A well-thought-out and well-written research proposal with a clear time frame has the potential to provide you with a clear specification of the what, why, how, when and where of your research project.

Self-check questions

Help with these questions is available at the end of the chapter.

2.1 You have decided to search the literature to 'try to come up with some research ideas in the area of operations management'. How will you go about this?

2.2 A colleague of yours wishes to generate a research idea in the area of accounting. They have examined their own strengths and interests on the basis of their assignments and have read some review articles but have failed to find an idea about which they are excited. They ask you for advice. Suggest two techniques that your colleague could use and justify your choices.

2.3 You are interested in undertaking some research on the interface between business organisations and schools. Write three research questions that may be appropriate.

2.4 For the workplace project for her professional course, Karen had decided to undertake a study of the effectiveness of the joint negotiating and consultative committee in her NHS Trust. Her title was 'An evaluation of the effectiveness of the Joint Negotiating and Consultative Committee in Anyshire's Hospitals NHS Foundation Trust'. Draft some objectives that Karen may adopt to complement her title.

2.5 How may the formulation of an abstract concept with clear links to theory help in the development of a research proposal?

2.6 How would you demonstrate the influence of relevant theory in your research proposal?

Review and discussion questions

2.7 Together with a few colleagues discuss the extent to which a number of research ideas would each constitute a 'good research idea' using the checklist in Box 2.1. The set of ideas you use may be past project titles obtained from your tutor that relate to your course. Alternatively, they may be those that have been written by you and your colleagues as preparation for your project(s).

2.8 Look through several of the academic journals that relate to your subject area. Choose an article that is based upon primary research. Assuming that the research aim and objectives are not made explicit, infer from the content of the article what the aim and objectives may have been.

2.9 Watch the news on television or access a news website. Look for a news item based on research that has been carried out to report a current issue related to business. Spend some time investigating other news websites (e.g. http://www.news.google.com) to learn more about the research that relates to this business news story. Study the story carefully and decide what further questions the report raises. Use this as the basis to draft an outline proposal to seek answers to one (or more) of these questions.



Progressing your research project

Choosing a research topic and developing your research proposal

- If you have not been given a research idea, consider the techniques available for generating and refining research ideas. Choose a selection of those with which you feel most comfortable, making sure to include both rational and creative thinking techniques. Use these to try to generate a research idea or ideas. Once you have got a research idea(s), or if you have been unable to find an idea, talk to your project tutor.
- Evaluate your research idea(s) against the characteristics of a good research project (Box 2.1).
- Refine your research idea(s) using a selection of the techniques available for generating and refining research idea(s). Re-evaluate your research ideas against the characteristics of a good research project (Box 2.1). Remember that it is better to revise (and in some situations to discard) ideas that do not appear to be feasible at this stage. Integrate your ideas using the process of working up and narrowing down to form one research idea.
- Use the AbC rule to help write an overarching research question based on your research idea. Where possible this should be a 'how?' or a 'why?' rather than a 'what?' question.
- Refine this overarching research question and write a research aim and a set of connected research objectives or investigative questions.
- Write your research proposal making sure it includes a clear title and sections on:
  - the background to your research;
  - your overarching research question(s), related aim and research objectives or investigative questions;
  - the method you intend to use including research design, sample, data collection techniques and analysis procedures, and ethical considerations;
  - the timescale for your research;
  - the resources you require;
  - references to any literature to which you have referred.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Alvesson, M. and Sandberg, J. (2011) 'Generating research questions through problematization', *Academy of Management Review,* Vol. 36, No. 2, pp. 247–71. This article discusses the established way in which research questions are generated by researchers and how this approach can be challenged. While the way in which you generate your research question is likely to be related to the established way they discuss, reading this will provide you with a deeper understanding of research questions and their relationship to theory.

Podsakoff, P.M., MacKenzie, S.B. and Podsakoff, N.P. (2016) 'Recommendations for creating better concept definitions in the organizational, behavioral and social sciences', *Organizational Research Methods,* Vol. 19, No. 2., pp. 159–203. This is a significant paper that discusses the importance of concepts and conceptual clarity in undertaking research and their role in theory. It is well worth reading this paper and considering its guidance as you develop your research proposal.

Saunders, M.N.K., Gray, D.E., Tosey, P. and Sadler-Smith, E. (2015) 'Concepts and theory building' in L. Anderson, J. Gold, R. Thorpe and J. Stewart (eds) *Professional Doctorates in Business and Management*. Los Angeles, Sage, pp. 35–56. This chapter is written from the viewpoint that theory is an essential component of all research, being both practical and useful. It will be particularly useful for those undertaking a research project for an organisation.

Sutton, R. and Staw, B. (1995) 'What theory is not', *Administrative Science Quarterly,* Vol. 40, No. 3, pp. 371–84. This is a helpful article to read to gain some insights into the role of theory if you find this aspect daunting. In telling us what theory is not, they provide a very helpful discussion about what it is by referring to their own experiences. They also go further than this and evaluate the role of theory.

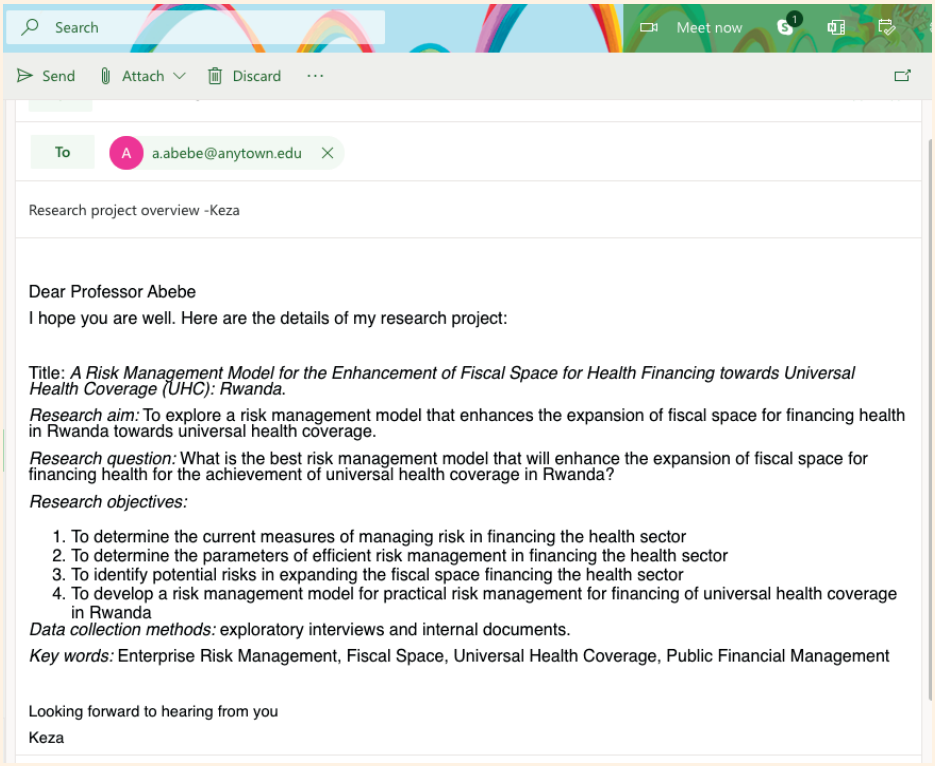
Case 2
Keza's research aim formulation



mangostar/123RF

Keza is studying online for a master's degree in Management and wishes to undertake her research project in her home country, Rwanda, where she works as a civil servant. Due to her high pressure job, sometimes requiring working out of hours, she feels she has very little time to allocate to her degree, so she needs to be pragmatic about the choices she is making about her dissertation: it needs to be interesting enough to keep her motivated to study at the end of a tiring day or week, it needs to not require too much time to understand the organisational context and the academic literature she will need to review, and she will definitely not have time to develop skills in a new method. She has used interviews before in her undergraduate dissertation and also interviews people at work, so feels these should be easy to implement again.

Both as a civil servant and as an MSc student, Keza is interested in public finance, more specifically financial management and universal health coverage in Rwanda. She decides to study



this for her dissertation, as she has access to data (both archives and interviewees) through her work and already knows her line manager is supportive of her studying while working and, through her academic project, contributing to the wider work of her department.

Keza prepares her overarching research question, research aim and research objectives which she emails to her project tutor (see above).

Her project tutor's feedback is that this provides a good start. However, the research aim might be a little too narrow, is too applied, and it is unclear regarding to which bodies of literature the topic is anchored. Keza is a little confused about the comment about the literature, but also relieved that at least her topic is not 'too wide'.

Keza's project tutor also comments that there appears to be a mismatch between her research aim and research objectives and her indicative methods of inquiry. Keza is surprised by this comment and considers her methods to be entirely feasible: she had access to that data through her work and prior experience of the methods having conducted interviews for her undergraduate dissertation.

Questions

1. Has Keza's shown a clear link to theory for her topic?
2. In what way(s) is Keza's topic 'too narrow'? Make reference to the AbC rule to support your answer.
3. How has Keza's pragmatic nature and her intent to make her research feasible distracted her from formulating an appropriate research aim and research objectives?
4. Is Keza's research question exploratory, descriptive, explanatory or evaluative? In what way is there a 'mismatch', as highlighted by her project tutor's feedback?
5. Applying the criteria on Table 2.4, do Keza's research objectives seem transparent, specific, relevant, interconnected, answerable, measurable; and do they fully address her research question/research aim?
6. Reformulate Keza's research aim, to make it compliant with the AbC rule. Remember that Abc refers to one or more abstract, theoretical concepts and only C as the context can limit these, e.g. to work environment, geography, type of situation, type of people.
7. What areas of literature should Keza focus on in her dissertation?



Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.

They are:

- The use of internal and word-of-mouth recruitment methods (focussing on when an apparently good research idea turns out to be one that is of little interest or utility).
- Catherine Chang and women in management (focussing on the process of developing a proposal and the use of different literature sources).
- Media climate change reporting and environmental disclosure patterns in the low-cost airline industry in the twenty-first century (focussing on generating and refining a research idea).
- Self-service technology: Does co-production harm value co-creation? (focussing on the role of theory and the use of fellow students as a data source).
- Helpful but not required: A student research proposal (focussing particularly on mistakes frequently made in the research design aspects of a research proposal. This proposal is in the area of organisational citizenship behaviour).
- Kristina's first draft research proposal (focussing on the common mistakes that are made when first drafting a research proposal. This proposal is in the area of marketing and consumer buying behaviour).

Self-check answers

2.1 One starting point would be to ask your project tutor for suggestions of possible recent review articles or articles containing recommendations for further work that he or she has read. Another would be to browse recent editions of operations management journals such as the *International Journal of Operations and Production Management* for possible research ideas. These would include both statements of the absence of research and unfounded assertions. Recent reports held in your library or on the Internet may also be of use here. You could also scan one or two recently published operations management textbooks for overviews of research that has been undertaken.

2.2 From the description given, it would appear that your colleague has considered only rational thinking techniques. It would therefore seem sensible to suggest two creative thinking techniques, as these would hopefully generate an idea that would appeal to them. One technique that you could suggest is brainstorming, perhaps emphasising the need to do it with other colleagues. Exploring past projects in the accountancy area would be another possibility. You might also suggest that they keep a notebook of ideas.

2.3 Your answer will probably differ from the points that follow. However, the sorts of things you could be considering include:

- How do business organisations benefit from their liaison with schools?
- Why do business organisations undertake school liaison activities?
- To what extent do business organisations receive value for money in their school liaison activities?

2.4 These may include:

- To identify the management and trade union objectives for the Joint Negotiating and Consultative Committee and use this to establish suitable effectiveness criteria.
- To review key literature on the use of joint negotiating and consultative committees.
- To carry out primary research in the organisation to measure the effectiveness of the Joint Negotiating and Consultative Committee.
- To identify the strengths and weaknesses of the Joint Negotiating and Consultative Committee.
- To make recommendations for action to ensure the effective function of the Joint Negotiating and Consultative Committee.

2.5 Let us go back to the example used in the chapter of the supermarket marketing manager who theorises that coupon promotions (couponing) influence buyer behaviour. The abstract concepts are couponing and motivation (to purchase products) within the field of consumer behaviour. The context is the supermarket. This could be the research proposal's starting point and prompts thoughts about the possible use of literature in the proposal and the research project itself. This literature could have at least two strands. First, a practical strand which looks at the research evidence which lends credence to the idea. Second, a more abstract strand that studies human consumer behaviour and motivation and looks at the cognitive processes which affect consumer purchasing decisions. This ensures that the proposal and resultant research project are theory driven and also that relevant theory is covered in the literature.

2.6 Try including a sub-section in the background section that is headed 'How the previous published research has informed my research question, aim and objectives'. Then show how, say, a gap in the previous research that is there because nobody has pursued a particular approach before has led you to fill that gap.

Get ahead using resources on the companion website at: **www.pearsoned.co.uk/saunders.**



- Improve your IBM SPSS Statistics research analysis with practice tutorials.
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Chapter 3



Critically reviewing the literature

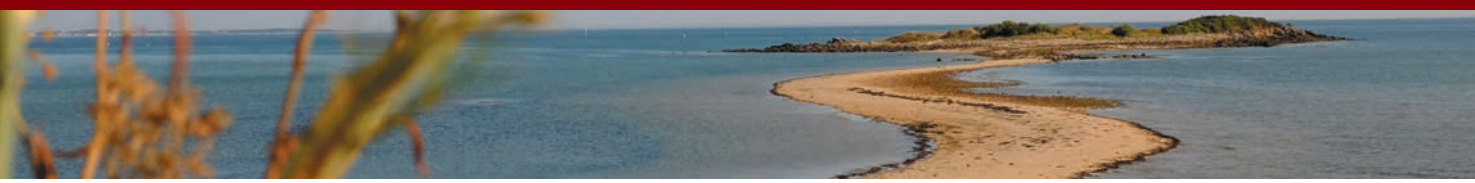
Learning outcomes

By the end of this chapter you should be able to:

- understand what is meant by being critical when reviewing the literature;
- recognise the purpose of the critical literature review and its different forms;
- discuss the content of a critical literature review and possible ways to structure it;
- identify the types of literature available;
- plan your literature search strategy and undertake searches using a variety of databases;
- evaluate the relevance, value and sufficiency of potentially relevant literature;
- reference the literature accurately;
- outline the process of systematic review;
- draft a critical literature review;
- understand why you must acknowledge others' work or ideas and avoid plagiarism;
- apply the knowledge, skills and understanding gained to your own research project.

3.1 Introduction

As part of your studies you have almost certainly been asked by your tutors to 'review the literature', 'produce a literature review' or 'critically review the literature' on a given topic. You may, like many students, have grown to fear the literature review. This is not because of the process of searching for and obtaining and reading the literature. It is because of the requirement both to make reasoned judgements about the value of each piece of work and to summarise and synthesise as you organise those ideas and findings that are value into a written product



known as the **critical (literature) review**. It is this process of obtaining and synthesising previous research, making reasoned judgements and organising your thoughts into a written review, that many find difficult and time-consuming.

There are three ways in which you are likely to use literature in your research project (Creswell and Poth 2017):

- as the preliminary search that helps you to generate and refine your research ideas and draft your research proposal (Sections 2.3 and 2.5);
- to provide the context and theoretical framework for your research (the focus of this chapter);
- to place your research findings within the wider body of knowledge and form part of your discussion chapter (Section 14.3).

Most research textbooks, as well as your project tutor, will argue that a critical review of the literature is necessary. Although you may feel that you already have a reasonable knowledge of your research area, we believe that the process of critically reviewing and writing this review is essential. Project assessment criteria usually require you to demonstrate awareness of the current state of knowledge in your subject, its limitations and how your research fits in this wider context. As Synder (2019: 333) notes: 'building your research on and relating it to existing knowledge is the building block of all academic research activities, regardless of discipline'. This means you have to bring together and discuss what has been published and is relevant to your research topic critically.

The significance of your research and what you find out will inevitably be judged in relation to other people's research and their findings. Your written review needs to be structured and written to show you understand your field and its key theories, concepts and ideas, as well as the major issues and debates about your topic (Denyer and Tranfield 2009). You therefore need to show you have established what relevant research has been published in your chosen area and, if possible, identified any other research that might currently be in progress. Although the literature you read as part of the reviewing process will enhance your subject knowledge and help you to clarify your research question(s) further, only that which is relevant to your research will be included in your finished critical review.

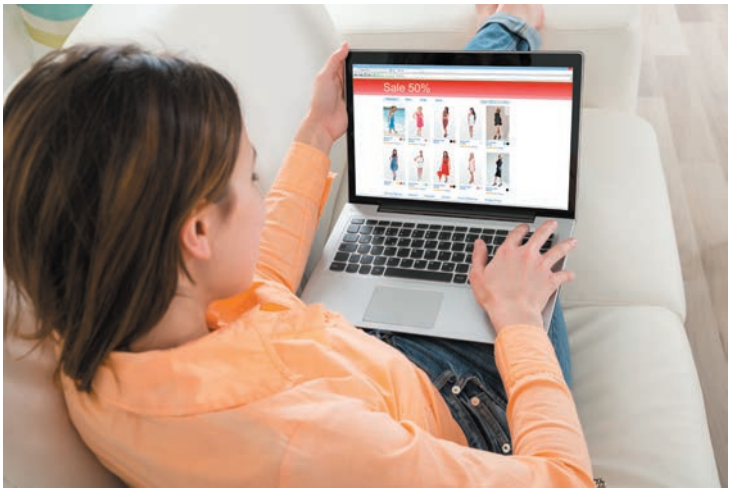
Unlike some academic disciplines, business and management research makes use of a wide range of literature. While your review is likely to include specific business disciplines such as accounting, finance, operations, strategy, marketing and human resource management, it is also likely to include other disciplines such as economics, psychology, sociology, education and geography. Given this, and the importance of the review to your research, it is vital for you to be aware of what a critical literature review is and the range of literature available before you start the reviewing process. We therefore start this chapter by outlining what is meant by being critical, and the various purposes and forms a critical review of the literature can have (Section 3.2). Subsequently, we consider the structure of the literature review (Section 3.3).

Once you have a good knowledge of the literature sources available (Section 3.4), you can start the process by planning your literature search (Section 3.5) and conducting your search (Section 3.6). Potentially relevant literature obtained can then be read and evaluated (Section 3.7),

The critical review is more than an online retailer's web pages . . .

Students often have difficulties writing their literature reviews for their research projects. . . Mark summarises these:

> So, what happens sometimes is . . . a student comes to see me having obviously done a great deal of work. The student has usually already emailed me what they say is the finished critical literature review. Yet the purpose of their review is unclear. It is little more than a summary of the articles and books read, each article or book being given one or two paragraphs. Some students arrange these paragraphs alphabetically in author order; others arrange them in chronological order. None link or juxtapose the ideas. Their literature reviews often look more like an online retailer's web pages than a critical review. Just like the items on these pages, each article or book has some similarities in terms of subject matter and so are grouped together. However, unlike the retailer's web pages, the reasons for these groupings are not made explicit. In addition, while it makes sense to provide similar length summary descriptions of items on the retailer's web pages to help the prospective purchaser come to a decision about whether or not to purchase, this is not the case in a literature review. For each article or book in a literature review, the amount written should reflect its value to the research project.



Andrey_Popov/Shutterstock

Mark concludes:

> While such an approach obviously makes good sense for online retailers and prospective purchasers, it does not work for the critical review of the literature. We obviously need to explain better what we mean by a critical review of the literature to our students.

those which are relevant being noted and referenced (Section 3.8). Alternatively, you may decide that rather than undertaking a traditional literature review, yours will be a self-contained research project to explore a clearly defined research question. In such situations, particularly where questions are derived from organisational practice or policy problems, business and management researchers often adopt the systematic review methodology to critically review the literature. We discuss this in more detail in Section 3.9. You are then ready to start drafting your review (Section 3.10), fully acknowledging your sources and avoiding plagiarism (Section 3.11).

For most research projects, critically reviewing the literature will be an early activity. Despite this early start, it is usually necessary to continue refining your review throughout your project's life. The process can be likened to an upward spiral, culminating in the finished product, a written critical literature review of the literature (Figure 3.1).

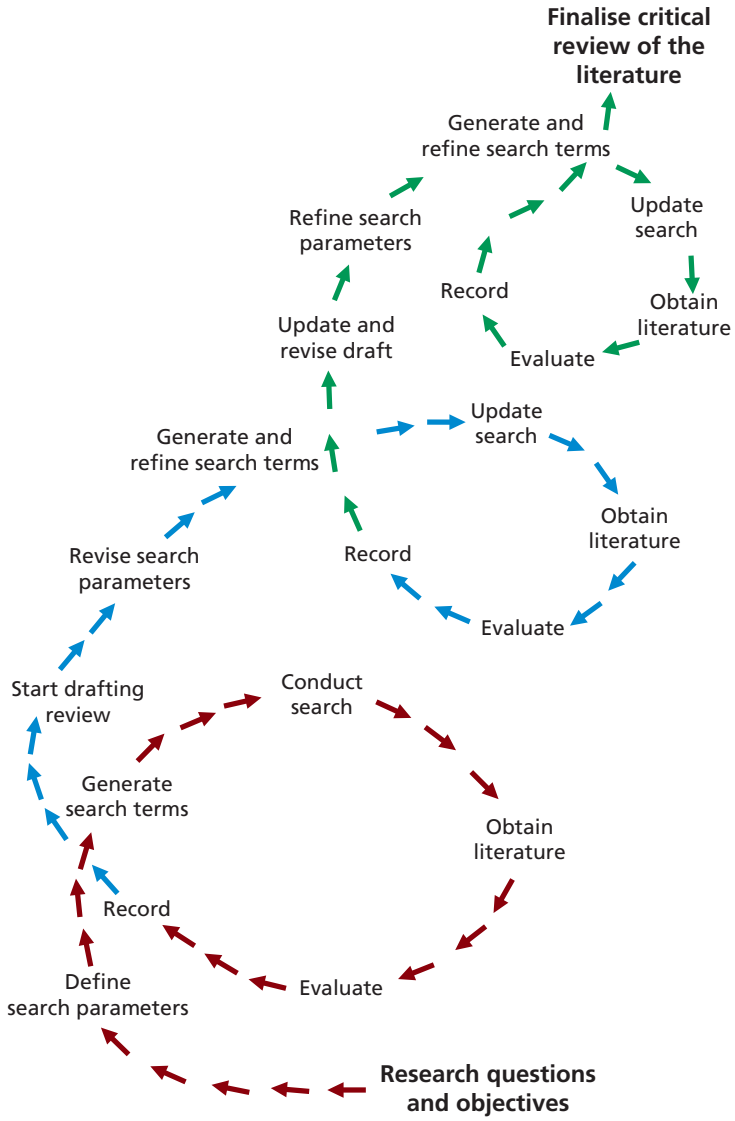


Figure 3.1 The literature review process

3.2 Being 'critical' and the purposes and forms of review

Your critical literature review should be a constructively critical analysis that develops a clear argument about what the published literature indicates is known and not known about your research question (Wallace and Wray 2016). This means, as highlighted in the opening vignette, your literature review is not just a series of paragraphs, each describing and summarising a book or journal article. Rather, you will need to assess what is significant to your research and, on this basis, decide whether or not to include it. If you think

the concepts, theories, arguments or empirical research findings reported and discussed in an article are unclear, biased or inconsistent with other work and need to be researched further, you will need to state this and justify why. This is not easy and requires careful thought. However, by doing this you will be able to produce a reasonably detailed, analytical, constructively critical analysis of the key literature that relates to your research question. Within this you will need to discuss both theories and research findings that support and oppose your ideas.

Being 'critical'

Within your degree programme you have probably already been asked to take a critical approach for previous assignments. However, it is worth considering what we mean by critical within the context of your literature review. Mingers (2000: 225–6) argues that there are four aspects of a critical approach that should be fostered by management education:

- critique of rhetoric;
- critique of tradition;
- critique of authority;
- critique of objectivity.

The first of these, the critique of rhetoric, means appraising or evaluating a problem with effective use of language. In the context of your critical literature review, this emphasises the need for you, as the reviewer, to use your skills to make reasoned judgements and to argue effectively in writing. The other three aspects Mingers identifies also have implications for being critical when reading and writing about the work of others. This includes using other literature sources to question, where justification exists, the conventional wisdom (critique of tradition) and the dominant view portrayed in the literature you are reading (critique of authority). Finally, it is likely also to include recognising in your review that the knowledge and information you are discussing are not value-free (critique of objectivity).

Being critical in reviewing the literature is, therefore, a combination of your skills and the attitude with which you read and your ability to write cogently. In critically reviewing the literature, you need to read the literature about your research topic with some scepticism and be willing to question what you read; the term critical referring to the judgement you exercise. This means as you write your review you need to be constantly considering and justifying your own critical stance with clear arguments and references to the literature rather than just giving your own opinion. As you review the literature, your existing views and opinions are likely to be challenged by what you read. You should welcome these challenges and recognise that through thinking critically about what you are reading, your views and opinions may alter. Critically reviewing the literature for your research project, therefore, requires you to have gained topic-based background knowledge, understanding, the ability to reflect upon and to analyse the literature and, based on this, to make reasoned judgements that are argued effectively in writing. Your written review provides a detailed and justified analysis of, and commentary on, the merits and faults of the key literature within your chosen area.

Part of your critical judgement will involve you in identifying those theories and research findings that are most relevant to your research aims and objectives. This is not as easy as it seems and will invariably involve you in reading and evaluating literature that you subsequently judge is not relevant to your review. For some research topics, as you begin to review the literature, you will observe that a certain theory and set of ideas provide the

theoretical base for much of the research reported. This theory is likely to be considered by researchers as **seminal**. In other words, it has been of great importance or had great influence. Seminal theories will often also be discussed in textbooks on your research area, the associated articles being frequently cited. At the same time, you will begin to recognise those researchers whose work is seminal and has been most influential in relation to your topic. The work of these researchers is likely to be discussed more widely in journal articles, and they may also be referred to by name in textbooks. These researchers are likely to be recognised as the experts in your research area. However, although others consider a particular theory seminal and recognise particular researchers as experts for your topic, this does not mean that you should ignore alternative theories and other researchers. These will also need to be considered in relation to your own research in your critical review.

For other research topics, you are likely to need to integrate a number of different theoretical strands to develop your understanding and provide a firm foundation. You may through your reading discover that there are contrasting theoretical perspectives on the same topic, or it may be that your research needs to integrate two or more theories from different subject areas. Dees (2003) suggests that this means you should:

- refer to and assess research by those recognised as experts in your chosen area accurately;
- consider, discuss and evaluate research that offers both similar and differing perspectives on your chosen area;
- explain your evaluation regarding the value of this research, showing clearly how it relates to your research and acknowledging key work;
- develop a clear, persuasive, logical, balanced and justified argument;
- distinguish clearly between research findings and researchers' opinions;
- ensure your references are completely accurate.

When you draft your critical review (Section 3.10), the extent to which your literature review is critical can be evaluated using the checklist in Box 3.1. The more questions that you can answer 'yes' to, the more likely your review is critical.



Box 3.1 Checklist

Evaluating whether your literature review is critical

Have you:

- ✔ contextualised your own research showing how your research question relates to previous research reviewed, acknowledging seminal work?
- ✔ assessed the strengths and weaknesses of the previous research reviewed in relation to your research topic?
- ✔ been rigorous in your discussion and assessment of previous research?
- ✔ been balanced, referring to research that is counter to, as well as supports, your views and opinions, having now reviewed the literature?
- ✔ distinguished clearly between research findings and researcher's opinions?
- ✔ made reasoned judgements about the value and relevance of others' research to your own?
- ✔ justified clearly your own ideas?
- ✔ highlighted those areas where new research (yours!) is needed to provide fresh insights and taken these into account in your arguments? In particular where:
  - there are inconsistencies in current knowledge and understanding
  - you have identified potential bias in previous research



- there are omissions in published research
- research findings need to be tested in alternative contexts
- evidence is lacking, inconclusive, contradictory or limited.

✔ developed a clear, persuasive, logical argument?
✔ accurately referenced all research to which you refer?

Purposes of a critical review

The critical review provides the foundation on which your research is built. As you will have gathered from the introduction, a critical review will help you to develop a good understanding and insight into relevant previous research and the trends that have emerged. Likewise, you should not expect to start your research without first reading what other researchers in your area have already found out.

Most critical reviews fulfil a series of related purposes. These can be summarised as providing (Ridley 2018; University of Southern California 2021):

- the historical background to your research;
- an overview of your research's context by locating it in the associated contemporary debates, issues and questions provided by existing literature;
- resolution to conflicts among apparently contradictory previous research;
- a discussion of the relevant theories and concepts that underpin your research;
- definitions and clarifications regarding how relevant terms are being used in your research;
- insights into related research that your own work is designed to extend or challenge;
- supporting evidence that your research questions and aims are worth researching, in other words their significance.

Your literature review therefore contextualises your research in relation to previous research. You are, in effect, providing the background to and justification for your own research project. However, the way you do this in your critical review will depend on the approach you are intending to use in your research. For some research projects you will use the literature to help you to identify theories and ideas that you will subsequently test with data. This is known as a **deductive approach** (Section 4.5) in which you use the literature to develop a theoretical or conceptual framework for subsequent testing. For other research projects the literature review, while outlining what is known, will reveal an aspect about which very little is known or for which there is no clear theoretical explanation. This can be likened to the literature revealing an unopened box within which you do not know what is happening. In such instances, the literature review will provide the context and justification for finding out what is going on inside the box. You will use data to explore what is going on inside the box and from these insights develop a theory or conceptual framework. These will subsequently be related to the literature in your following discussion. This is known as an **inductive approach** (Section 4.5) and, although your research still has a clearly defined aim with research question(s) and objectives, you need to first use data to either get a clearer feeling of what is going on, or better understand the nature of the problem in order to create a conceptual framework or develop a theory. It may also be that you wish to explore the phenomenon in a particular context without being over sensitised to existing theoretical constructs. We believe such an approach cannot be taken without a competent knowledge of the literature in your subject area.

Forms of critical review

The way you organise your critical review depends on your research question and aim. Forms of review have been classified and grouped in a wide variety of ways. One our students have found useful, categorises critical literature reviews into six forms (University of Southern California 2021):

Integrative, critically analysing and examining the main ideas and relationships in representative literature on a topic in an integrative way. The purpose is to provide an overview, and either generate new frameworks and perspectives on a topic for testing or, alternatively, reveal an area where it is unclear what is happening.

Theoretical, examining the body of theory that has accumulated in regard to an issue, concept, theory or phenomenon. Theoretical reviews are often used to establish what theories exist and the relationships between them. They are also used to reveal a lack of appropriate theories or that current theories are inadequate for explaining new or emerging research problems. They can therefore be used as the basis for developing new theory to be tested, or revealing an area where it is unclear what is happening (Box 3.3).

Historical, examining the evolution of research on a particular topic over a period of time to place it in an historical context. They are used to place research in an historical context and identify directions for future work.

Methodological, focussing on research approaches (Section 4.5), strategies (Section 5.5), data-collection techniques or analysis procedures, rather than the research findings. Methodological reviews are often used to provide a framework for understanding a method or methodology and to enable researchers to draw on a wide body of methodological knowledge and can help highlight potential ethical issues.

Argumentative, examining literature selectively to either support or refute well established positions or assumptions. They are used to establish an alternative viewpoint, although care must be taken not to introduce bias if they are used to develop summary conclusions about what is known.

Systematic, which uses a comprehensive pre-planned strategy for locating, critically appraising, analysing and synthesising existing research that is pertinent to a clearly formulated research question to allow conclusions to be reached about what is known (Section 3.9). They are used to summarise all relevant research about the topic.

The most common of these forms for student research projects is the integrative review, although systematic and theoretical reviews are also popular. It is also worth noting that, depending upon the precise focus of your research project, your review may be a combination of these types. For example, a theoretical review may be supplemented with an integrative review, or a historical review may focus on the development of a particular body of theory. Alternatively, following an integrative or theoretical review, a methodological review may be incorporated into the methodology.

It is impossible to review every single piece of the literature before collecting your data. Consequently, your literature review should review the most relevant and significant research on your topic. When you write your critical review, you will need to show how your findings and the theories you have developed, or are using, relate to the research that has gone before. This will help you demonstrate that you are familiar with what is already known about your research topic.

3.3 The content and structure of a critical review

The content of a critical review

As you begin to find, read and evaluate the literature, you will need to think how to combine the academic theories and research findings about which you are reading to form the critical review that will appear in your project report. Your review will need to evaluate the research that has already been undertaken in the area of your research project, show and explain the relationships between published research findings and reference the literature in which they were reported (Appendix 1). It will draw out the key points and trends (recognising any omissions and bias) and present them in a logical way that also shows the relationship to your own research. In doing this, you will provide readers of your project report with the necessary background knowledge to your research question(s) and objectives, and establish the boundaries of your own research. Your review will also enable the readers to see your ideas against the background of previous published research in the area. This does not necessarily mean that your ideas must extend, follow or approve those set out in the literature. You may be highly critical of the earlier research reported in the literature and seek to question or revise it through your own research. However, if you wish to do this, you must still review this literature, explain clearly why you consider it may require revision and justify your own ideas through clear argument and with reference to the literature.

In considering the content of your critical review, you will therefore need:

- to include the key academic theories within your chosen area of research that are pertinent to, or contextualise, your research question;
- to demonstrate that your knowledge of your chosen area is up to date;
- to enable those reading your project report to find the original publications that you cite through clear complete referencing.

When you draft your critical review (Section 3.10) its content can be evaluated using the checklist in Box 3.2.

Possible structures for a critical review

The precise structure of the critical review is usually your choice, although you should check, as it may be specified in the assessment criteria. Three common structures are:



Box 3.2 Checklist

Evaluating the content of your critical literature review

- ✔ Have you ensured that the literature covered relates clearly to your research question and objectives?
- ✔ Have you covered the most relevant and significant theories of recognised experts in the area?
- ✔ Have you covered the most relevant and significant literature or at least a representative sample?
- ✔ Have you included up-to-date relevant literature?
- ✔ Have you referenced all the literature used in the format prescribed in the assessment criteria?

- a single chapter;
- a series of chapters (for example, in a larger research project);
- occurring throughout the project report as you tackle various issues (for example, where your research project is conducted inductively).

In all project reports, you should return to the key issues you raise in your literature review in your discussion and conclusions (Section 14.3).

In the opening vignette we highlighted a common problem with literature reviews: they just describe what each author has written, one author after another (horizontal arrows in Figure 3.2), each item being selected subjectively by the researcher (Hart 2018). It is much easier to be critical (and more interesting to read) if you take a thematic approach comparing and, where necessary, contrasting those authors who discuss each theme (vertical arrows in Figure 3.2). Although there is no single structure that your critical review should take, our students have found it useful to think of the review as a funnel in which you:

1. start at a more general level before narrowing down to your specific research question(s) and objectives;
2. provide a brief overview of key ideas and themes;
3. summarise, compare and contrast the research of the key authors for each theme;
4. narrow down to highlight that which is most relevant to your own research question(s) and objectives;
5. provide a detailed account of these theories and findings and explain how they are related;
6. highlight those aspects where your own research will provide fresh insights linking explicitly to your research question(s) and objectives;
7. outline briefly how subsequent sections of your project report will address these aspects.

Whichever way you structure your review, it must demonstrate that you have read, understood and evaluated the literature you have located and know the themes (and their authors) which are key to your own research. The key to structuring a critical literature review is therefore to link the different ideas you find in the literature to form a coherent and cohesive argument, which sets in context and justifies your research. Obviously, it should relate to your research question and objectives. It should show an explicit link

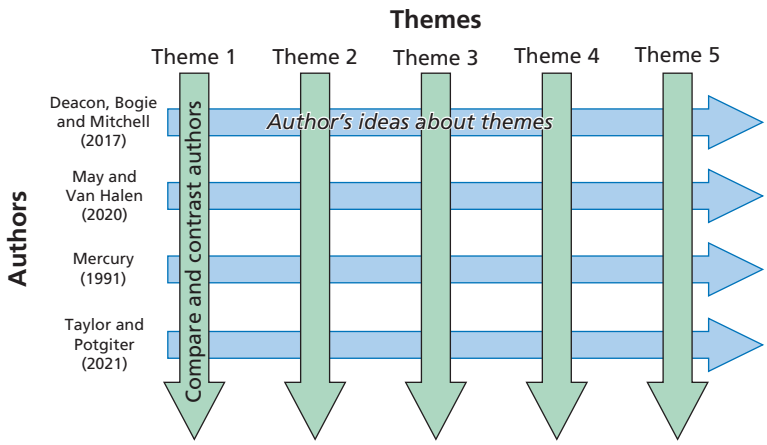


Figure 3.2 Literature review structure

from these as well as a clear link to empirical work that will follow. Subsequent parts of your project report (Section 14.3) must follow on from this. Box 3.3 provides an extract from the literature review in a recently published paper.



Box 3.3

Focus on management research

Structure of the literature review

A refereed academic journal article by Neve Isaeva, Kira Gruenewald and Mark Saunders, published in *The Service Industries Journal* (Isaeva et al. 2020) offers a theoretical review and synthesis of the trust theory and customer service research literature. The following extract is taken from the first three paragraphs of the introduction to their article; although your review will be longer than this extract (pp. 1031–2). It illustrates a structure that:

- in the first paragraph, starts at a more general level looking at the nature and importance of trust for organisational success;
- then, in the second paragraph, narrows the focus to trust research in the service industries, highlighting how scholars have adopted different conceptualisations of trust;
- and, in the third paragraph, builds on these points to justify the need for the review arguing that service industries' trust researchers need to engage more fully with the theoretical foundations of trust, outlining the contribution of the article and justifying their use of a theoretical review.

The remainder of the introduction outlines the structure of their review article.

> Trust is a complex, multidisciplinary concept that is recognised as a strategic asset (Castaldo et al. 2010) and vital element for organisational success (Dietz and Gillespie 2011; Kramer and Cook 2004). In particular, service firms have recognised increasingly that the building and maintenance of trusting relationships with customers is the key success factor (Bozic 2017; Váquez Casielles et al. 2005). Correspondingly, fostering customer trust is considered a viable way for tackling challenges surrounding attracting new and retaining existing customers in highly competitive contexts (Sun and Lin 2010). Furthermore, trust is shown to contribute to achieving greater competitive advantage (Barney and Hansen 1994; Berry 1996; Warrington et al. 2000), sales effectiveness (Hu et al. 2003; Johnson and Grayson 2005), customer loyalty (Chen and Mau 2009; La and Choi 2012; Nguyen 2016; Sirdeshmukh et al. 2002), customer commitment (Johnson and Grayson 2005; Nguyen 2016; Pereira et al. 2016; van Tonder and Petzer 2018), improved perception of value (Sirdeshmukh et al. 2002; van Tonder and Petzer 2018), and collaborative, cooperative, and successful exchange relationships (Doney and Cannon 1997; Grayson et al. 2008; Morgan and Hunt 1994).
>
> Trust has experienced a considerable increase of scholarly interest across different service industries (Agariya and Singh 2011; Bachmann and Zaheer 2006) such as finance (Chiao et al. 2008; Gillespie and Hurley 2013; Hansen 2017; Kosiba et al. 2018; Nguyen 2016; Wang et al. 2015), tourism and hospitality (Altinay and Taheri 2019; DeWitt et al. 2008; Gregori et al. 2014; Nunkoo and Smith 2015; Pereira et al. 2016; Rather et al. 2019; Tussyadiah and Park 2018; Wang et al. 2014), healthcare (Calnan and Rowe 2006; Dean et al. 2017; Murray and McCrone 2014; Nienaber and Schewe 2014; Peters and Bilton 2018; Skinner et al. 2004; Şengün and Wasti 2011), media (Filieri et al. 2015; Jackob 2010; Lee 2010), technology (Barua et al. 2018; Jeon et al. 2019; McKnight 2005) and the like. This surge of interest has paralleled the shift of focus from transactional- to relationship-based service orientation, scholars adopting differing conceptualisations of trust.
>
> Applauding this increase in scholarly interest, we contend advancement of service industries' trust research could benefit from engaging more fully with the theoretical foundations of trust, exploring cross-disciplinary debates, and considering

associated questions. Our contribution is therefore to review the fundamental trust theories while synthesising service industries and management literatures on trust; the purpose being to provide a foundation for service industries scholars alongside service firms and their representatives focusing on customer trust. Recognising that a systematic review is only suitable for some research purposes (Petticrew and Roberts 2006), adherence to preset criteria restricting the extent of the diversity among included publications (Cassell 2011) and invariably necessitating constraining the focus perhaps to a single industry, we have sought more flexibility and broader focus when evaluating the extant trust theory. Consequently, we have carried out a theoretical review (Saunders et al. 2019), focusing on those trust theories frequently identified and utilised in key trust literature, in particular, the Journal of Trust Research, widely cited research volumes such as Handbook of Trust Research (Bachmann and Zaheer 2006), Landmark Papers on Trust (Bachmann and Zaheer 2008), Handbook of Advances in Trust Research (Bachmann and Zaheer 2013), and the Handbook of Research Methods on Trust (Lyon et al. 2015), alongside those utilised in 167 most highly cited trust articles considered by Isaeva et al. (2015). These theories are explored in the service industries context using empirical work such as published in The Services Industries Journal. Although we acknowledge the possibility of overlooking potentially relevant and crucial work through such an approach, we believe we provide a clear and comprehensive representation of key trust theory that constitutes a base for those service industries scholars undertaking trust research.

Source: Neve, I., Gruenewald, K. and Saunders, M.N.K. (2020). Copyright © Informa UK Limited, trading as Taylor & Francis Group, Reproduced by permission of the publisher

3.4 Literature sources

The amount of literature available to help you to develop a good understanding of, and insight into, previous research is expanding rapidly as new resources are developed and made available online. The literature sources you are likely to make most use of are often referred to as:

- **white literature** sources, these being formally published scholarly items, particularly journals, that have been peer reviewed;
- **grey literature** sources, these being items that have not been through the peer-review process and have been published in formats such as conference proceedings, dissertations or theses, government reports and other institutions reports.

The process of **peer review** is important as it means that prior to publication the work has been scrutinised and evaluated by others who are experts in the same field and deemed worthy of publication.

Historically, grey literature has been difficult to access as it has not been included in academic databases (Adams et al. 2017). However, while digitisation means grey literature are far easier to find and retrieve, it is crucial to evaluate their credibility (Section 3.7). Your university's librarians are likely to be aware of a wide range of these business and management literature sources that can be accessed, principally from your university library's web pages, and will keep themselves up to date with new resources. Those resources that are most likely to be of use to your literature review are usually print and electronic materials, and those subscription databases that include information from journals, electronic books, magazines and newspapers. In addition, as discussed in Sections 8.2 and 8.4, library subscription databases also offer access to secondary data. Many universities now offer a single search interface, which allows integrated access to search their collections of print, electronic and audio-visual materials including journals, books and all their subscription databases.

The white and grey literature sources you are most likely to use are outlined in Table 3.1. When placing your ideas in the context of earlier research, white literature is likely to be the most important, particularly academic journals. Books authored by academics are likely to be more important than professional and trade journals in this context.

Journals

Journals are also known as 'periodicals', 'serials' and 'magazines', and are published on a regular basis. Journals are a vital literature source for any research. The articles are accessed using full-text databases such as *Business Source Complete* and *Emerald Management Plus,* including through your university's *single search interface,* this usually being restricted to members of the university (Tables 3.1 and 3.2). Subject to copyright restrictions, many academics also make pre-publication versions of their articles available at no charge on platforms such as *Academia.edu* and *ResearchGate.* While the articles uploaded are not facsimiles of published versions, usually being an earlier draft, they are still extremely useful. Most universities make copies of research outputs authored by their staff available online free of cost or other barriers (**open access**) through their institutional repositories or research archives. In addition, a growing number of national governments, including the UK, have through 'access to research' initiatives provided free, walk-in access to academic articles and research in public libraries (Access to Research 2021). Trade and some professional journals may be covered only partially by online databases (Table 3.2) but can usually be accessed through search engines such as Google. You may therefore need to browse these journals' webpages regularly to be sure of finding useful literature. Beware, although available online, they are often only available to subscribers. For many academic journals you can receive email 'alerts' of the table of contents (TOC). TOCs can also be browsed online and downloaded through tertiary literature sources such as *Journal TOCs* and the British Library's *ZETOC* database (Table 3.2). Similarly, social network platforms allow you to follow particular academics and receive automatic updates regarding their work.

Articles in **peer-reviewed (refereed) academic journals** (such as the *Journal of Management Studies* and the *Academy of Management Review*) are evaluated by academic peers prior to publication to assess their quality and suitability. They are usually written by those considered to be experts in the field, pay rigorous attention to detail and verification of information, and contain an extensive list of references. Such articles are written for a narrower audience of scholars with a particular interest in the field. The language used may be technical or highly specialised as a prior knowledge of the topic will be assumed. Prior to being accepted for publication, articles usually undergo several serious revisions, based on the peer reviewers' comments, before they are published.

These are usually the most useful for research projects as they will contain detailed reviews of relevant earlier research. Not all academic journals are refereed. Most *non-refereed academic journals* will have an editor and possibly an editorial board with subject knowledge to select articles. The relevance and usefulness of such journals varies considerably and, occasionally, you may need to be wary of possible bias.

Professional journals (such as *People Management*) are produced for their members by organisations such as the Chartered Institute of Personnel and Development (CIPD), the Association of Chartered Certified Accountants (ACCA) and the American Marketing Association (AMA). They contain a mix of news-related items and articles that are more detailed. However, you need to exercise caution, as articles can be biased towards their author's or the organisation's views. Articles are often of a more practical nature and more closely related to professional needs than those in academic journals. Some organisations

will also produce newsletters or current awareness publications that you may find useful for up-to-date information. Some professional organisations now give access to selected articles in their journals via their web pages, although these may be only accessible to members. **Trade journals** fulfil a similar function to professional journals. They are published by trade organisations or aimed at particular industries or trades such as catering or mining. Often, they focus on new products or services and news items. They rarely contain articles based on empirical research, although some provide summaries of research. You therefore need to evaluate these particularly carefully if you wish to use them in your research project.

Table 3.1 Sources of white and grey literature

Source	Content	Use for the literature review	Coverage by online databases	Likely availability
Peer-reviewed (refereed) academic journal	Detailed research articles. Written by experts and evaluated by other experts to assess quality and suitability for publication. Rigorous attention paid to detail and verification.	Most useful of all.	Well covered. In addition, content pages often available for searching via publishers' websites.	Online through various subscription services. Increasingly available via institutional repositories, national 'access to research' initiatives or social networking platforms. Those not available may be obtained using inter-library loans.
Non-refereed academic journal	May contain detailed reports of research. Selected by editor or editorial board with subject knowledge.	Varies considerably. Beware of bias.	Reasonably well covered. In addition, content pages often available for searching via publishers' websites.	Online through various subscription services. Increasingly available via institutional repositories, national 'access to research' initiatives or social networking platforms. Those not available may be obtained using inter-library loans.
Professional journals	Mix of news items and practical detailed accounts. Sometimes include summaries of research.	Insights into practice but use with caution.	Reasonably well covered by online databases. In addition, content pages often available for searching via professional associations' websites.	Online through various subscription services. Those not available may be obtained using inter-library loans. Professional associations may also provide access to their journals via their own web pages.
Trade journals/ magazines	Mix of news items and practical detailed accounts.	Insights into practice but use with caution.	Content pages often available for searching via professional associations' websites.	Not as widely available in university libraries as peer-reviewed academic journals. Try the trade association's associated website.

(*continued*)

Table 3.1 (*Continued*)

Source	Content	Use for the literature review	Coverage by online databases	Likely availability
Books and e-books	Written for specific audiences. Usually in an ordered and relatively accessible format. Often draw on wide range of sources.	Particularly useful for an overview and to find recognised experts.	Searches can be undertaken on university OPACs.*	Increasingly online through university libraries. Those not available locally may be obtained using inter-library loans.
Newsmedia	Written for a particular market segment. Filtered dependent on events. May be written from particular viewpoint.	Good for topical developments. Beware of possible bias in reporting and coverage.	National newspapers reasonably well covered by specialised databases.	Online access to stories, often with additional information for most national and international 'quality' newspapers via university libraries or subscription services.
Conference proceedings	Selected papers presented at a conference.	Can be very useful if on same theme as research.	Depends on conference, although often limited. Specialist indexes sometimes available, such as 'Index to conference proceedings'.	Not widely held by university libraries. Can be difficult to find even using search engines. Increasingly only contain abstracts.
Reports	Topic specific. Written by academics and organisations. Those from established organisations often of high quality.	Very useful, when matches your topic.	Poor, although some specialised indexes exist.	Not widely held by university libraries. Often available online. May be possible to obtain others using inter-library loans.
Theses	Often most up-to-date research but very specific.	Good for doctorate level (and to a lesser extent MPhil) research degrees, otherwise less useful.	Covered by indices of theses.	Increasingly available online, although can also be obtained using inter-library loans.

*OPAC, Online Public Access Catalogue.

Source: © 2021 Mark Saunders

Table 3.2 Databases, interfaces, platforms and search engines and their coverage

Name	Coverage
Academia.edu	Platform for sharing academic research containing over 22 million articles across all disciplines
Access to Research	Database for locating walk-in access to over 30 million research articles (including business and management) via participating UK public libraries
British National Bibliography (BNB)	Catalogue of books and serials (journals) deposited at the British Library by UK and Irish publishers since 1950 including electronic publications
British Library Integrated Catalogue	Catalogue of print and electronic resources held by the British Library. Includes reference collections and document supply collections
British Library Management and Business Studies Portal	Interface to digital full-text research reports, summaries, working papers, consultancy reports, think pieces as well as details of journal articles, sound recordings, video and other resources relevant to business and management
British Newspapers 1600–1900	Cross-searchable interface to full-text British newspapers
Business Source Complete (also referred to as EBSCO)	Database including full-text articles from over 3,500 management, business, economics and information technology journals. Contains a wide range of trade and professional titles
(The) Conference Index	British Library database containing proceedings of all significant conferences held worldwide (over 400,000 at time of writing)
Datassential Reports	Reports, including keynote and market, covering a range of business sectors
Emerald Management Plus (EMXP)	Database providing access to over 235,000 articles from over 300 journals in management and complementary subjects
EThOS (E Thesis Online Service)	Aggregated database of all doctoral theses awarded by UK HEIs dating back to 1800. Approximately 500,000 records with free access to c. 260,000 digitised theses.
Google Scholar	Search engine for scholarly literature across disciplines. Includes citation data and some direct links to downloadable articles
Hospitality and Tourism Index	Database of articles in hospitality and tourism journals and trade magazines since 1924
IngentaConnect	Database including full text for articles in business, management, banking, finance and marketing journals
ISI Web of Knowledge	Interface to multiple databases including citation indexes for social sciences and for arts and humanities

(*continued*)

Table 3.2 (*Continued*)

Name	Coverage
Journal TOCs	Database of tables of contents (TOCs) for over 35,000 journals. Current awareness service allows journals from which there is a wish to receive future TOCs alerts to be specified
JSTOR	Database containing full-text journals, most going back to first issue (in some cases going back to the eighteenth or nineteenth century). Covers sciences, social sciences and arts and humanities. Most recent years usually not available
Mintel Reports	Database containing reports of detailed market analysis on wide range of sectors
Nexis	Database of full text of UK national and regional newspapers. Increasing international coverage and company profiles and industry reports
ProQuest One Business	Database including full text of business journals; company industry and country reports; *Wall Street Journal, The Economist* and *Financial Times*
Regional Business News	Database of full text regional business publications for the USA and Canada
Researchgate	Platform for professionals, researchers and academics to share, discover and discuss research, containing over 100 million publications
Sage Journals	Database of full text for peer-reviewed journals, textbooks and digital resources with business-related focus accessible through a business and management hub
Science Direct	Database of full text of Elsevier journals including social sciences
Social Science Citation Index	Access to current and retrospective bibliographic information, author abstracts and cited references found in over 3,400 social sciences journals covering more than 50 disciplines. Also includes items selected from approximately 3,500 of the world's leading science and technology journals
Times Digital Archive 1785–2014	Database containing complete digital editions (including photographs, illustrations and advertisements) from *The Times* national newspaper (UK)
University library single search interface	A university library's 'one stop' interface to access and search all their print and electronic collections, including subscription databases
Wiley Online Library	Database of 1,600 full-text journals including business and law
ZETOC	Database giving access to articles and citations of articles. Allows setting up of email alerts of selected journal contents pages

Books

Books and monographs are written for specific audiences. Some are aimed at the academic market, with a theoretical slant. Others, aimed at practising professionals, may be more applied in their content. The material in books is usually presented in a more ordered and accessible manner than in journals, pulling together a wider range of topics. They are, therefore, particularly useful as introductory sources to help clarify your research question(s) and objectives or the research methods you intend to use. Most academic textbooks can be accessed in electronic form using your university library's *single search interface*; and many, like this one, are also supported by websites providing additional information. However, not all books will be available electronically, some only being available as print copies. In addition, published books may contain out-of-date material even by the time they are published.

News media

News media including newspapers are a good source of topical events, developments within business and government, as well as recent statistical information such as share prices. They also sometimes discuss recent research reports (Box 3.4). Back copies of newspapers starting in the early 1990s are available online via a full-text subscription service, such as *ProQuest One Business* (Table 3.2). Current editions of newspapers are available online and in print, although there is often a charge for full online access. Items in earlier issues are more difficult to access and often only include text. An exception is the *Times Digital Archive 1785–2014* (Table 3.2) of *The Times* newspaper. You need to be careful as, notwithstanding accusations of 'fake news' news media may contain bias in their coverage, be it political, geographical or personal. Reporting can also be inaccurate, and you may not pick up any subsequent amendments or retractions. In addition, the news presented is filtered depending on events at the time, with priority given to more headline-grabbing stories.

Box 3.4 Focus on research in the news

Feeling the strain: stress and anxiety weigh on world's workers

By Emma Jacobs and Lucy Warwick-Ching

The intensity of work since the start of the pandemic pushed Sarah 'close to a breakdown'. The owner of a small UK-based business could not sleep or eat. 'The pressure to keep the business going was all-consuming, I couldn't take time off because I had hundreds of clients relying on me and looking to [me to] guide them through.'

Judging by a global survey by the *Financial Times* on work and mental health, to which more than 250 readers responded, Sarah's experience was not unique. The respondents, who came from all corners of the world, were predominantly white-collar from sectors including education, financial services and media. They spoke of the difficulties – and benefits – of new work practices and about the demands spurred by the pandemic that have affected their mental health.

The pandemic has illuminated the areas of respondents' lives – including career seniority, home environment and caring responsibilities – that have had an impact on people's ability to do their job. Surveys show that mental well-being varies across the world. Britons, according to research by YouGov, are the most likely to report that Covid has harmed their mental health (65 per cent) followed by those in Hong Kong (63 per cent), and Italy (62 per cent) – with Germans the least affected (44 per cent).

Tears, stress and feeling overwhelmed came up regularly. Some had to take time off due to burnout, others spoke of a lack of motivation, difficulty sleeping and increased drinking. '[I've] been ending the day by opening a bottle of wine [or] beer, which has quickly become a daily habit,' says John. In the US, Rachel says her runs are an outlet not just for exercise but so that her kids do not see her cry.

Yet there was also liberation for many workers who had swapped offices for their homes. They could set their own timetables, no longer tethered by the grind of the commute, eat meals with their families and exercise throughout the day. Some praised naps and the joys of watching Netflix in downtime.

Employers' responses varied. Some proved empathetic, others definitely did not. As one respondent put it, the 'workload is insurmountable and [there is] denial about the issues', so that management deem the inability to 'achieve the unachievable objectives' as a personal failing. Here is what readers told the FT in confidence about working during the pandemic. We have used first names only, where we have been given permission, and anonymised some replies ...

Source of abridged extract: Jacobs, E. and Warwick-Ching, L. (2021). 'Feeling the strain: stress and anxiety weigh on the world's workers', FT.com, 8 February. Available at https://www.ft.com/content/02d39d97-23ed-45ff-b982-7335770ae512 [Accessed 11 March 2021]. Copyright © 2021 Financial Times Limited

Reports

Reports include market analyses and research reports such as those produced by *Mintel* and *Datassential,* government reports and academic reports. Even if you are able to locate these, you may find it difficult to gain access to them because they are often not available free of charge (Section 8.3). Reports are not well indexed in the databases, and you will need to rely on specific search tools such as the *British Library Management and Business Studies Portal* (Table 3.2).

Freedom of information legislation by many governments now means a vast number of reports are now available online; for example, through the European Union's EUROPA website and the Commission's statistics website Eurostat. These and other governmental gateways and archives are listed in Table 8.2.

Conference proceedings

Conference proceedings, sometimes referred to as symposia, are often published as unique titles within journals or as books. Most conferences will have a theme that is very specific, but some have a wide-ranging overview. Proceedings are not well indexed by tertiary literature, so, as with reports, you may have to rely on specific search tools such as *The Conference Index* (Table 3.2) as well as general search engines such as Google. If you do locate and are able to obtain the proceedings for a conference on the theme of your research, you will have a wealth of relevant information. Many conferences have associated web pages providing abstracts and occasionally the full papers presented at the conference.

Theses

Theses are unique and so for a major research project can be a good source of detailed information; they will also be a good source of further references. Unfortunately, they can be difficult to locate and, when found, difficult to access as there may be only one copy at the awarding institution. Specific search tools such as *EThOS,* the *E Thesis Online Service* (Table 3.2) are offering access to an increasing number of digitised theses. Only research degrees, in particular PhDs, are covered well by these tertiary resources. Research undertaken as part of a taught master's degree (usually called a dissertation) is not covered as systematically.

3.5 Planning your literature search

It is important that you plan this search carefully to ensure that you locate relevant and up-to-date literature. This will enable you to establish what research has previously been published in your area and to relate your own research to it. All our students have found their literature search a time-consuming process, which takes far longer than expected. Fortunately, time spent planning will be repaid in time saved when searching for relevant literature. As you start to plan your search, you need to beware of information overload! One of the easiest ways to avoid this is to start the main search for your critical review with clearly defined research question(s), objectives and outline proposal (Sections 2.4 and 2.5). Before commencing your literature search, we suggest that you undertake further planning by writing down your search strategy and, if possible, discussing it with your project tutor. This should include:

- the parameters of your search;
- the search terms and phrases you intend to use;
- the online databases and search engines you intend to use;
- the criteria you intend to use to select the relevant and useful studies from all the items you find.

While it is inevitable that your search strategy will be refined as your literature search progresses, we believe that such a planned approach is important as it forces you to think carefully about your research strategy and justify, at least to yourself, why you are doing what you are doing.

Defining the parameters of your search

For most research questions and objectives, you will have a good idea of which subject matter is going to be relevant. You will, however, be less clear about the parameters within which you need to search. In particular, you need to be clear about the following (derived from Bell and Waters 2018):

- language of publication (e.g. English);
- subject area (e.g. accounting);
- business sector (e.g. manufacturing);
- geographical area (e.g. Europe);
- publication period (e.g. the last 10 years);
- literature type (e.g. peer-reviewed journals and books).

One way of starting to firm up these parameters is to re-examine your lecture notes and course textbooks in the area of your research question. While re-examining these, we

suggest you make a note of subjects that appear most pertinent to your research question and the names of relevant authors. These will be helpful when generating possible search terms and phrases later.

For example, if your research was on the adoption of the United Nations sustainable development goals by public sector organisations, you might identify the subject area as sustainable development and public sector. Implicit in this is the need to think broadly. A frequent comment we hear from students who have attempted a literature search is 'there's nothing written on my research topic'. This is usually because they have identified one or more of their parameters too narrowly or chosen their search terms poorly. We therefore recommend that if you encounter this problem you broaden one or more of your parameters to include material that your narrower search would not have located (see Box 3.7).

Generating your search terms

It is important at this stage to read both articles by key authors and recent review articles in the area of your research. This will help you to define your subject matter and to suggest appropriate search terms and phrases. Recent review articles in your research area are often helpful here, as they discuss the current state of research for a particular topic and can help you to refine your search terms. In addition, they will probably contain references to other work that is pertinent to your research question(s) and objectives (Box 3.5). If you are unsure about review articles, your project tutor should be able to point you in the right direction. Another potentially useful source of references are dissertations and theses in your university's library.

After re-reading your lecture notes and textbooks and undertaking this limited reading, you will have a list of subjects that appear relevant to your research project. You now need to define precisely which search terms are relevant to your research.

The identification of search terms is the most important part of planning your search for relevant literature (Bell and Waters 2018). **Search terms** are the basic terms that describe your research question(s) and objectives, and will be used to search the tertiary literature.



Box 3.5 Focus on student research

Generating search terms

Han's research question was, 'How do the actual management requirements of a school pupil record administration system differ from those suggested by the literature?' She brainstormed this question with her peer group, all of whom were teachers in Singapore. The resulting list included the following search terms and phrases:

schools, pupil records, administration, user requirements, computer, management information system, access, legislation, information, database, security, UK, Singapore, theories

The group evaluated these and others. As a result, the following search terms (and phrases) were selected:

pupil records, management information system, computer, database, user requirement

Online dictionaries and encyclopaedias were used subsequently to add to the choice of search terms:

student record, MIS, security

Han made a note of these prior to using them in various combinations to search her university library's single search interface.

Search terms (which can include authors' family names identified in the examination of your lecture notes and course textbooks) can be identified using one or a number of different techniques in combination. Those found most useful by our students include:

Discussion

We believe you should be taking every opportunity to discuss your research. In discussing your work with others, whether online or face-to-face, you will be sharing your ideas, getting feedback and obtaining new ideas and approaches. This process will help you to refine and clarify your topic.

Brainstorming

Brainstorming has already been outlined as a technique for helping you to develop your research question (Section 2.3). However, it is also helpful for generating search terms. Either individually or as part of a group, you note all the words and short phrases that come to mind on your research topic (Box 3.5). These are then evaluated and search terms (and phrases) selected.

Initial reading, dictionaries, encyclopaedias, handbooks and thesauruses

To produce the most relevant search terms you may need to build on your brainstorming session with support materials such as dictionaries, encyclopaedias, handbooks and thesauruses, both general and subject specific. These are also good starting points for new topics with which you may be unfamiliar and for related subject areas. Initial reading, particularly of recent review articles, may also be of help here. Project tutors, colleagues and librarians can also be useful sources of ideas.

It is also possible to obtain definitions via the Internet. Google offers a 'define' search option (by typing 'Define:[enter term]') that provides links to websites providing definitions. Definitions are also offered in online encyclopaedias such as Wikipedia. These are often available in multiple languages and, although registered users are allowed to edit the entries, inappropriate changes are usually removed quickly. While entries tend to become more comprehensive and balanced as contributors add to and revise them, Wikipedia (2021) 'makes no guarantee of validity'. However, while online encyclopaedias such as Wikipedia may be useful for a quick reference or in helping to define keywords, your university will almost certainly expect you to justify the definitions in your research project using refereed journal articles or textbooks.

Relevance trees

Relevance trees provide a useful method of bringing some form of structure to your literature search and of guiding your search process (Sharp et al. 2002). They look similar to an organisation chart and are a hierarchical 'graph-like' arrangement of headings and subheadings (Box 3.6). These headings and subheadings describe your research question(s) and objectives and may be terms (including authors' names) with which you can search. Relevance trees are often constructed after brainstorming and can help you decide:

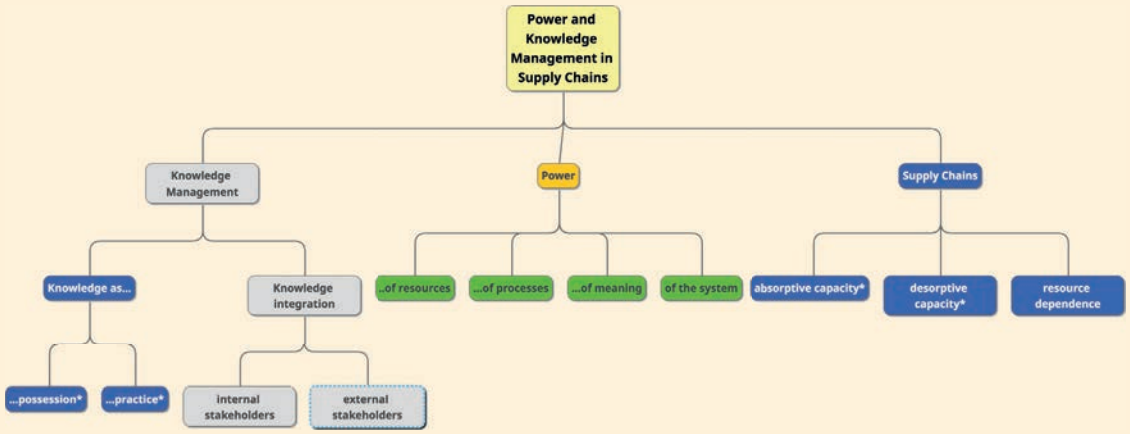
- those search terms that are most relevant to your research question(s) and objectives;
- those areas you will search first and which your search will use later;
- the areas that are more important – these tend to have more branches.

Box 3.6 Focus on student research

Using a relevance tree

Simone's research question was 'How does power facilitate knowledge integration in supply chains?' After brainstorming her question, she decided to construct a relevance tree on her tablet using the search terms and phrases that had been generated.

Using her relevance tree, Simone identified those areas that she needed to search immediately (in blue) and those that she particularly needed to focus on (starred*).



To construct a relevance tree:

1. Start with your research question or an objective at the top level.
2. Identify two or more subject areas that you think are important.
3. Further subdivide each major subject area into sub-areas that you think are of relevance.
4. Further divide the sub-areas into more precise sub-areas that you think are of relevance.
5. Identify those areas that you need to search immediately and those that you particularly need to focus on. Your project tutor will be of particular help here.
6. As your reading and reviewing progress, add new areas to your relevance tree.

Mind mapping tools such as SimpleMind (2021) and software such as MindGenius (2021) can be used to help generate relevance trees. Many also allow you to attach notes to your relevance tree and can help generate an initial structure for your literature review.

3.6 Conducting your literature search

Your literature search will probably be conducted using a variety of approaches:

- searching online databases;
- obtaining relevant literature referenced in books and journal articles you have already read;
- browsing and scanning secondary literature in your library;
- general online searching;
- institutional repositories and social networking platforms.

Eventually, it is likely you will be using a variety of these in combination. However, we suggest that you start your search by obtaining relevant literature that has been referenced in books and articles you have already read. Although books are unlikely to give adequate up-to-date coverage of your research question, they provide a useful starting point and usually contain some references to further reading. Reading these will enable you to refine your research question(s), objectives and the associated search terms prior to searching using tertiary literature sources. It will also help you to see more clearly how your research relates to previous research and will provide fresh insights.

Searching using databases

It is very tempting with easy access to the Internet to start your literature search with a general search engine such as Google or Bing. While these will retrieve some useful information, they must be treated with care. Your project report is expected to be an academic piece of work and hence must use academic sources. Therefore, it is essential that you use online literature sources that provide access to academic literature. These consist of three types of online databases and are listed in order of likely importance to your search:

1. **Full-text (online) databases** that index and provide abstracts and full-text of articles from a range of journals (and sometimes books, chapters from books, reports, theses and conferences).
2. **Abstracts** that only include an index of the abstracts of articles from a range of journals (and sometimes books, chapters from books, reports, theses and conferences), hence the name abstract.
3. **Indexes** that, as the name suggests, only index articles from a range of journals (and sometimes books, chapters from books, reports, theses and conferences).

Within all of these, the information provided will be sufficient to locate the item – for example, for journal articles:

- author or authors of the article;
- date of publication;
- title of the article;
- title of the journal;
- volume (and part number) of the journal issue;
- page numbers of the article.

Most searches will be undertaken to find articles using user defined search terms or an author's name. Occasionally, you may wish to search by finding those authors who have referenced (cited) an article after it has been published. A citation index enables you to do this as it lists by author the other authors who have cited that author's works subsequent to their publication. Alternatively, if you are using the specialised search engine Google Scholar you can find out who has cited a particular article by clicking on 'cited by'. The article's abstract will be useful in helping you to assess the content and relevance of an article to your research before obtaining a copy. You should beware of using abstracts as a substitute for the full article, as a source of information for your research. They contain only a summary of the article and are likely to exclude much of relevance. Full-text databases usually allow both the searching and retrieval of the full text, principally for journal articles; the articles being retrieved in portable document file (PDF) format. These are read using software such as Adobe Reader, which can be downloaded free of charge.

Your access to the majority of full-text databases will be paid for by a subscription from your university (Table 3.2). Universities provide direct access to these databases

through their library web pages. Many also provide database access through their **library single search interface** allowing you to search both their collections of full text articles, and online public access catalogue (OPAC) of print and digital books and other materials together. There are, however, some pay-as-you-use databases, where the cost of the search is passed on to the user. Specialist search engines (such as Google Scholar) are often free but offer only limited access to the full text (Table 3.4). While many databases are intuitive to use, it is still advisable to undertake your university's online training prior to your search to find out about the specific features available. It is also vital that you plan and prepare your search in advance so your time is not wasted.

Virtually all universities' library OPACs are accessible online. These provide a very useful means of locating resources. If you identify useful collections of books and journals, it is possible to make use of other university libraries during your vacations. Within the UK, the SCONUL Vacation Access Scheme allows students to use books and journals at the 170 institutions which participate in the scheme.[1] In addition, over 70 research libraries in the UK and Ireland (including the British Library, Oxford and Cambridge Universities and the National Libraries of Scotland and Wales) have also made their catalogues available online. These can be accessed through COPAC, the National Academic and Specialist Library Catalogue.[2]

To ensure maximum coverage in your search, you need to use all appropriate online databases. One mistake many people make is to restrict their searches to their university library's single search interface or Google Scholar rather than using a variety of full text databases. Full text databases' search facilities are usually far more sophisticated and, as each differs both geographically and types of journal included, using a selection ensures a wide coverage of available literature. Some of those more frequently used are outlined in Table 3.2. However, new databases and interfaces are being developed all the time, so it is worth establishing which are available at your university.

Once your search terms have been identified, searching using databases is a relatively straightforward process. You need to:

1. Make a list of the search terms that describe your research question(s) and objectives.
2. Search appropriate online databases.
3. Note precise details, including the search strings used, of the actual searches you have undertaken for each database.
4. Note the full reference of each item found; this can normally be done by importing the references into software for managing bibliographies, such as Endnote™ or Reference Manager™ or research tools such as 'Mendeley' or 'Zotero'.
5. Wherever possible, import the article into your bibliography or research tool or, alternatively, download it in PDF format and save it on your USB storage device or smartphone using the author, date and a brief description as a filename. This will help you locate it later. For example, an article by Mark and colleagues on gaining access to undertake multi-organisation surveys might be saved using the filename: Saunders[2017] access_surveys.pdf.

Tranfield et al. (2003) emphasise the importance of reporting your literature search strategy in sufficient detail to ensure that your search could be replicated (see Box 3.8). Your review will be based on the subset of those items found which you consider are relevant.

Unlike university library single search interfaces, most full-text databases allow both full-text and abstract only searches using natural language where you decide on the word or phrase combinations for search terms. This means you can search the complete text of an article using your search terms. All relevant results are returned, usually after applying

[1]Details of these can be found at: https://www.sconul.ac.uk/

[2]The Internet address for COPAC is https://copac.ac.uk/

a process of **lemmatisation** to your search query. This removes all inflectional endings and takes categories and inflections into account to reduce each word used as a search term to its base or 'lemma'. However, some databases rely on or also offer the option to search using **stemming**. This cuts off a word's ending in order to determine the word stem. Despite using these tools, your searches may still be unsuccessful. The most frequent causes of failure are summarised in Box 3.7 as a checklist.



Box 3.7 Checklist

Minimising problems with your database search

- ✔ Is the spelling incorrect? Behaviour is spelt with a 'u' in the UK but without in the USA.
- ✔ Is the language incorrect? Chemists in the UK but drug stores in the USA.
- ✔ Are you using incorrect terminology? In recent years some terms have been replaced by others, such as 'redundancy' being replaced by 'downsizing'.
- ✔ Are you using recognised acronyms and abbreviations? For example, UK for United Kingdom or BA instead of British Airways.
- ✔ Are you avoiding jargon and using accepted terminology? For example, out-of-the-box thinking rather than creativity.
- ✔ Are you searching over a sensible publication period? For example, the last 15 years rather than the last five years.
- ✔ Are you searching the most suitable type of literature for your research project? For example, peer-reviewed (refereed) journal articles rather than all articles.



Box 3.8 Focus on management research

Framing the system that sustains toxic leadership through followers' continued support

In their recent article in the *International Journal of Management Reviews,* Mergen and Ozbilgin (2021) use a narrative literature review to address the allure of toxic leaders and illustrate the processes and mechanisms that motivate these leaders' followers to remain. Drawing on Bourdieu's concept of illusio, whereby individuals believe that the game they engage in is significant and the benefits desirable, they argue that a better understanding of these followers is needed to address the negative consequences of toxic leadership.

Before starting their narrative review, the authors were aware of key texts and theories of both toxic leadership and Bourdieusian illusio. They also had a well-defined research purpose: to explain why individuals may become and remain followers of toxic leaders. Their narrative review process started using a small number of articles and books to identify key authors and other articles as starting points in each of the different literatures on which they were drawing. Alongside combing through recent articles in relevant journals they also searched Web of Science and Google Scholar for combinations of search terms. These included 'toxic, destructive leaders', 'pseudo-transformational leaders', 'followers', 'illusion', 'personal uncertainty' and 'ethical decision making'. For each search they read abstracts and reviewed those papers considered relevant in detail.

Noting the literature on followership is well-developed they found relevant articles on toxic followers necessitating their use of toxic leadership articles to understand how followers were framed in the literature. Bourdieusian illusio was therefore used as the main 'umbrella' construct in their building of a conceptual model.

Table 3.3 Search connectors

Connector	Purpose	Example	Outcome
AND	Narrows search	Recruitment AND interviewing AND skills	Only articles containing all three search terms selected
OR	Widens search	Recruitment OR selection	Articles with at least one search term selected
NOT	Excludes terms from search	Recruitment NOT selection	Selects articles containing the search term 'recruitment' that do not contain the search term 'selection'

Searches normally use a combination of search terms linked using **Boolean logic**. These are known as **search strings** and enable you to combine, limit or widen the variety of items found using 'link terms' (Table 3.3). Initially, it may be useful also to limit your search to peer-reviewed journal articles for which the full text is available. It may also be valuable to narrow your search to specific years, especially if you are finding a wealth of items and need to concentrate on the most up-to-date. By contrast, searching by author allows you to broaden your search to find other work by known researchers in your area.

There are, however, problems with searching the full text. In particular, the context of a search term may be inappropriate, leading to retrieval of numerous irrelevant articles and information overload. Fortunately, for most databases you can also search one or more specified fields such as the abstract, author or title. Usually, searching the abstract results in fewer irrelevant articles, although, inevitably, you may not find some relevant ones either! Specifying other fields, for example the author, will be useful if you wish to find articles by a key author in your subject area.

Browsing and scanning

Any search will find only some of the relevant literature. You will therefore also need to browse and scan the literature. New publications such as journal articles are unlikely to be indexed immediately in databases, so you will need to be **browsing** the relevant journals' web pages to gain an idea of their most recent and 'advance online' content. These 'early view' articles are the final version (except for their volume numbering and pagination) and are usually made available through the specific journal's website some months ahead of being included in a specific volume/issue. In contrast, **scanning**, also known as **snowballing** (Hiebl 2021), will involve you going through the reference list of already identified publications to identify references to additional potentially relevant publications (Box 3.8). Scanning is sometimes known as going backwards as it only identifies items that were published earlier. It is particularly important that you browse and scan trade and professional journals, as these are less likely to be covered by the online databases.

To make browsing and scanning easier you should:

- identify when those journals that are the most relevant are published and, where possible, ensure you receive email 'alerts' of their tables of contents (TOCs);
- identify those professional journals that are most relevant and regularly browse them;
- scan new book reviews in journals and newspapers;
- scan publishers' new book catalogues where available;
- discuss your research with your project tutor and librarians, who may be aware of other relevant literature.

Websites of bookshops such as Hive and Amazon can be searched by author, title and subject, and may have reviews attached. Some bookseller websites (and Google Books) have a facility whereby you can view selected pages from the book. However, as when using electronic indexes and abstracts, it is important that you keep full details of the literature you have scanned and browsed (Box 3.9). As well as enabling you to outline the method you used for your literature review, it will also help prevent you repeating searches you have already undertaken.

General searching

When using other search tools, we recommend you keep full details of the searches you have undertaken, making a note of:

- the search tool used;
- the precise search undertaken;
- the date when the search was undertaken;
- the total number of items retrieved.

Search tools, often referred to as **search engines**, are probably the most important method of online searching for your literature review as they will enable you to locate most current and up-to-date items. Although normally accessed through home pages, each search tool will have its own address (Table 3.4). Search tools can be divided into four distinct categories (Table 3.4):

- general search engines;
- metasearch engines;
- specialised search engines and information gateways;
- subject directories.

Most search engines index every separate document. In contrast, subject directories index only the 'most important' online documents. Therefore, if you are using a clear term to search for an unknown vaguely described document, use a search engine. If you are looking for a document about a particular topic, use a subject directory.



Box 3.9 Focus on student research

Searching using databases

Matthew described his research project using the search terms 'marketing' and 'non profit'. Unfortunately, he encountered problems when carrying out his search using one of the online databases of full text and abstracts for business, management and economics journals to which his university subscribed.

When he entered the search term 'marketing', he retrieved references to over 1,288,000 items, many of which were in trade magazines. Entering the term 'non profit' on its own retrieved fewer references, only 48,000! He was unsure how to combine his search terms into search strings to make his search more specific. Full-text versions were not available for many of the most recent items retrieved.

After discussing the problem, the librarian showed Matthew how to use the advanced search option of the online database. Using this, Matthew first searched using the terms 'marketing' AND 'non profit' combined as a search string. This still resulted in over 3,700 items being highlighted. He then refined his search further by limiting it to the collection of scholarly (peer-reviewed) journals. This resulted in over 1,300 items being



Box 3.9 Focus on student research (*continued*)

Searching using databases

retrieved. He therefore decided to limit his search to the abstract field rather than the full text. This resulted in 263 items being retrieved, some of which (including the first) did not appear relevant to his research.

He then copied the references for those items (articles) that appeared relevant onto his smartphone. As Matthew scrolled through these, he noted that some of them had direct links to copies of the full text stored as a PDF file. For many of the others, the librarian informed him that he could access the full text using different online databases. However, he still needed to assess each article's relevance to his research before obtaining full copies.

Matthew made a note of the details of his search:

Database:	Business Source Premier
Collection:	Peer-reviewed journals
Dates:	1951 to 2021
Search:	marketing AND non profit
Fields searched:	Abstract
Date of search:	25 March 2021
Total items retrieved:	263

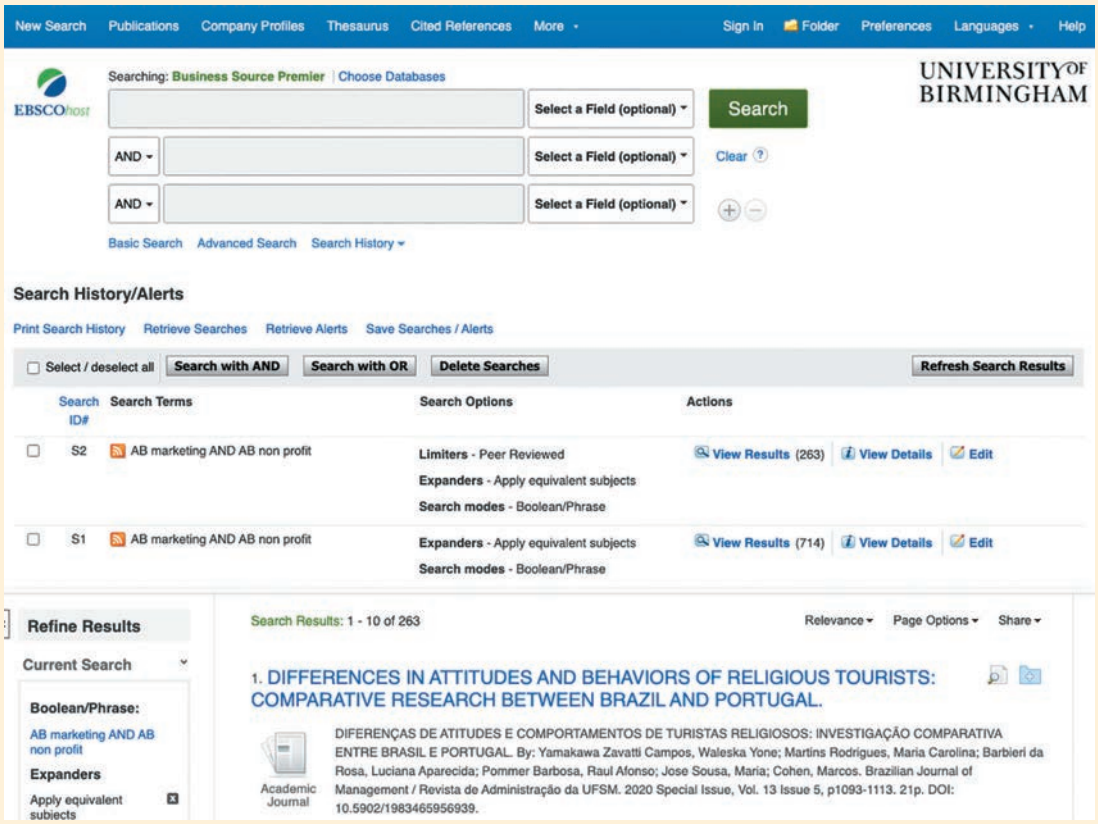


Table 3.4 Selected online search tools and their coverage

Name	Internet address	Comment
General search engines		
Bing	www.bing.com	Access to billions of web pages, can link to Facebook
Google	www.google.com	Access to billions of web pages
Google UK	www.google.co.uk	UK (Country)-based Google – optimised to show country results
Specialised search engines		
Google Scholar	www.scholar.google.com	Searches scholarly literature allowing you to locate and sometimes download the complete document, often from an institutional repository
UK government	www.gov.uk	Searches central and local government websites and government agencies
Information gateways		
Publishers' catalogues homepage	www.lights.ca	Searchable links to major publishers' websites, listed alphabetically by country
Subject directories		
Dotdash	www.dotdash.com	Organised by subjects ('brands'), offers numerous guides

General search engines such as Google and Bing normally use search terms and Boolean logic (Table 3.3) or a phrase. Each search engine indexes and searches automatically, usually finding a very large number of sites (Box 3.10). As people have not evaluated these sites, many are inappropriate or unreliable. As no two general search engines search in precisely the same way, it is advisable (and often necessary) to use more than one. In contrast, metasearch engines allow you to search using a selection of search engines at the same time, using the same interface. This makes searching easier, and the search can be faster. Unfortunately, it is less easy to control the sites that are retrieved. Consequently, metasearch engines often generate more inappropriate or unreliable sites than general search engines.

Specialised search engines cater for specific subject areas. For example, Google Scholar searches scholarly literature across many disciplines using sources such as articles, theses, books and abstracts from academic publishers, professional bodies, universities and websites, allowing you to locate the complete document. Documents are subsequently ranked on a combination of factors including how often it has been cited, where it was published and by whom it was written. Of particular use are two links: the 'cited by' link to more recently published articles which have referenced this document; and the direct link to open access articles stored on institutional repositories and on social networking

sites (discussed next). To use specialised search engines, it is necessary to define your general subject area prior to your search. Information gateways also require you to define your subject area. Information gateways are often compiled by staff from departments in academic institutions. Although the number of websites obtained is fewer, they can be far more relevant, as each site is evaluated prior to being added to the gateway.

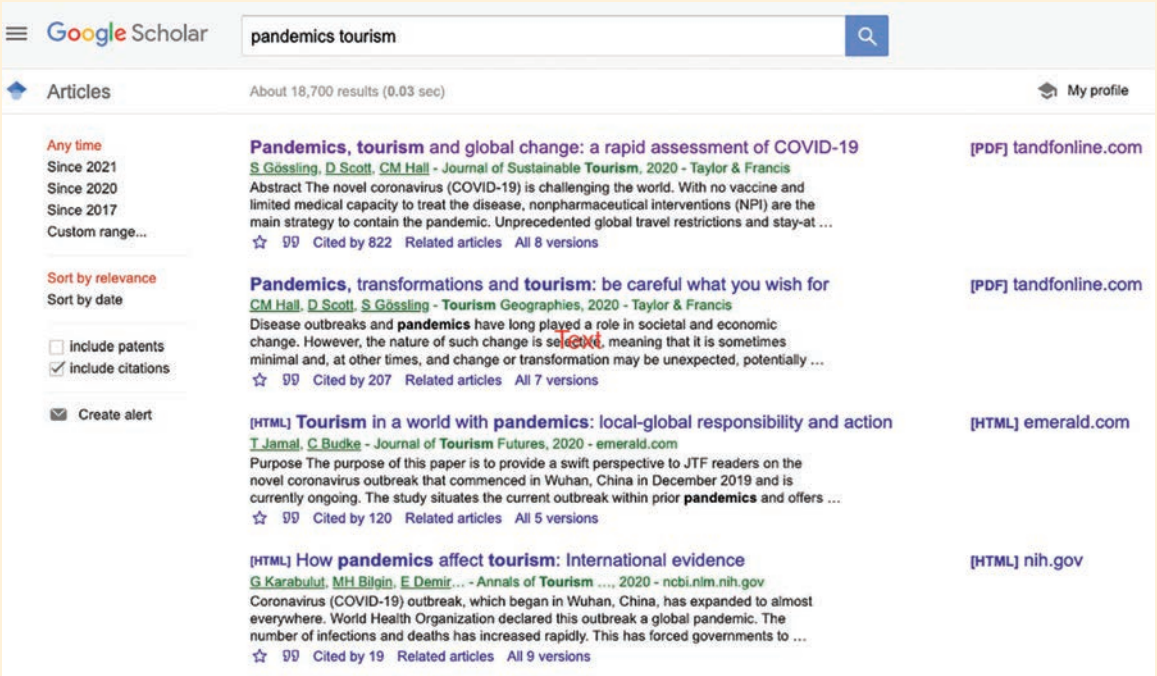
Subject directories are searchable catalogues of sites collected and organised by humans. The sites are categorised into subject areas and are useful for searching for

Box 3.10 Focus on student research

Undertaking an online search using a specialist search engine

Kay's research question was reasonably defined, if somewhat broad. She wanted to look at the impact of pandemics, in particular Covid-19, on tourism. As part of her search strategy she decided, alongside the academic databases of business and management journals, to search the Internet using a specialised search engine – Google Scholar. Her first search term 'pandemics tourism' revealed that there were over 18,700 scholarly publications and displayed the first few. Of these, the first appeared to be potentially useful as it focussed on the disruption caused by Covid-19, comparing this to previous epidemics and pandemics.

Kay clicked on the PDF link and, as it was an 'open access' article was able to download it without charge from the publisher's website. She then returned to Google Scholar and clicked on 'Cited by 822'. The first screen revealed a few of the 822 publications that had cited that paper since it had been published. As many could be downloaded as PDF files, she downloaded, and saved those publications that seemed relevant on her smartphone. Kay then made a note of the authors listed on the page, so she could search for them, using her university's online databases.



broad topics. As people normally compile them, their content has been partly censored and evaluated. Consequently, the number of sites retrieved is fewer, but they usually provide material that is more appropriate (Table 3.4).

Institutional repositories and social networking platforms

Many universities now expect their academics to deposit digital full-text copies of their publications, particularly journal articles, in their **institutional repository**. This is an open access collection of the university staff's research outputs from which full-text items can be downloaded. Increasingly academics (including Mark!) are also uploading pre-publication copies of their journal articles, book chapters and conference papers to social networking platforms such as Academia.edu and ResearchGate. Providing you know the author's name (and their university), and the publication has been uploaded, you can often access pre-publication versions through these resources free of charge. Such institutional repositories and social networking sites are useful if your university does not subscribe to the online database of full-text articles in which their publications are stored, particularly as uploaded copies can often be found using specialised search engines such as Google Scholar (Table 3.4, Box 3.10).

Obtaining the literature

As outlined earlier, searches using online databases (Table 3.2) and search tools (Table 3.4) will provide you with details of what literature is available and where to locate it, in many cases providing a hyperlink to an electronic copy. We emphasise again, you should, whenever possible, download the electronic copy in PDF format and save it on your USB storage device or smartphone. However, where there is no hyperlink, the next stage (Figure 3.1) is to obtain the remaining items. To do this you need to:

1. Check your library online catalogue or single search interface to find out whether you can access the appropriate publications.
2. For those publications that can be accessed through your library, note their location and: find the publication and scan it to discover whether it is likely to be worth reading thoroughly – for articles it is often possible to make a reasonable assessment of their utility using the abstract (Box 3.11).
3. For those items not accessible through your library, it may still be possible to obtain them online, either through institutional repositories or, for books that are no longer copyright, through Google Books.
4. Alternatively you may be able:
   - **i** to borrow the item from another library using the **inter-library loan** service. This is not a free service so make sure it is not available from any other source and you really need it; or
   - **ii** visit a library where they are held as 'reference only' copies. The British Library in London, for example, has one of the most extensive collection of books, journals, market research reports, trade literature, company annual reports, research reports, doctoral theses and conference proceedings in the world.

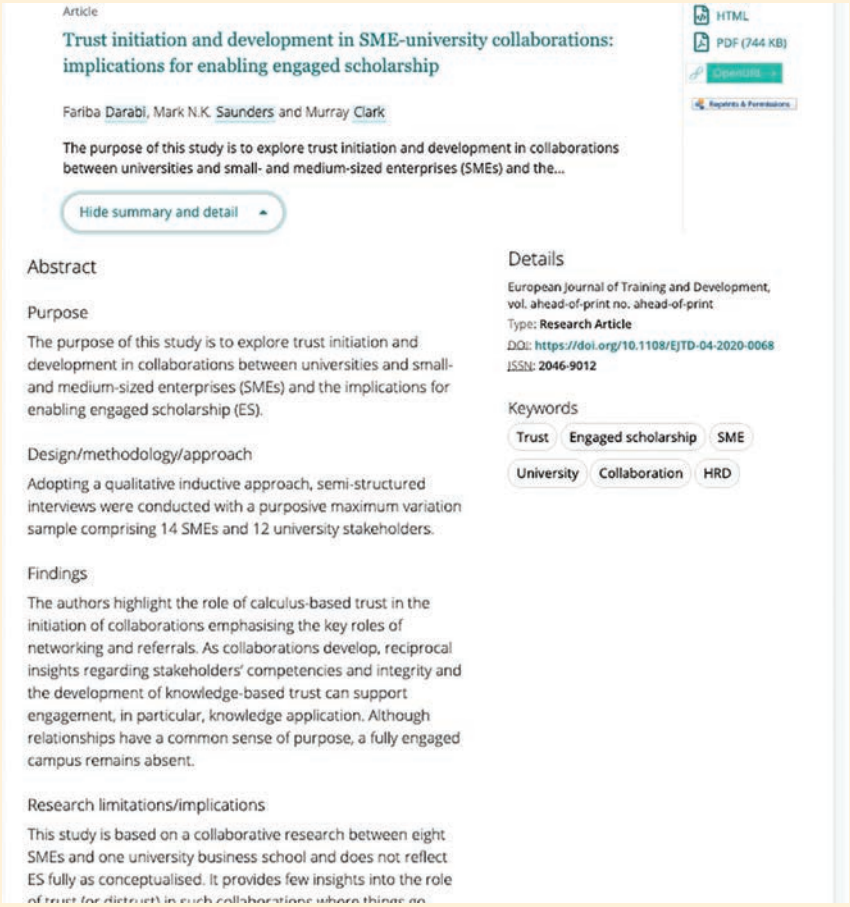
Box 3.11 Focus on student research

Assessing the utility of an article using the abstract

Jana's research project was about how companies collaborate with each other. In a search using the Emerald Insight online database she had found a peer-reviewed article in the *European Journal of Training and Development* by Darabi, Saunders and Clark (2020) that she considered might be useful. She decided to read the abstract online to check.

The abstract revealed that the **Purpose** of the article was to explore trust initiation and development in collaborations between universities and small and medium sized enterprises (SMEs). More details regarding this were given in the **findings** section of the abstract emphasising the focus of the paper on trust and engaged scholarship. The **design/methodology/approach** indicated that the research had been undertaken with 14 SMEs and 12 university stakeholders, qualitative data being collected using semi-structured interviews. Subsequent sections emphasised further the focus on engaged scholarship and trust. Jana wondered if engaged scholarship might be a good aspect to focus on in her research.

Based on this information, Jana decided the article was potentially useful for her research project, so she downloaded it and saved an electronic copy in PDF format.



Article

Trust initiation and development in SME-university collaborations: implications for enabling engaged scholarship

HTML

PDF (744 KB)

Fariba Darabi, Mark N.K. Saunders and Murray Clark

The purpose of this study is to explore trust initiation and development in collaborations between universities and small- and medium-sized enterprises (SMEs) and the...

Hide summary and detail

Abstract

Purpose

The purpose of this study is to explore trust initiation and development in collaborations between universities and small- and medium-sized enterprises (SMEs) and the implications for enabling engaged scholarship (ES).

Design/methodology/approach

Adopting a qualitative inductive approach, semi-structured interviews were conducted with a purposive maximum variation sample comprising 14 SMEs and 12 university stakeholders.

Findings

The authors highlight the role of calculus-based trust in the initiation of collaborations emphasising the key roles of networking and referrals. As collaborations develop, reciprocal insights regarding stakeholders' competencies and integrity and the development of knowledge-based trust can support engagement, in particular, knowledge application. Although relationships have a common sense of purpose, a fully engaged campus remains absent.

Research limitations/implications

This study is based on a collaborative research between eight SMEs and one university business school and does not reflect ES fully as conceptualised. It provides few insights into the role

Details

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Type: Research Article

DOI: https://doi.org/10.1108/EJTD-04-2020-0068

ISSN: 2046-9012

Keywords

Trust | Engaged scholarship | SME | University | Collaboration | HRD

Source: Darabi et al. (2020). Copyright © 2020 Emerald Group publishing (https://www.emerald.com/insight/content/doi/10.1108/EJTD-04-2020-0068/full/html?skipTracking=true). Reproduced by permission of the publisher.

3.7 Reading critically and evaluating the literature

Adopting a critical perspective in your reading

Harvard College Library (2020) provides its students with a useful list of strategies thinking intensive reading. These include:

Previewing: developing a set of expectations about the scope and aim of the item before you start reading in detail to establish how it may inform your literature search.

Annotating: conducting a dialogue with yourself, the author and the issues and ideas at stake and marking those aspects that seem important in the margins of the text using words and phrases rather than just highlighting or underlining. This is crucial as a reason for highlighting in a bright colour is often difficult to remember later without notes as to why.

Outlining, summarising and analysing: the best way to determine that you've really got the point is to be able to state it in your own words. Outlining the argument of an item is a version of annotating, and can be done quite informally in the margins of the text. Summarising does the same thing, making the connections between ideas explicit; analysing incorporates an evaluation to your summary. Analysing comprises your reflections on the effectiveness or otherwise of the arguments made.

Looking for repetitions and patterns: using these, alongside the way authors use language, to indicate what is important.

Contextualising: looking at what you have read and acknowledging how it is framed by other work.

Comparing and contrasting: asking yourself how your thinking has been altered by this reading and how it has affected your response to the issues and themes you have already considered.

Wallace and Wray (2016) recommend the use of **review questions**. These are specific questions you ask when reading, which will be linked either directly or indirectly to your research question. So you may, for example, address a piece of reading with the view to it answering the question: 'What does research suggest are the main reasons why customers are likely to change car insurance provider?'

The word 'critical' has appeared in this chapter a number of times so far. It is vital in your reading of the literature that a critical stance should be taken. So what is meant by critical reading? Wallace and Wray (2016: 8) sum this up rather succinctly by saying that critical skills 'can be boiled down to the capacity to evaluate what you read and the capacity to relate what you read to other information'.

More specifically, Wallace and Wray (2016) advocate the use of five critical questions to employ in critical reading. These are:

1. Why am I reading this? (The authors argue that this is where the review question is particularly valuable. It acts as a focusing device and ensures that you stick to the purpose of the reading and do not get sidetracked too much by the author's agenda.)
2. What is the author trying to do in writing this? (The answer to this may assist you in deciding how valuable the writing may be for your purposes.)
3. What is the writer saying that is relevant to what I want to find out?
4. How convincing is what the author is saying? (In particular, is the argument based on a conclusion which is justified by the evidence?)
5. What use can I make of the reading?

Evaluating the literature

A question frequently asked by our students is, 'How do I know what I'm reading is relevant?' Two further questions often asked by our students are, 'How do I assess the credibility of what I read?' and 'How do I know when I've read enough?' All of these are concerned with the process of evaluation. They involve defining the scope of your review and assessing the relevance and credibility of the items that you have obtained in helping you to answer your research question(s) and meet your objectives.

Assessing relevance

Assessing the relevance of the literature you have collected to your research depends on your research question(s) and objectives. Remember that you are looking for relevance, not critically assessing the ideas contained within. When doing this, it helps to have thought about and made a note of the criteria for inclusion and exclusion prior to assessing each item of literature. Box 3.11 also provides some help here.

You should, of course, try to read all the literature that is most closely related to your research question(s) and objectives. For some research questions, particularly for new research areas, there is unlikely to be much closely related literature and so you will have to review more broadly. For research questions where research has been going on for some years, you may be able to focus on more closely related literature.

Remember to make notes about the relevance (and credibility) of each item as you read it and the reasons why you came to your conclusion. You may need to include your evaluation as part of your critical review.

Assessing credibility

Assessing the credibility of the literature you have collected is concerned with the quality of the research that has been undertaken. As such it is concerned with issues such as methodological rigour, theory robustness and the quality of the reasoning or arguments. For example, you need to beware of managerial autobiographies, where a successful entrepreneur's or managing director's work experiences are presented as the way to achieve business success (Fisher 2010), and articles in trade magazines. The knowledge presented in such books and articles may well be subjective rather than based upon systematic research.

For refereed journal articles (and some book chapters), the review process means that peers have assessed the quality of research and suggested amendments before they are published. This means the research is likely to have been undertaken with methodological rigour, have used theory appropriately and been argued cogently. However, it is still important to assess the value yourself in terms of possible bias, methodological omissions and precision (Box 3.12).

It is worth noting that, within business and management and other subjects, lists exist that rank peer-reviewed journals according to their quality; higher rankings indicating better quality journals. The fortunes of academics and their business schools depend on publishing in such highly ranked journals. Harzing (2020) provides a regularly updated Journal Quality List for business and management, which includes lists from 12 different sources. While there is little doubt that journals ranked highly on lists are quality journals and are more likely to contain quality articles, this does not mean that every single paper within them will be of the same high quality. It also does not mean that articles in lower-ranked journals are of little value. Consequently, although journal ranking lists can provide a broad indicator of the quality of research, they are not a substitute for reading the article and making your own assessment of the quality of the research in relation to your research question(s) and objectives. The checklist in Box 3.12 will help in this assessment.

Box 3.12 Checklist

Evaluating the relevance, value and sufficiency of literature to your research

Relevance

- ✔ How recent is the item?
- ✔ Is the item likely to have been superseded?
- ✔ Are the research questions or objectives sufficiently close to your own to make it relevant to your own research?
- ✔ Is the context sufficiently different to make it marginal to your research question(s) and objectives?
- ✔ Have you seen references to this item (or its author) in other items that were useful?
- ✔ Does the item support or contradict your arguments? For either it will probably be worth reading!

Credibility

- ✔ Has the item been subject to a reviewing process prior to publication?
- ✔ Does the item appear to be biased? For example, does it use an illogical argument, emotionally toned words or appear to choose only those cases that support the point being made? Even if it is, it may still be relevant to your critical review.
- ✔ What are the methodological omissions within the work (e.g. sample selection, data collection, data analysis)? Even if there are many it still may be of relevance.
- ✔ Is the precision sufficient? Even if it is imprecise it may be the only item you can find and so still of relevance!
- ✔ Does the item provide guidance for future research?

Sufficiency

- ✔ As I read new items, do I recognise the authors and the ideas from other items I have already read?
- ✔ Have I read the work by those acknowledged by others as key researchers in my research area?
- ✔ Can I critically discuss the academic context of my research with confidence?
- ✔ Have I read sufficient items to satisfy the assessment criteria for my project report?

Sources: Authors' experience; Bell and Waters (2018); Colquitt (2013); Fisher (2010); Jankowicz (2005)

Assessing sufficiency

Your assessment of whether you have read a sufficient amount is even more complex. It is impossible to read everything, as you would never start to write your critical review, let alone your project report. Yet you need to be sure that your critical review discusses relevant research that has already been undertaken and that you have positioned your research project in the wider context, citing the main writers in the field (Section 3.2). One clue that you have achieved this is when further searches provide mainly references to items you have already read (Box 3.12). You also need to check what constitutes an acceptable amount of reading, in terms of both quality and quantity, with your project tutor.

3.8 Note-taking and referencing

The literature search, as you will now be aware, is a vital part of your research project, in which you will invest a great deal of time and effort. As you read each item, you need to ask yourself how it contributes to your research question(s) and objectives and to make notes with this focus (Bell and Waters 2018). When doing this, many students download

and save copies of articles or photocopy or scan pages from books to ensure that they have all the material. We believe that, even if you save, print or photocopy, you still need to make notes.

The process of note-making will help you to think through the ideas in the literature in relation to your research. When making your notes, make sure you always use quotation marks and note the page number if you are copying the text exactly. This will ensure you know it is a direct quotation when you begin to write your project report and so help you avoid committing plagiarism (Section 3.11). The Harvard College Library (2020) suggests that you should get into the habit of hearing yourself ask questions of your reading and makes notes as you read. Their advice is summarised in Box 3.13.

In addition to making notes, it is helpful to record the:

- bibliographic details;
- brief summary of content;
- supplementary information.

Bibliographic software such as Reference Manager™, EndNote™ or research tools such as 'Mendeley' or 'Zotero' provide a powerful and flexible method for recording the literature and automatically generating references in the required style and, for some, can send suggestions for further reading based on the references you have uploaded. In addition, there are online bibliography generators such as 'Cite This For Me' that can help you create a bibliography or reference list in the prescribed format. Many specialist search engines, such as Google Scholar, allow references (and in some case full text) to be exported directly into such software and tools. Where this is not the case, recording can seem very tedious, but it must be done. We have seen many students frantically repeating searches for items that are crucial to their research because they failed to record all the necessary details in their database of references.



Box 3.13 Checklist

Making notes when reading

- ✔ Don't use a highlighter pen. Highlighting can actually distract from the business of learning and dilute your comprehension. It only seems like an active reading strategy; in actual fact, it can lull you into a dangerous passivity.
- ✔ Mark up the margins of the text with words: ideas that occur to you, notes about things that seem important to you, reminders of how issues in a text may connect with your research questions and objectives. If you are reading a PDF copy on screen, use the 'sticky notes' feature of Adobe Reader®. This kind of interaction keeps you conscious of the reason you are reading. Throughout your research these annotations will be useful memory triggers.
- ✔ Develop your own symbol system: asterisk a key idea, for example, or use an exclamation mark for anything that is surprising, absurd, bizarre etc. Like your margin words, your symbols can help your thoughts when you first read it. They will be indispensable when you return to a publication later in the term, in search of a particular passage that you may want to refer to in your project report.
- ✔ Get in the habit of hearing yourself ask questions – 'what does this mean?'; 'why is she or he drawing that conclusion?' Write the questions down (in your margins, at the beginning or end of the reading, in a notebook or elsewhere). They are reminders of the unfinished business you still have with a text: to come to terms with on your own, once you've had a chance to digest the material further or have done further reading.

Bibliographic details

For some project reports you will be required to include a **bibliography**. Convention dictates that this should include all the relevant items you consulted for your project, including those not directly referred to in the text. For the majority, you will be asked to include only a list of **references** for those items referred to directly in the text. The **bibliographic details** contained in both need to be sufficient to enable readers to find the original items. These details are summarised in Table 3.5.

If you located the item online, you need to record the full Internet address of the resource and the date you accessed the information (Appendix 1). This address is the URL, the unique resource location or universal/uniform resource locator. For a journal article accessed online, and some other electronic documents, it is becoming more usual to also include that document's **digital object identifier** (DOI). The DOI provides a permanent and unique two-part identifier for the electronic document.

Most universities have a preferred referencing style that you must use in your project report. This will normally be prescribed in your assessment criteria. Three of the most common styles are the Harvard system (a version of which we have used in this book), the American Psychological Association (APA) system and the Vancouver or footnotes system. Guidelines on using these are given in Appendix 1.

Brief summary of content

A brief summary of the content of each item in your reference database will help you to locate the relevant items and facilitate reference to your notes and photocopies. This can be done by annotating each record with the search terms used, to help locate the item and the abstract. It will also help you to maintain consistency in your searches.

Supplementary information

As well as recording the details discussed earlier, other information may also be worth recording. These items can be anything you feel will be of value. In Table 3.6 we outline those that we have found most useful.

Table 3.5 Bibliographic details required

Journal	Book	Chapter in an edited book
• Author(s) – family name, first name, initials • Year of publication (in parentheses) • Title of article • *Title of journal* (italicised) • Volume • Part/issue • Page numbers (preceded by 'p'. for page or 'pp.' for pages)	• Author(s) – family name, first name initials • Year of publication (in parentheses) • *Title and subtitle of book* (italicised) • Edition (unless first) • Place of publication • Publisher	• Author(s) – family name, first name initials • Year of publication (in parentheses) • Title of chapter • Author(s) of book – family name, first name initials • *Title and subtitle of book* (italicised) • Edition (unless first) • Place of publication • Publisher • Page numbers of chapter (preceded by 'pp.' for pages)

Table 3.6 Supplementary information

Information	Reason
ISBN	The identifier for any book, and useful if the book has to be requested on inter-library loan
DOI	The digital object identifier is both permanent and unique, meaning an electronic document can be found more easily
Class number (e.g. Dewey decimal)	Useful to locate print copies of books in your university's library and as a pointer to finding other books on the same subject
Quotations	Always note useful quotations in full and with the page number of the quote; if possible, also save entire document as a PDF file
Where it was found	Noting where you found the item is useful, especially if it is not in your university library and you could only take notes
The search engine, database or other resource used to locate it	Useful to help identify possible resources for follow-up searches
Evaluative comments	Your personal notes on the value of the item to your research in relation to your relevance and value criteria
When the item was consulted	Especially important for items found via the Internet as these may disappear without trace
Filename	Useful if you have saved the document as a PDF file

3.9 Using systematic review

Systematic review is a replicable process for reviewing the literature using a comprehensive pre-planned strategy to locate existing literature, evaluate the contribution, analyse and synthesise the findings and report the evidence to allow conclusions to be reached about what is known and, also, what is not known (Denyer and Tranfield 2009). Conducting a systematic review can be likened to being a judge and jury, where you evaluate sceptically the evidence to come to the fairest judgement possible (Siddaway et al. 2019).

Originating in the medical sciences, systematic review has been used widely to evaluate specific medical treatments; in the past three decades its importance has been recognised in other disciplines. Within business and management, not all researchers have greeted systematic review with enthusiasm. While some argue that the systematic review method

Box 3.14 Checklist

Establishing whether a project may be suitable for systematic review

- ✔ Is there uncertainty about the effectiveness of the policy/service/intervention?
- ✔ Is there a need for evidence about the likely effects of a policy/service/intervention?
- ✔ Despite a large amount of research on the topic, do key questions remain unanswered?
- ✔ Is there a need for a general overall picture of the research evidence on the topic to direct future research?
- ✔ Is an accurate picture of past research and associated methods needed to help develop new methods?

(If the answer to one or more of these is 'yes' then the project may be suitable for systematic review.)

Source: Developed from Petticrew and Roberts (2006)

addresses potential research bias common in other forms of literature reviews, others argue that all evidence is inherently subjective and impacted by politics, values and interests (Rojon et al. 2021). Notwithstanding, Denyer and Tranfield (2009) have adapted the medical sciences guidance, ensuring that the process is transparent, inclusive, explanatory and enables learning. Systematic reviews usually, although not exclusively, focus on policy or practice questions such as the effectiveness of a particular intervention and the associated mechanisms with an emphasis on informing action. It is therefore not surprising that Petticrew and Roberts (2006) argue that systematic review is only suitable for some research projects (Box 3.14), emphasising that it is time-consuming and the need to involve others in the process.

Prior to conducting a systematic review, most writers suggest you undertake an exploratory **scoping study** to assess whether or not other systematic reviews have already been published and determine the focus of the literature search. Subsequent to this, a five-step process in which each stage is recorded precisely can be followed (Rojon et al. 2021):

1 *Review scope and question(s)* of systematic review, involving a broad range of expert stakeholders such as potential academic and practitioner users of the review as an advisory group and initial, non-systematic, scoping review. Resulting review questions, for example 'What are marketing professionals' understanding and definition of viral marketing?', can be developed using the CIMO acronym (Denyer and Tranfield 2009). This emphasises the need to include review questions which relate to the:

   Context – the individuals, relationships or wider settings being researched;

   Intervention – the effects of the events, actions or activities being researched;

   Mechanisms – the mechanisms that explain how the intervention (within the context) results in the outcome;

   Outcome – the effects of the intervention and how they are measured (Jones and Gatrell 2014).

2 *Search literature* to locate and generate a comprehensive list of potentially relevant research studies using online database searches, specialist bibliographies, tables of contents and other sources (Section 3.3).

3 *Select and evaluate* relevant research studies through:

- **a** *Initial review,* usually by title and abstract, to screen relevant research studies using predetermined explicit inclusion and exclusion (selection) checklists of criteria to assess the relevance of each in relation to the review question(s). These checklists can be developed by undertaking a small number of pilot searches and making a list of reasons for inclusion or exclusion of each article or adapting checklists developed for previous systematic reviews, by journals to assess general quality of research or to assess issues of relevance and value (Box 3.14). Common criteria include adequate methods, clear data analysis and conclusions derived from findings.
- **b** *Further review and data extraction,* usually evaluating by reading the full text of those not excluded in the initial review, breaking down each study into its constituent parts and recording the key points (research question/aim; study context – country, industry sector, organisational setting etc.; method(s) of data collection; sample size, frame and demographics; key findings; relevance to review questions) on a data extraction template.

4 *Analysis and synthesis* of the relevant research studies using the data extraction forms to explore and integrate the studies and answer the specific review questions.

5 *Reporting the results* including (Denyer and Tranfield 2009):

- **a** an introductory section that states the problem and review questions;
- **b** a methodology section that provides precise details of how the review was conducted (search strategy, selection criteria, key points used for the analysis and synthesis) (Sections 3.3 and 3.4);
- **c** findings and discussion sections that review all the studies (Section 3.2), specifying precisely what is known and what is not known in relation to the review questions.

Often researchers adopt the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analyses) checklist (Moher et al. 2009) and flow diagram for reporting and presenting their systematic review methodology. Using a flow diagram (Figure 3.3) allows the number of studies reviewed in steps two through four of the systematic review process to be reported clearly.

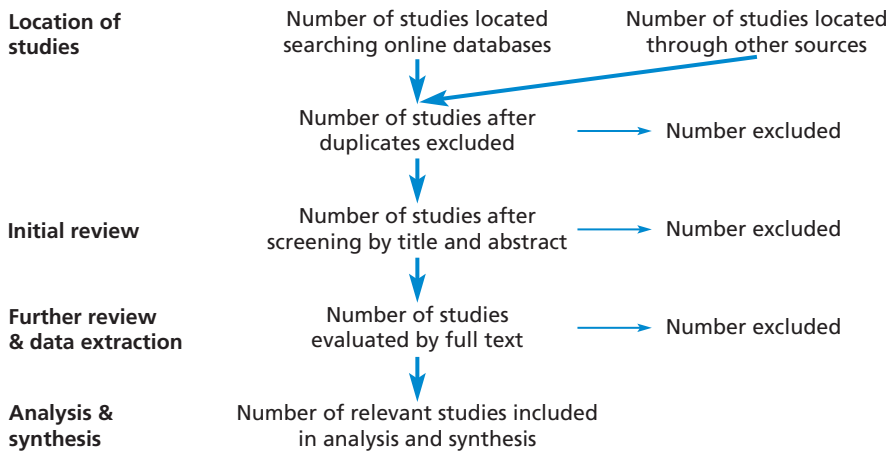


Figure 3.3 Reporting the systematic review process
Source: Developed from Moher et al. 2009; Rojon et al. 2021

3.10 Drafting your critical review

As we saw in Sections 3.2 and 3.3, the literature review that you write for your project report should be a description and critical analysis of what other authors have written, providing the background for your own research. When drafting your review, you therefore need to focus on using the literature to contextualise and justify your research question(s) and objectives. One way of helping you to focus is to think of your literature review as discussing how far existing published research goes in answering your research question(s). The shortfall in the literature will be addressed, at least partially, in the remainder of your project report – unless your entire research project is a literature review! Another way of helping you to focus is to ask yourself how your review relates to your objectives. If it does not, or does so only partially, there is a need for a clearer focus on your objectives.

In drafting your critical review, you will need to juxtapose different authors' ideas and form your own opinions and conclusions, comparing and contrasting these to form an evidence-based evaluation of the literature you have used. In doing this you will need to ensure the key themes are presented logically and that you highlight explicitly those areas where your own research will provide fresh insights, restating the research questions you will answer (Section 14.3). Subsequently, as part of your method, you will explain how you obtained the data to enable these questions to be answered before outlining and discussing your findings (Section 14.3). Although you will not be able to start writing until you have undertaken some reading, we recommend in addition to notetaking you start summarising your literature thematically early on. A way of doing this, which our students have found helpful, is to create a Thematic Analysis Grid (Anderson et al. 2015). This helps you to structure your notes for each article in a matrix with articles listed in rows in date order and each column representing a separate theme (Box 3.15, Figure 3.2). Summary notes for each article pertaining to a specific theme are then inserted in the appropriate cell.

To construct a Thematic Analysis Grid, you:

1. Identify potential themes from your initial annotated reading of the literature; these will form the grid's columns.
2. For each journal article, book or book chapter, insert a new row (keeping the date order) and make brief notes under the appropriate potential themes (columns); these should be in your own words, the page number being noted for quotations.
3. In a final column, 'methodology', note briefly the methodology used.
4. As your grid develops be prepared to:
   - **a** add new themes;
   - **b** remove themes that are no longer relevant to your research question;
   - **c** introduce sub themes.
5. As your grid develops further, look for patterns emerging across the themes; look for where:
   - **a** there is consensus;
   - **b** there are contradictions;
   - **c** the literature you have reviewed is most convincing (the methodology column will help here).

As your Thematic Analysis Grid develops you will be able to identify those themes that have been widely researched and those that are less well developed, in other words those that are most relevant and significant to your research and the associated recognised

Box 3.15 Focus on student research

Developing a thematic analysis grid*

Sam's research project required him to draw together academic research on data privacy in marketing. Having undertaken his literature search and made brief notes on all those items he considered likely to be relevant, she began to compile her Thematic Analysis Grid. An extract of Sam's grid follows:

Authors	Theme 1: Data usage outcomes	Theme 2: Privacy	Theme 3: Why do consumers share information in practice?	Theme 4: How to mitigate concerns	Comments on Methodology/ Context
Aguirre, E., Roggeveen, A., Grewal, D. and Wetzels, M. (2016) The personalization–privacy paradox: implications for new media. *Journal of Consumer Marketing,* 33(2), pp. 98–110.	Leveraging data can: a. create deep connections; b. increase attention to the ad; c. improve response rates Data can be collected overtly (e.g. fill in form) or covertly (click stream history) When firm uses covertly collected data, concerns raised re manipulative intentions and loss of control Leads to decrease in trust and willingness to engage and increases scepticism and ad avoidance Negative consumer reactions – providing false information, negative word of mouth, seeking stricter regulatory controls	Privacy is a commodity with a quantifiable value Authors identified conflict: one study shows consumers pay higher prices from sites offering more privacy Another study: 2 gift cards – more valuable if permission given to track BUT preferences reflected which card was offered first Difficult for consumers to know cost-benefit trade-off if info collected covertly Privacy concerns are situational, e.g. appearance of web site; no. of others who have given info	Consumers weigh up risks re loss of privacy against relevant offers and discounts	Grant consumers some control over privacy This is difficult to exert and time-consuming Increase consumer trust strategically, e.g. explicit privacy policies Offer third party privacy seals Transform the firm into a social entity	Literature review – paper seeks to identify factors that determine how consumers respond to personalised communications. No detailed methodology of how literature search conducted. Useful summary table in appendix showing summary findings from c 50 articles from 2003–2015 (NB given the topic, early papers could be out of date)

*Abridged from Case 3 by Deborah Anderson in the 8th edition.

Authors	Theme 1: Data usage outcomes	Theme 2: Privacy	Theme 3: Why do consumers share information in practice?	Theme 4: How to mitigate concerns	Comments on Methodology/ Context
Zhu, Y. and Chang, J. (2016) The key role of relevance in personalized advertisement: Examining its impact on perceptions of privacy invasion, self-awareness, and continuous use intentions. *Computers in Human Behavior,* 65, pp. 442–447.		Note that 'privacy' is investigated from a number of perspectives, e.g. perceived control, financial compensation, regulation, monetary rewards, convenience Privacy invasion perception is negatively related to continuous use intention Claim: privacy is a commodity that can be exchanged for perceived benefits	If better service, compensation or discounts are larger than perceived risks then consumers more willing to disclose personal information	Relevance of ad influences reaction: 'Relevant personalised advertising reduces privacy invasion perceptions and increases continuous use intentions' (p. 443) 'By accurately providing content that fits into users' interests and tastes, privacy invasion concerns are alleviated by the privacy calculus' p. 446 Relevant ads save time and resources	On-line survey in Taiwan. 386 responses from 1,000 (incentivised) questionnaires. Investigated relevance, perceptions of privacy, self-awareness and usage intentions. Drew on rational-choice theory and self-awareness theory. Used factor analysis and Structural Equation Modelling. Used fake website (NB real world?)

experts. You will also be able to see how themes have developed over time due to the articles being in date order. The Grid's final column will also allow you to see easily which methodologies have been used in the research. Because your reading is brought together in one place, you will have a clear overview about what is known about your research topic from which to begin drafting and re-drafting your review.

Remember to be critical as you draft your review (Box 3.1) and ensure that what you write relates clearly to your research question(s) and objectives (Box 3.2). In order to improve the transparency of your review process, you should also explain precisely how you selected the literature you have included in your review, outlining your choice of search terms and of databases used. This is usually done at the start of the review and is essential if you are using the systematic review methodology (Section 3.9). This can be thought of as 'Step 0' of the review funnel we outlined in Section 3.3. When you have completed your first draft you can use Box 3.16 to evaluate its suitability for your project report.



Box 3.16 Checklist

Evaluating your draft literature review

- ✔ Does your review have a clear title, which describes the focus of your research rather than just saying 'literature review'?
- ✔ Have you explained precisely how you searched the literature and criteria used to select those studies included?
- ✔ Does your review start at a more general level before narrowing down?
- ✔ Is your review organised thematically around the ideas contained in the research being reviewed rather than the researchers?
- ✔ Are your arguments coherent and cohesive – do your ideas link in a way that will be logical to your reader and tell a clear story?
- ✔ Have you used subheadings within the review to help guide your reader?
- ✔ Does the way you have structured your review draw your reader's attention to those issues that are the focus of your research, in particular your research questions and objectives?
- ✔ Does your review lead your reader into subsequent sections of your project report?

3.11 A note about plagiarism

There is no doubt that plagiarism has become an enormous concern in academic institutions in recent years, largely as a result of the ease with which material can be copied from the Internet and passed off as the work of the individual student. It is a serious topic because it is a breach of academic integrity when a person passes off another's work as their own. The consequences of being found guilty of plagiarism can be severe, including not being awarded your degree.

Neville (2016) argues that plagiarism is an issue that runs parallel to a debate with recurring questions about the purpose of higher education in the twenty-first century. He notes that, on the one hand, there is the argument that an insistence on 'correct' referencing is supporting a system and a process of learning that is a legacy of a different time and society. This argument holds that universities are enforcing upon you an arcane practice of referencing that you will probably never use again outside higher education. On the other hand, there is the argument that plagiarism is an attack upon values of ethical, proper, decent behaviour – values consistent with a respect for others. These are ageless societal values that need to be maintained.

So what precisely is plagiarism? Quite simply, it is presenting someone else's work or ideas as if they are your own, with or without their consent and failing to fully acknowledge the original source. The University of Oxford (2021) lists eight forms of plagiarism that are commonly found in universities. These are:

1. *Quoting* someone else's work, word for word, without clear acknowledgement.
2. *Cutting and pasting* text, diagrams or any other material from the Internet without acknowledgement.
3. *Paraphrasing* someone else's work by altering a few words or changing their order or closely following the structure of their argument without acknowledgement.
4. *Colluding* including unauthorised collaboration with others (unless expressly asked to do so such as in group work) and not attributing the assistance received.
5. *Inaccurately referencing (citing),* within the text and list of references, of the source of a quoted passage. This often occurs when students pretend to have read an original source, when their knowledge is derived from a secondary source.

6 *Failing to acknowledge assistance* that leads to substantive changes in the content or approach.
7 *Using materials written by others* such as professional essay writing services, or friends, even with the consent of those who have written it.
8 *Auto or self-plagiarising*, that is submitting work that you have already submitted (either in part or fully) for another assessment. However, it is usually acceptable to cite earlier work you have had published.

It is tempting to think that all cases of plagiarism are a consequence of students either being too idle to pursue their research and write diligently or wishing to appear cleverer than they really are. But the fact is that plagiarism is an extremely complex issue and the reasons for it may owe as much to student confusion as wilful negligence. That said, there is little excuse for confusion. All universities have ample guidance for students on the topic of plagiarism and will emphasise that it is the responsibility of the individual student to become aware of the university's regulations surrounding its conduct. In addition, an increasing number of universities ask students to check their own work using plagiarism detection software such as Turnitin and submit the report alongside the electronic copy of their work.

3.12 Summary

- Critically reviewing the literature is necessary to help you to develop a thorough understanding of, and insight into, previous work that relates to your research question(s) and objectives.
- Your written review will set your research in context by discussing critically and referencing work that has already been undertaken, drawing out key points and presenting them in a logically argued way, and highlighting those areas where you will provide fresh insights. It will lead the reader into subsequent sections of your project report.
- There is no one correct structure for a critical review, although it is helpful to think of it as a funnel in which you start at a more general level prior to narrowing down to your specific research question(s) and objectives.
- You are most likely to make use of formally published items (white literature) and those which have not been through the peer review process (grey literature). Your use of these resources will depend on your research question(s) and objectives. Some may use only secondary literature. For others, you may need to locate grey literature as well.
- When planning your literature search you need to:
  - have a clearly defined research question(s) and research objectives;
  - define the parameters of your search;
  - generate search terms and phrases.
- Techniques to help you in this include discussion, brainstorming and relevance trees.
- Your literature search is likely to be undertaken using a variety of approaches in tandem. These will include:
  - searching online databases;
  - obtaining relevant literature referenced in books and articles you read;
  - browsing and scanning secondary in your university library;
  - general online searching;
  - searching institutional repositories and social networking platforms;

- Don't forget to make precise notes of the search processes you have used and their results.
- Once obtained, the literature must be evaluated for its relevance and value to your research question(s) and objectives. Each item must be read and noted. Bibliographic details, a brief description of the content and appropriate supplementary information should also be recorded.
- For literature reviews focusing on policy or practice questions in particular, you may decide to use a systematic review.
- Care should be taken when drafting and redrafting your literature review not to plagiarise the work of others.

Self-check questions

Help with these questions is available at the end of the chapter.

3.1 The following extract and associated references are taken from the first draft of a critical literature review. The research project was concerned with the impact of changes to UK legal aid legislation on motor insurance pricing policies.
List the problems with this extract in terms of its:

a content;
b structure.

> The primary function of motor insurance is to provide financial protection against damage to vehicles and bodies resulting from traffic conditions and the liabilities that can arise (Wikipedia 2021). O'Brian (2014) suggests that motor insurers have been too eager to reap the benefits of legal aid. Papra-Servano (2013) notes that the average car insurance premium has reduced since changes in legislation brought about by the UK Legal Aid, Sentencing and Punishment of Offenders Act. This Act prohibits the payment and receipt of referral fees in relation to personal injury claims by solicitors, claims companies and other authorised persons. Motor insurance is particularly price sensitive because of its compulsory nature and its perception by many to have no real 'value' to themselves.
>
> O'Brien, S. (2013). 'Motor insurance: Jumping the gun'. Post. 29 October. Available at: https://www.postonline.co.uk/post/analysis/2301953/motor-insurance-jumping-the-gun. [Accessed 28 April 2021]
>
> Papra-Servano, C. (2013). 'Rates drop as motor insurers anticipate legal reform windfall'. *Post.* 17 July. Available at: https://www.postonline.co.uk/post/news/2282883/rates-drop-as-motor-insurers-anticipate-legal-reform-windfall [Accessed 28 April 2021]
> Wikipedia (2018) *Vehicle Insurance.* Available at: http://en.wikipedia.org/wiki/Vehicle_insurance. [Accessed 28 March 2021].

3.2 Outline the advice you would give a colleague on:

a how to plan their search;
b which literature to search first.

3.3 Brainstorm at least one of the following research questions, either on your own or with a colleague, and list the search terms that you have generated.

a How effective are share options as a motivator?
b How do the opportunities available to a first-time house buyer through interpersonal discussion influence the process of selecting a financial institution for the purposes of applying for a house purchase loan?
c To what extent do new methods of direct selling of financial services pose a threat to existing providers?

3.4 You are having considerable problems with finding relevant material for your research when searching databases. Suggest possible reasons why this might be so.

3.5 Rewrite the following passage as part of a critical literature review using the Harvard system of referencing:

Past research indicates important gender differences in the use of networks,[1] and suggests that male SME owners are more likely to successfully network and benefit from networks-driven performance in contrast to female SME owners.[2] In particular, as many women come to self-employment from domestic or non-management background,[3] and thus are likely to have previously engaged in the relatively isolating domestic and childrearing work or lower-status support work, they can be expected to possess fewer, more personal, less formal and less powerful contacts, as well as less time for networking.[1,4,5,6,7] However, empirical studies of SME owners challenge such expectations. For example, according to a 2012 survey of 2919 male- and 181 female-controlled SMEs, there is little gender difference, after controlling for education, experience, industry, age and size, in the SME owners' use of networking and its impact on business performance – in other words, SMEs owned by women and men enjoy similar performance benefits of networking.[8]

[1]Hanson, S. and Blake, M. (2009) 'Gender and entrepreneurial networks', *Regional Studies,* Vol. 43, pp. 135–49.
[2]Watson, J. (2012) 'Networking: Gender differences and the association with firm performance', *International Small Business Journal,* Vol. 30, pp. 536–58.
[3]Cromie, S. and Birley, S. (1992) 'Networking by female business owners in Northern Ireland', *Journal of Business Venturing,* Vol. 7, pp. 237–51.
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[6]Munch A., McPherson J.M. and Smith-Lovin L. (1997) 'Gender, children, and social contact: The effects of childrearing for men and women', *American Sociological Review,* Vol. 62, pp. 509–20.
[7]Orhan, M. (2001) 'Women business owners in France: The issue of financing discrimination', *Journal of Small Business Management,* Vol. 39, pp. 95–102.
[8]Watson, J. (2012) 'Networking: Gender differences and the association with firm performance', *International Small Business Journal,* Vol. 30, pp. 536–58.

Review and discussion questions

3.6 Use the specialised search services such as 'Google Scholar' and 'Google Finance' to search for articles on a topic which you are currently studying as part of your course.
- **a** Make notes regarding the types of items that each of these services finds.
- **b** How do these services differ?
- **c** Which service do you think is likely to prove most useful to your research project?

3.7 Agree with a friend to each review the same article from a refereed academic journal which contains a clear literature review section. Evaluate independently the literature review in your chosen article with regard to its content, critical nature and structure using the checklists in Boxes 3.2 and 3.15 respectively. Do not forget to make notes regarding your answers to each of the points raised in the checklists. Discuss your answers with your friend.

3.8 With a friend select an article that you think will be of use to an assignment you are both currently working on. Use the checklist in Box 3.13 to assess the relevance and value of the article to your assignment.



Progressing your research project

Critically reviewing the literature

- Consider your research question(s) and objectives. Use your lecture notes, course textbooks and relevant review articles to define both narrow and broader parameters of your literature search, considering language, subject area, business sector, geographical area, publication period and literature type.
- Generate search terms using one or a variety of techniques such as reading, brainstorming and relevance trees. Discuss your ideas widely, including with your project tutor and colleagues.
- Use online databases to identify relevant secondary literature. At the same time, obtain relevant literature that has been referenced in the books and articles you have already read. Do not forget to record your searches systematically and in detail.
- Obtain copies of items, evaluate them systematically and make notes. Remember also to record bibliographic details, a brief description of the content and supplementary information in your bibliographic software.
- Construct a Thematic Analysis Grid and start drafting your critical review as early as possible, keeping in mind its purpose and taking care to reference properly and avoid plagiarism.
- Continue to search the literature throughout your research project and redraft your review to ensure that your review remains up to date.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Colquitt, J.A. (2013) 'Crafting references in AMJ submissions', *Academy of Management Journal,* Vol. 56, No. 5, pp. 1221–4. This short editorial provides extremely useful insights regarding citations and references in academic writing.

Neville, C. (2016) *The Complete Guide to Referencing and Plagiarism* (3rd edn). Maidenhead: Open University Press. Chapter 6 is a very helpful guide on what constitutes plagiarism and how it can be avoided. The chapter ends with some useful exercises designed to ensure that the reader does not fall into some common traps.

Ridley, D. (2018) *The Literature Review: A Step-by-Step Guide for Students* (2nd edn). London: Sage. This has numerous examples and offers a wealth of practical advice with practice tasks. The sections on being critical and on foregrounding writers' voice are particularly helpful.

Siddaway, A.P., Wood, A.M. and Hedges, L.V. (2019) 'How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, Meta-analyses, and meta-syntheses' *Annual Review of Psychology,* Vol. 70, pp. 747–70. This practical guide outlines how to plan, conduct and present both qualitative and quantitative systematic reviews, outlining core principles and describing common problems.

Case 3
Shaping powerful questions when reviewing the literature



Bo1982/Shutterstock

Haydn is a postgraduate MSc Management and Entrepreneurship student and as part of his studies he needs to complete a research project. Haydn has set his sights on studying a concept called 'entrepreneurial orientation' (EO) (Covin and Slevin 1989; Hughes and Morgan 2007; Hughes et al. 2020; Lumpkin and Dess 1996; Wales, Covin and Monsen 2020), and how a firm might achieve it. At the heart of this research project is a review of academic literature so that he can set out exactly what research gap and research question(s) his project will then attempt to answer.

Haydn decided to conduct a systematic literature review to get a structured understanding of the field. He followed good practice to this effect. As part of his analysis, he classified research chronologically and thematically and drew several observations:

1. Chronologically, scholars had placed considerable emphasis on the performance effects of an entrepreneurial orientation, culminating in the Rauch et al. (2009) meta-analysis.
2. A generally positive relationship between EO and firm performance has been reported but studies continued to report some discrepancies. This led to a focus since 2010 on factors affecting how well EO drives firm performance.
3. Now, scholars are asking questions to do with how, when and why an EO becomes embedded in a firm or not and are beginning to look at the roles of individuals and teams.

Haydn is now at a crossroads. He treated the literature review as a synthesis and critique but now sees before him a wealth of research studies and lots of possible questions he could ask. Haydn feels paralysed and talks to his project tutor for advice. His project tutor tells him somewhat cryptically that 'not all questions are equal', and he challenges Haydn to consider what would be an 'interesting' question and what the differences may be between an initial research question and an overarching research question that was manageable. Haydn's project tutor also asked him to focus on a single area of interest. Haydn wondered why this was so.

Haydn realised that there was little research answering the question, 'Why do firms differ in how they achieve entrepreneurial behaviours?' But he realised that this question was too big to be manageable. Looking at his literature review again, he decided to look beyond the structure and themes in his systematic review and look for what was missing. It dawned on Haydn that for a firm to be entrepreneurial, its employees must exhibit and engage in entrepreneurial behaviour. Yet this problem was routinely overlooked. Discussing with his project tutor, the

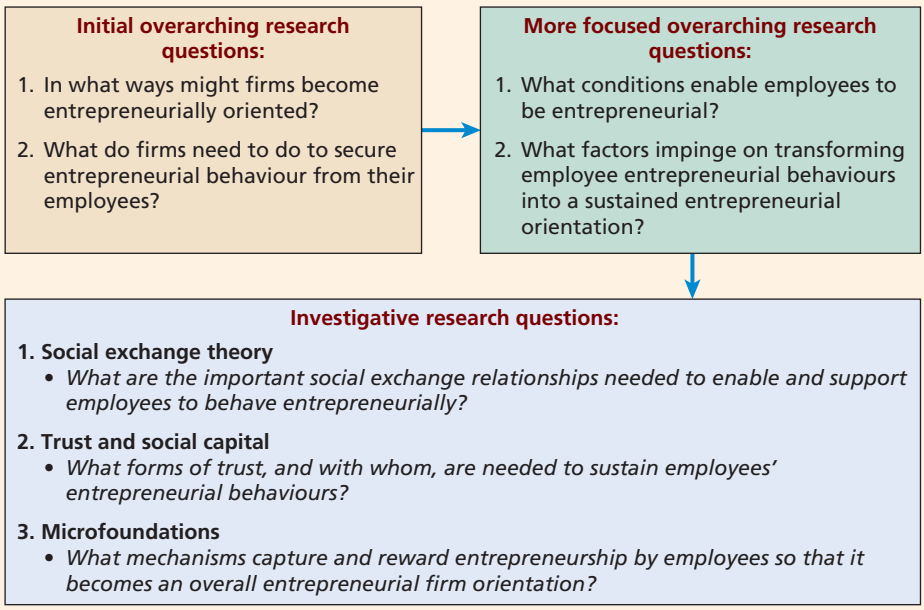


Figure C3.1 Haydn's initial roadmap

two crafted a roadmap (Figure C3.1) to move from the 'entrepreneurial problem' to where the answer might lie and what theories could be used along the way to help frame the research question.

Without realising it, the project tutor had helped Haydn not only to come to terms with the state of the art of EO research but also to scrutinise what is missing and help him to arrive at the real object of interest. Haydn was now engaged in critical evaluation and crafting both the research gap and the motivation for his work.

His project tutor asked him to begin writing his actual research questions. This is no small feat. The challenge was how to define and then move from a more focused (and achievable) overarching research question to more detailed investigative questions. Haydn worked alone for several days to refine his roadmap and craft what he thought were investigative questions. He presented his work to his supervisor and his supervisor replied, 'You have sharper questions now, but they are still common-sense questions. To get to investigative research questions, you need to theoretically ground your ideas.'

Together, Haydn and his supervisor set out a new roadmap (Figure C3.2):

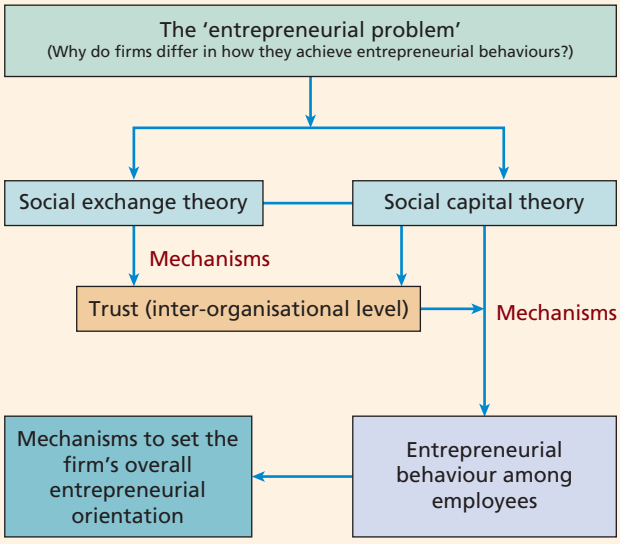


Figure C3.2 Haydn's new roadmap

Looking back, Haydn started to appreciate that his project tutor was teaching him the difference between reviewing the literature and setting out its structure, chronology and themes, to being able to craft his own contribution to the conversations taking place in the literature. In doing so, Haydn realised that for his work to have meaning not just for himself and managers when he applies for future jobs, but also for those scholars for whom he was building his work, he needed to ask 'good' questions that had a clear pathway to be meaningfully answered.

Haydn now felt more confident that his ideas had merit. He could now see patterns *and gaps* in the literature and become excited about what he could offer in return. He had learned how to ask better questions so that his research would carry more weight and impact. He was able to use the literature he had read to craft both an overarching research question that was feasible and more detailed investigative questions. Crucially, he could justify why those questions mattered. Once Haydn had completed this process, he was confident that he had made informed decisions about the issues to include in his project and discuss in his literature review, and which issues he could confidently exclude.

Questions

1. List at least three things that any good literature review must do.
2. What might be the reasons for Haydn's project tutor suggesting he focus on one area of interest, and not several?
3. What makes a piece of work interesting?
4. What actions described in the case can support Haydn's claim to be undertaking an original/novel piece of research?

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Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders.**



They are:

- National cultures and management styles (focussing on searching for relevant literature and developing a theoretical framework).
- Complexity theory and emergent change (focussing on being critical in writing).
- Individual workplace performance: systematically reviewed (focussing on undertaking a systematic review and the associated realities).
- After the crisis: A systematic review (focussing on review questions and being systematic and critical when reviewing the literature).
- Using a Thematic Analysis Grid to help critically review the literature (focussing on using a thematic analysis grid to look at data privacy in marketing).

Self-check answers

3.1 There are numerous problems with the content and structure of this extract. Some of the more obvious ones include:

- The content consists of Wikipedia, a company website and an online trade magazine, *Post,* and there are no references of academic substance.
- You would not expect to see Wikipedia referenced in a research project for reasons outlined earlier in this chapter.
- Some of the references to individual authors have discrepancies: for example, was the article by O'Brien (or is it O'Brian?) published in 2014 or 2013?
- The UK Government Act is not referenced directly (it should be!) and you would expect the actual Act to be referenced.
- There is no real structure or argument in the extract. The extract is a list of what people have written, with no attempt to critically evaluate or juxtapose the ideas.

3.2 This is a difficult one without knowing their research question! However, you could still advise them on the general principles. Your advice will probably include:

- Define the parameters of the research, considering language, subject area, business sector, geographical area, publication period and literature type. Generate search terms using one or a variety of techniques such as reading, brainstorming or relevance trees. Discuss their ideas as widely as possible, including with their project tutor, librarians and you.
- Start the search using online databases in the university library to identify relevant literature. She should commence with those online databases that abstract and index academic journal articles. At the same time they should obtain relevant literature that has been referenced in articles that they have already read.

3.3 There are no incorrect answers with brainstorming! However, you might like to check your search terms for suitability prior to using them to search an appropriate database. We suggest that you follow the approach outlined in Section 3.6 under 'searching using online databases'.

3.4 There are a variety of possible reasons, including:

- One or more of the parameters of your search are defined too narrowly.
- The keywords you have chosen do not appear in the controlled index language.
- Your spelling of the search term is incorrect.
- The terminology you are using is incorrect.
- The acronyms you have chosen are not used by databases.
- You are using jargon rather than accepted terminology.

3.5 There are two parts to this answer: rewriting the text and using the Harvard system of referencing. Your text will inevitably differ from the answer given below owing to your personal writing style. Don't worry about this too much as it is discussed in far more detail in Section 14.6. The references should follow the same format.

Past research indicates important gender differences in the use of networks (Hanson and Blake 2009) and suggests that male SME owners are more likely to successfully network and benefit from networks-driven performance in contrast to female SME owners (Watson 2012). In particular, as many women come to self-employment from domestic or non-management background (Cromie and Birley 1992), and thus are likely to have previously engaged in the relatively isolating domestic and childrearing work or lower-status support work, they can be expected to possess fewer, more personal, less formal and less powerful contacts, as well as less time for networking (Ardrich 1989; Hanson and Blake 2009; Moore 1990; Munch et al. 1997; Orhan 2001). However, recent empirical studies of SME owners challenge such expectations. For example, according to Watson's (2012) survey of 2919 male- and 181 female-controlled SMEs, there is little gender difference, after controlling for education, experience, industry, age and size, in the SME owners' use of networking and its impact on business performance – in other words, SMEs owned by women and men enjoy similar performance benefits of networking.

Ardrich, H. (1989) 'Networking among women entrepreneurs', in O. Hagan, C.S. Rivchun and D. Sexton (eds) *Women-Owned Businesses.* New York: Praeger, pp. 103–32.

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Chapter 4



Understanding research philosophy and approaches to theory development

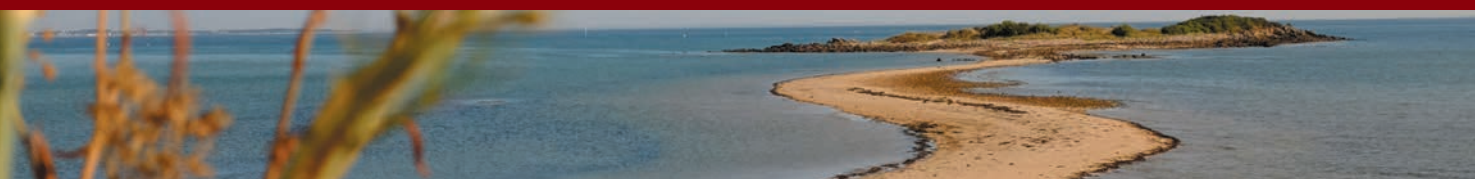
Learning outcomes

By the end of this chapter you should be able to:

- explain the relevance of ontology, epistemology and axiology to business research;
- describe the main research paradigms that are significant for business research;
- explain the relevance for business research of philosophical positions such as positivism, critical realism, interpretivism, postmodernism and pragmatism;
- reflect on your own epistemological, ontological and axiological stance;
- reflect on and articulate your own philosophical position and approach to theory development in relation to your research;
- distinguish between deductive, inductive, abductive and retroductive approaches to theory development.

4.1 Introduction

Much of this book is concerned with the way in which you collect data to answer your research question(s) and meet your aim and objectives. Many people plan their research in relation to a question that needs to be answered or a problem that needs to be solved. They then think about what data they need and the procedures they use to collect them. You are not therefore unusual if early on in your research you consider whether you should, for example, use an online questionnaire or undertake telephone interviews. However, procedures to collect your data belong in the centre of the research 'onion', the diagram we use to depict a range of factors underlying the choices about data access, ethics, sample selection, collection and analysis in Figure 4.1. (You may find that there is much terminology that is new to you in this diagram – do not worry



about it for now, we will take you through it all as you progress through the book.) In coming to this central core, you need to outline your philosophy, justifying your methodological choice, your research strategy so that others can see that your research should be taken seriously (Crotty 1998). But beware, although there are clear links between your philosophy, approach to theory development and, for example, data collection procedures, these are not deterministic. Consequently, just drawing a straight line from a particular philosophy to the centre of the research onion may not reveal the most appropriate approach to theory development, methodological choice or strategy. Rather you need to understand and explain which specific aspects of the outer layers of the onion are important to your research, rather than just peel and throw away!

This chapter is concerned principally with the outer two of the onion's layers: philosophy (Sections 4.2, 4.3 and 4.4) and approach to theory development (Section 4.5). In Chapter 5 we examine the layers we call methodological choice, strategy and time horizon. The sixth layer (procedures and techniques) is dealt with in Chapters 6–13. Section 4.2 introduces you to the philosophical underpinnings of business and management, considering different forms of assumptions. We then consider different research paradigms, these are the underlying basic and taken-for-granted assumptions of business research (Section 4.3), before looking in more detail at five research philosophies commonly adopted by its researchers (Section 4.4). In the final section (4.5) we consider three approaches to theory development.

At the end of the chapter in the section 'Progressing your research project', you will find a reflexive tool (HARP) designed by Bristow and Saunders. This will help you to make your values and assumptions more explicit, explain them using the language of research philosophy, and consider the potential fit between your own beliefs and those of major philosophies used in business and management research. We encourage you to reflect on your own beliefs and assumptions in relation to these five philosophies and the research design you will develop to undertake your research. This is important as it will help you determine those questions that you consider meaningful and the data collection procedures and analysis techniques well suited to answering them.

Decolonisation: beliefs, assumptions and life-oppressing decisions

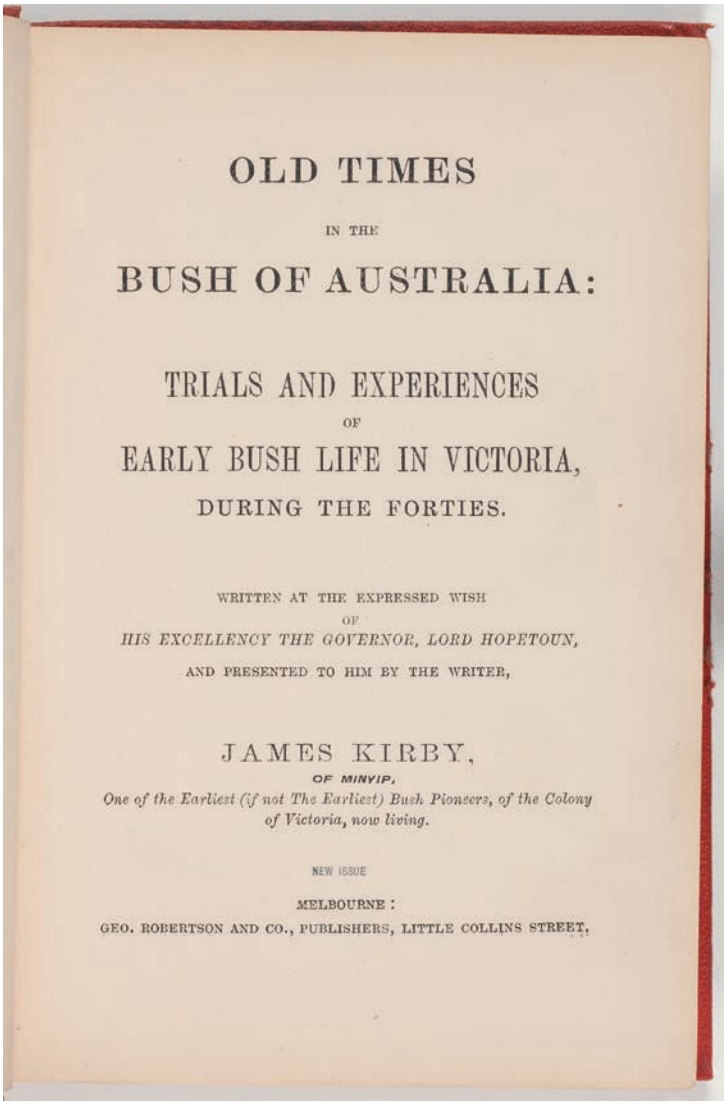
Our own beliefs and assumptions about how the world operates affect both the data we gather and how we interpret that data. For countries that have been colonised, this is evident in the dominance of settlers' views over those of the indigenous peoples and the need for remedy through decolonisation. Modern Australia, for example, was founded on western, colonial systems that did not include Indigenous First Nation Australians' knowledges, cultures, rights practices and laws, inflicting life-changing trauma on these peoples.

In his book *Dark Emu* Bruce Pascoe (2018) offers a compelling insight of pre-colonial Aboriginal society. Using data from records of and writings by early explorers and colonists, he reveals Indigenous Australians had, over thousands of years, developed sophisticated systems of food production and land management, cultivating and irrigating crops and living in villages. This he contrasts with the colonialist's labelling of them as hunter-gathers.

Pascoe argues that early colonialists selectively filtered data interpreting it to fit their prejudices. These Europeans believed in their own superiority in science, economy and religion; considering it was

their duty to spread their version of civilisation including the word of (their) God to heathens in return for the wealth of the colonised lands. Pascoe argues that these taken-for-granted assumptions allowed Europeans to justify taking possession of the land as, by denying the existence of an economy, they were denying the right of the original peoples to their land.

He supports his argument reinterpreting a variety of data including records, diaries and published narratives by the first European colonialists. In one of these, colonialist James Kirby observes a series of weirs built in what is now known as the Murray River system. These he describes in considerable detail revealing how these weirs were used to direct and support catching of fish. Yet, Kirby (1897) subsequently interpreted what he had seen as indolence and laziness.This and interpretations based on similar assumptions drawn from European culture and civilisation have, until recently, been privileged in accounts of Australian history, ignoring or undervaluing considerably the voices of the Aboriginal and Torres Strait Islander First Nations peoples and their own cultures, the oldest living cultures on earth. Decolonialisation looks to reverse and rectify this privileging of certain interpretations.



OLD TIMES

IN THE

BUSH OF AUSTRALIA:

TRIALS AND EXPERIENCES

OF

EARLY BUSH LIFE IN VICTORIA,

DURING THE FORTIES.

WRITTEN AT THE EXPRESSED WISH

OF

HIS EXCELLENCY THE GOVERNOR, LORD HOPETOUN,

AND PRESENTED TO HIM BY THE WRITER,

JAMES KIRBY,

OF MINYIP,

One of the Earliest (if not The Earliest) Bush Pioneers, of the Colony of Victoria, now living.

NEW ISSUE

MELBOURNE:

GEO. ROBERTSON AND CO., PUBLISHERS, LITTLE COLLINS STREET.

Just as colonialists' beliefs and assumptions affected how they interpreted what they saw in Australia and other colonised lands, our own belief systems and associated taken-for-granted assumptions can impact on our interpretations in the research we pursue. We need to recognise and be aware of these and the impact they have on how we shape and understand our research questions, the methods we use and the interpretations we make of our findings.

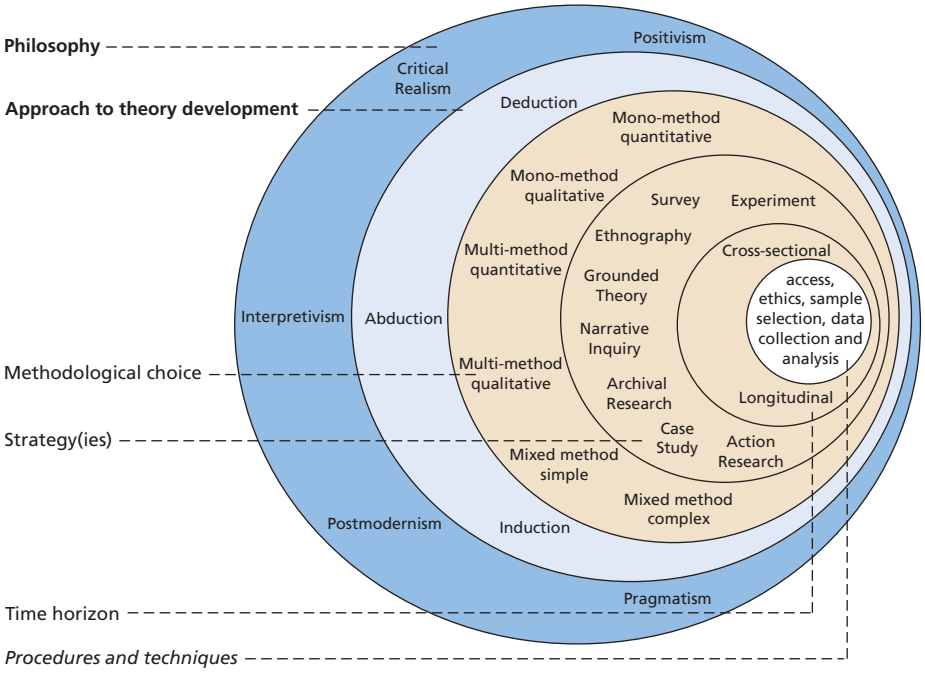


Figure 4.1 The 'research onion'
Source: © 2022 Mark NK Saunders; developed from Saunders et al. 2019

4.2 The philosophical underpinnings of business and management

What is research philosophy and why is it important?

The term **research philosophy** refers to a system of beliefs and assumptions about the development of knowledge. Although this sounds rather profound, it is precisely what you are doing when embarking on research: developing knowledge in a particular field. The knowledge development you are embarking upon may not be as dramatic as a new theory of human motivation, but even addressing a specific problem in a particular organisation you are, nonetheless, developing new knowledge. Your research philosophy sets out the world view within which your research is conducted. As shown in the opening vignette, the assumptions of the world view within which research is undertaken are important, impacting which data are privileged and how they are interpreted.

Whether or not you are consciously aware of them, at every stage in your research you will make a number of types of assumptions (Burrell and Morgan 2016). These include (but are not limited to) assumptions about the realities you encounter in your research (ontological assumptions), about human knowledge (epistemological assumptions), and about the extent and ways your own values influence your research process (axiological assumptions). These assumptions inevitably shape how you understand your research questions, the methods you use and how you interpret your findings (Crotty 1998). A well-thought-out and consistent set of assumptions will constitute a credible research

philosophy and will shape your choice of research question. It will underpin your methodological choice, research strategy and data collection procedures and analysis techniques and how you report your findings, discussion and conclusion. This will allow you to design a coherent research project, in which all elements of research fit together. Johnson and Clark (2006) note that, as business and management researchers, we need to be aware of the philosophical commitments we make through our choice of research strategy, since this will have a significant impact on what we do and how we understand what it is we are investigating. Crucially, you need to ensure your epistemological and ontological assumptions are consistent with your research design and methods used. Without this, it is unlikely you will generate trustworthy and useful research findings.

You may or may not have already thought about your own beliefs about the nature of the world around you, what constitutes acceptable and desirable knowledge, or the extent to which you believe it necessary to remain detached from your research data. The process of exploring and understanding your own research philosophy requires you to hone the skill of reflexivity (Section 1.5), that is to question your own thinking and actions, and learn to examine your own beliefs with the same scrutiny as you would apply to the beliefs of others (Corlett and Mavin 2018). This may sound daunting, but we all do this in our day-to-day lives when we learn from our mistakes. As a researcher, you need to develop reflexivity, to become aware of and actively shape the relationship between your own beliefs and assumptions (your philosophical position) and how you design and undertake your research (Alvesson and Sköldberg 2018).

You may be wondering about the best way to start this reflexive process. In part, your exploration of your philosophical position and how to translate it into a coherent research practice will be influenced by practical considerations, such as your own and your project tutor's subject area, the time and finances available for your research project, and what access you can negotiate to data. There are two things that you can do to start making a more active and informed philosophical choice:

- begin asking yourself questions about your research beliefs and assumptions (the reflexive tool at the end of the chapter – HARP – will help here);
- familiarise yourself with major research philosophies within business and management by reading the rest of this chapter (and any further philosophical reading you wish to explore);

This dual course of action will help set in motion the development of your research philosophy, which you can then express through your research design (Figure 4.2).

And now, a word of warning. Although every research project is underpinned by particular philosophical assumptions, these are often unreported in journal articles, the reader being left to interpret them from the methods used. In contrast, like O'Gorman and MacIntosh (2015) we consider it important that you make your philosophical commitment explicit, outlining the implications of the associated assumptions for your chosen methods. Through doing this you can signal clearly to your readers the bases from which your research was undertaken, your claims made, and within which it should be judged.

Is there a best philosophy for business and management research?

You may be wondering at this stage whether you could take a shortcut, and simply adopt 'the best' philosophy for business and management research. One problem with such a shortcut would be the possibility of discovering a clash between 'the best' philosophy and your own beliefs and assumptions. Another problem would be that

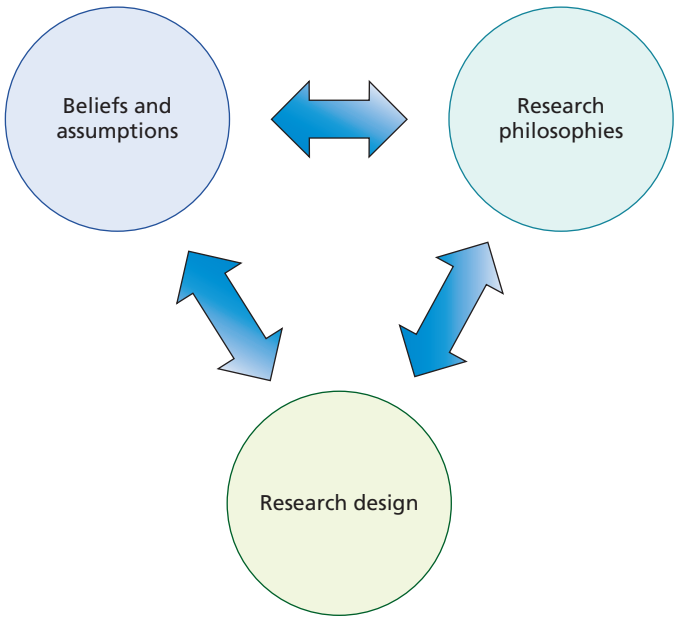


Figure 4.2 Developing your research philosophy as a reflexive process
Source: ©2021 Alexandra Bristow and Mark N.K. Saunders

business and management researchers do not agree about one best philosophy (Tsoukas and Knudsen 2003).

In terms of developing your own philosophy and designing your research project, it is important to recognise that philosophical disagreements are an intrinsic part of business and management research. When business and management emerged as an academic discipline in the twentieth century, it drew its theoretical base from a mixture of disciplines in the social sciences (e.g. sociology, psychology, economics), natural sciences (e.g. chemistry, biology), applied sciences (e.g. engineering, statistics), humanities (e.g. literary theory, linguistics, history, philosophy) and the domain of organisational practice (Starbuck 2003). In drawing on these disciplines, it absorbed the various associated philosophies, dividing and defining them, and resulting in the coexistence of multiple research philosophies and methodologies we see today.

Business and management scholars have spent long decades debating whether this multiplicity of research philosophies, paradigms and methodologies is desirable, and have reached no agreement. Instead, two opposing perspectives have emerged: pluralism and unificationism. Unificationists see business and management as fragmented and argue that this fragmentation prevents the field from becoming more like a true scientific discipline. They advocate unification of management research under one strong research philosophy, paradigm and methodology (Pfeffer 1993). Pluralists see the diversity of the field as helpful, arguing that it enriches business and management (Knudsen 2003).

In this chapter, we take a pluralist approach and suggest that each research philosophy and paradigm contribute something unique and valuable to business and management research, representing a different and distinctive 'way of seeing' organisational realities (Morgan 2006). However, we believe that you need to be aware of the depth of difference and disagreements between these distinct philosophies. This will help you to both outline and justify your own philosophical choices in relation to your chosen research method.

Ontological, epistemological and axiological assumptions

Before we discuss individual research philosophies in Section 4.4, we need to be able to distinguish between them. We do this by considering the differences in the assumptions typically made by scholars working within each philosophy. To keep things relatively simple, we look at three types of research assumptions to distinguish research philosophies: ontological, epistemological and axiological. There are, of course, other types of assumptions that are relevant to research design and research philosophies – when you use the HARP tool at the end of this chapter, you will spot some of them. For example, researchers differ in terms of how free they believe individuals are to change their lives and the world around them, and conversely how constraining the societal structures are on the lives and actions of individuals. These are known as structure and agency assumptions.

Ontology refers to assumptions about the nature of reality. In this chapter's opening vignette, we saw how colonialists made specific assumptions regarding the realities of First Nation Australians, perceiving them as hunter-gatherers and lazy. Although this may seem far removed from your intended research project, your ontological assumptions shape the way in which you see and study your research objects. In business and management these objects include organisations, management, individuals' working lives and organisational events and artefacts. Your ontology therefore determines how you see the world of business and management and, therefore, your choice of what to research for your research project.

Imagine you wanted to research resistance to organisational change. For a long time, business and management scholars made the ontological assumption that resistance to change was highly damaging to organisations. They argued it was a kind of organisational misbehaviour and happened when change programmes went wrong. Consequently, they focused their research on how this phenomenon could be eliminated, looking for types of employee that were most likely to resist change and management actions that could prevent or stop resistance. More recently, some researchers have started to view this concept differently, resulting in a new strand of research. These researchers see resistance as a phenomenon that happens all the time whenever organisational change takes place, and that benefits organisations by addressing problematic aspects of change programmes. Their different ontological assumptions mean they focus on how resistance to change can best be harnessed to benefit organisations, rather than looking for ways to eliminate resistance (Thomas and Hardy 2011).

Epistemology refers to assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how we can communicate knowledge to others (Burrell and Morgan 2016). Whereas ontology may initially seem rather abstract, the relevance of epistemology is more obvious. The multidisciplinary context of business and management means that different types of knowledge – ranging from numerical data to textual and visual data, and from facts to (as we see in the opening vignette) narratives and stories – can all be considered legitimate. Consequently, different business and management researchers adopt different epistemologies in their research, including projects based on archival research and autobiographical accounts (Martí and Fernández 2013), narratives (Gabriel et al. 2013) and films (Griffin et al. 2017).

This variety of epistemologies gives you a large choice of methods. However, it is important to understand the implications of different epistemological assumptions in relation to your choice of method(s) and the strengths and limitations of subsequent research findings. For example, the (positivist) assumption that objective facts offer the

best scientific evidence is likely, but not certain, to result in the choice of quantitative research methods. Within this, the subsequent research findings are likely to be considered objective and generalisable. However, they will also be less likely to offer a rich and complex view of organisational realities, account for the differences in individual contexts and experiences or, perhaps, propose a radically new understanding of the world than if you based your research on a different view of knowledge. In other words, despite this diversity, it is your own epistemological assumptions (and arguably those of your project tutor) that will govern what you consider legitimate for your research.

Axiology refers to the role of values and ethics in the research process. We see this in the opening vignette where European colonialists felt it their duty to spread their version of civilisation, including the word of their God, to heathens. One of the key axiological choices that you will face as a researcher is the extent to which you wish to view the impact of your own values and beliefs on your research as a positive thing. Consequently, you will need to decide how you deal with both your own values and those of the people you are researching. For example, you may believe, as Heron (1996) argues, that our values are the guiding reason for all human action, and that while it is inevitable that you will incorporate your values during the process, it is crucially important that you explicitly recognise and reflect on these as you conduct and write up your research. Choosing one topic rather than another suggests you think one of the topics is more important. Your research philosophy is a reflection of your values, as is your choice of data collection procedures. For example, conducting a study where you place greatest importance on data collected using video internet mediated or face to face interviews (Chapter 10) suggests you value data collected through personal interaction with your participants more highly than views expressed through responses to an anonymous questionnaire (Chapter 11). Whatever your view, it is important, as Heron (1996) argues, to demonstrate your axiological skill by being able to articulate your values as a basis for making judgements about what research you are conducting and how you go about doing it.

Some of our students have found it helpful to write their own statement of personal values in relation to the topic they are studying. For example, for the topic of career development, your personal values may dictate that you believe developing their career is an individual's responsibility. In finance, a researcher may believe (hold the value) that as much information as possible should be available to as many stakeholders as possible. Writing a statement of personal values can help heighten your awareness of value judgements you are making in drawing conclusions from your data. Being clear about your own value position can also help you in deciding what is appropriate ethically and explaining this in the event of queries about decisions you have made (Sections 6.5–6.7).

Philosophical assumptions as multi-dimensional continua

Now you are familiar with some types of assumptions that research philosophies make, you need to be able to distinguish between them. Earlier in this chapter we discussed the emergence of business and management as a discipline and how it absorbed a range of philosophies from natural sciences, social sciences and arts and humanities. Although this offers philosophical and methodological choice, it also means business and management research philosophies are scattered along a multidimensional set of continua (Niglas 2010) between two opposing extremes. Table 4.1 summarises the continua and their objectivist and subjectivist extremes in relation to the types of philosophical assumptions that we have just discussed.

Objectivism

Objectivism incorporates the assumptions of the natural sciences, arguing that the social reality we research is external to us and others (referred to as **social actors**) (Table 4.1). This means that, ontologically, objectivism embraces **realism**, which, in its most extreme form, considers social entities to be like physical entities of the natural world, in so far as they exist independently of how we think of them, label them, or even of our awareness of them. Because the interpretations and experiences of social actors do not influence the existence of the social world according to this view, an objectivist in the most extreme form believes that there is only one true social reality experienced by all social actors. This social world is made up of solid, granular and relatively unchanging 'things', including major social structures such as family, religion and the economy into which individuals are born (Burrell and Morgan 2016).

Table 4.1 Philosophical assumptions and the objectivism – subjectivism dimension

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	⇔	**Subjectivism**
Ontology	• What is the nature of reality?	Real	⇔	Nominal/decided by convention
	• What is the world like?	External	⇔	Socially constructed
		One true reality (universalism)	⇔	Multiple realities (relativism)
		Granular (things)	⇔	Flowing (processes)
		Order	⇔	Chaos
Epistemology	• How can we know what we know?	Adopt assumptions of the natural scientist	⇔	Adopt the assumptions of the arts and humanities
	• What is considered acceptable knowledge?	Facts	⇔	Opinions
	• What constitutes good-quality data?	Numbers	⇔	Written, spoken and visual accounts
		Observable phenomena	⇔	Attributed meanings
	• What kinds of contribution to knowledge can be made?	Law-like generalisations	⇔	Individuals and contexts, specifics
Axiology	• What is the role of values in research?	Value-free	⇔	Value-bound
	• Should we try to be morally-neutral when we do research, or should we let our values shape research? How should we deal with the values of research participants?	Detachment	⇔	Integral and reflexive

From an objectivist viewpoint, social and physical phenomena exist independently of individuals' views of them and tend to be universal and enduring in character.

Consequently, it makes sense to study them in the same way as a natural scientist would study nature. Epistemologically, objectivists seek to discover 'the truth' about the social world, through the medium of observable, measurable facts, from which law-like generalisations can be drawn about the universal social reality. Axiologically, since the social entities and social actors exist independently of each other, objectivists strive to keep their research free of values, which they believe could bias their findings. They therefore also try to remain detached from their own values and beliefs throughout a rigorous scientific research process.

You may argue that management is an objective entity and decide to adopt an objectivist stance to the study of particular aspects of management in a specific organisation (see John in Box 4.1). In order to justify this, you would say that the managers in your organisation have job descriptions which prescribe their duties, there are operating procedures to which they are supposed to adhere, they are part of a formal structure which locates them in a hierarchy with people reporting to them and they in turn report to more senior managers. This view emphasises the structural aspects of management and assumes that management is similar in all organisations. Aspects of the structure in which management operates may differ, but the essence of the function is very much the same in all organisations. More generally if you took this ontological stance, the aim of your research would be to discover the laws that govern management behaviour to predict how management would act in the future. You would also attempt to lay aside any beliefs you may have developed from interacting with individual managers in the past, in order to avoid these experiences colouring your conclusions about management in general.

Alternatively, you may prefer to consider the objective aspects of management as less important than the way in which managers attach their own individual meanings to their jobs and the way they think that those jobs should be performed. This approach would be much more subjectivist (see Emma in Box 4.1).

Subjectivism

Subjectivism incorporates assumptions of the arts and humanities (Table 4.1), asserting that social reality is made from the perceptions and consequent actions of social actors (people). Ontologically, subjectivism embraces nominalism (also sometimes called conventionalism). **Nominalism**, in its most extreme form, considers that the order and structures of social phenomena we study (and the phenomena themselves) are created by us as researchers and by other social actors through use of language, conceptual categories, perceptions and consequent actions. For nominalists, there is no underlying reality to the social world beyond what people (social actors) attribute to it, and, because each person experiences and perceives reality differently, it makes more sense to talk about multiple realities rather than a single reality that is the same for everyone (Burrell and Morgan 2016). A less extreme version of this is **social constructionism**. This puts forward that reality is constructed through social interaction in which social actors create partially shared meanings and realities, in other words reality is constructed intersubjectively.

As social interactions between actors are a continual process, social phenomena are in a constant state of flux and revision. This means it is necessary as a researcher to study a situation in detail, including historical, geographical and socio-cultural contexts



Box 4.1 Focus on student research

A management exodus at ChemCo

As part of a major organisational change, all the managers in the marketing department of the chemical manufacturer ChemCo left the organisation. They were replaced by new managers who were thought to be more in tune with the more commercially aggressive new culture that the organisation was trying to create. The new managers entering the organisation filled the roles of the managers who had left and had essentially the same formal job duties and procedures as their predecessors.

John wanted to study the role of management in ChemCo and in particular the way in which managers liaised with external stakeholders. He decided to use the new managers in the marketing department as his research 'subjects'.

In his research proposal he outlined briefly his research philosophy. He defined his ontological position as that of the objectivist. His reasoning was that management in ChemCo had a reality that was separate from the managers who inhabited that reality. He pointed to the fact that the formal management structure at ChemCo was largely unchanged from that which was practised by the managers who had left the organisation. The process of management would continue in largely the same way in spite of the change in personnel.

Emma also wanted to study the role of management in ChemCo; however, she wanted to approach her research from a subjectivist perspective. In her research proposal, Emma pointed out that even though the formal management structure at ChemCo remained the same, the demographics of the new management workforce were very different. Whereas the managers who had left the company had been mostly close to retirement age, male and white, the new managers were typically young and much more gender- and ethnically-diverse. Taken together with ChemCo's emphasis on the new organisational culture, this led Emma to question whether the formal job descriptions and processes were still interpreted by the new managers in the same way. Emma therefore decided to focus her research on the old and new managers' interpretations of organisational and managerial practices.

in order to understand what is happening or how realities are being experienced. Unlike an objectivist researcher who seeks to discover universal facts and laws governing social behaviour, the subjectivist researcher is interested in different opinions and narratives that can help to account for different social realities of different social actors. Subjectivists believe that as they actively contribute to the creation and use of these data they cannot detach themselves from their own values. They therefore openly acknowledge and actively reflect on and question their own values (Cunliffe (2003) calls this 'radical reflexivity') and incorporate these within their research.

Let us suppose that you have decided to research the portrayal of entrepreneurs by the media. Media producers, like other social actors, may interpret the situations which they are filming differently as a consequence of their own view of the world. Their different interpretations are likely to affect their actions and the nature of the films and television programmes they produce. From a subjectivist view, the media producers' portrayals you are studying are a product of these producers' interaction with their environments and their seeking to make sense of it through their interpretation of events and the meanings that they draw from these events. As a subjectivist researcher, it is your role to seek to understand the different realities of the media producers in order to be able to make sense of and understand their portrayals of entrepreneurs in a way that is meaningful (Box 4.2), all the while reflecting on why you as a researcher might yourself be more drawn towards or convinced by some media portrayals rather than others. All this is some way from the objectivist position that being an entrepreneur is an objective reality that is the same for everyone, and that there is

only one correct way of perceiving that reality, regardless of who is doing the perceiving. The subjectivist view is that the portrayal of entrepreneurship is constructed through the social interactions between entrepreneurs, media narratives, and those who are reading, watching or writing about those narratives. The portrayal of entrepreneurship is continually being revised as a result of this, even as we write these words and you read them. In other words, at no time is there a definitive entity called 'entrepreneur'. Entrepreneurs are experienced differently by different media producers and other social actors (including researchers) and, as an aggregate, the resultant portrayal is likely to be constantly changing.

Box 4.2 Focus on research in the news

Why do entrepreneurs get such a bad rap?

By Janan Ganesh

Nothing brings on early mid-life ennui* like watching friends set up their own businesses. When one describes his new venture to me, all forms of salaried life seem bloodless all of a sudden. It is not the prospect of riches (you can marry into that stuff) or even the freedom – I am less answerable to legal duties, bureaucratic wrangles, early mornings, late-night panics and the ordeal of managing people than he will ever be.

It is the blend of fun and high stakes. Every decision matters (above all recruitment) and is his to make. To imagine a product into being, to work in a field of personal interest, to influence the way people live: not all entrepreneurs do these things, but the ones who do need only break even to end up somewhere near the top of Maslow's hierarchy of needs.

And then they turn on the television and see a crew of spivs vying to impress a jaded martinet flanked by two stern-faced lieutenants. Criticism of *The Apprentice,* with its desolate picture of entrepreneurial life, is neither new nor effective. If there is something medieval about the show's idiots-in-a-cage concept, then viewers do not seem to mind. The new series of the UK version that starts this autumn is the 17th. An alumnus of the American version now governs the US.

As entertainment, it dazzles. As a portrait of business, it is poison. All commerce is shown as a racket spuriously dignified with mortifying TED-speak. 'Don't tell me the sky's the limit,' one boardroom Voltaire said, 'when there are footprints on the Moon.' The content of each 'task' matters less than the distribution of blame after the fact. To the artful bluffer, the spoils. Real-life business is full of ineloquent but impressive people. *The Apprentice* rewards the opposite. Its corporate veneer is such a sham: it is a superb show about politics.

By itself, though, *The Apprentice* is not the problem. The problem is that *The Apprentice* is all there is. You can watch TV from January to December without seeing a heroic or even benign account of money being made – one that does not involve a plagiarised product, a betrayed friend, a hoodwinked customer or a corner flagrantly cut.

FT *Abridged from:* 'Why do entrepreneurs get such a bad rap?', Janan Ganesh (2017) *Financial Times* 25 August. Copyright © 2017 The Financial Times Ltd

*Feeling of dissatisfaction arising from having nothing interesting or exciting to do. The word is often used in relation to a person's job.

4.3 Research paradigms

Another dimension that can help you to differentiate between research philosophies relates to the political or ideological orientation of researchers towards the social world they investigate. This dimension has two opposing poles or extremes. Burrell and Morgan (2016) call these extremes 'sociology of regulation' (for short, regulation) and 'sociology of radical change' (simply, radical change). As we will see later, by combining the regulation and radical change dimension with the objectivisim-subjectivism dimension Burrell and Morgan develop four sociological (research) paradigms for organisational analysis.

Regulation and radical change

Researchers working within the **regulation perspective** are concerned primarily with the need for the regulation of societies and human behaviour. They assume an underlying unity and cohesiveness of societal systems and structures. Much of business and management research can be classed as regulation research that seeks to suggest how organisational affairs may be improved within the framework of how things are done at present, rather than radically challenging the current position (Box 4.3). However, you may wish to do research precisely because you want to fundamentally question the way things are done in organisations, and, through your research, offer insights that would help to change the organisational and social worlds. In this case, you would be researching within the **radical change perspective**. Radical change research approaches organisational problems from the viewpoint of overturning the existing state of affairs. Such research is often visionary and utopian, being concerned with what is possible and alternatives to the accepted current position (Burrell and Morgan 2016). Table 4.2 summarises the differences between the regulation and radical change perspectives.

Much of business and management research undertaken from within the radical change perspective would fall within the area of management known as **Critical Management Studies (CMS).** CMS researchers question not only the behaviour of individual managers but also the very societal systems within which that behaviour is situated. CMS research challenges their taken-for-granted acceptance of 'the best' or 'the only available' ways of organising societies and organisations (Fournier and Grey 2000). It therefore attempts to expose the problems and weaknesses, as well as the damaging effects, of these dominant ideas and practices.

Table 4.2 The regulation–radical change dimension

The regulation perspective . . .	⇔	The radical change perspective . . .
. . . *advocates the* status quo	⇔	. . . *advocates* radical change
. . . *looks for* order	⇔	. . . *looks for* conflict
. . . *looks for* consensus	⇔	. . . *questions* domination
. . . *looks for* integration and cohesion	⇔	. . . *looks for* contradiction
. . . *seeks* solidarity	⇔	. . . *seeks* emancipation
. . . *sees the* satisfaction of needs	⇔	. . . *sees* deprivation
. . . *sees the* actual	⇔	. . . *sees the* potential

Source: Developed from Burrell and Morgan (2016)

CMS researchers also challenge dominant organisational ideas and practices, including 'management' itself. In his book *Against Management: Organization in the Age of Managerialism,* Martin Parker (2002) challenges the acceptance of management. Parker starts by acknowledging just how difficult and almost unthinkable it is to be against something like management, which shapes so completely our everyday lives in today's world. It is one thing, he writes, to question some aspects of management, or some of its effects, so that we can learn how to do management better. It is a completely different and much harder thing to be against management itself, as a whole and categorically – it is a bit like opposing buildings, society or air. Nevertheless, Parker insists, it is the latter, radical questioning of management that is the purpose of his book. Just because management is everywhere, he writes, does not mean that management is necessary or good, or that it is not worthwhile being against it.

Parker builds his radical critique by questioning three key assumptions typically made about management:

- management is part of scientific thought that allows human beings increasing control over their environment;
- management increases control over people;
- management is the best way to control people.

Questioning these assumptions might suggest that management is damaging to organisations and societies. For example, it might emphasise that the environment does not always benefit from being controlled by people, and that controlling employees in managerial ways is not necessarily good for organisations. Once fundamental assumptions about management are questioned, researchers are freer to think about proposing alternative ideas and practices, paving the way for radical societal change.

Sociological paradigms for organisational analysis

In their book *Sociological Paradigms and Organisational Analysis* (2016), Burrell and Morgan combine the objectivist–subjectivist continuum with a regulation–radical change continuum to create a 2 × 2 matrix of four distinct and rival 'paradigms' of organisational analysis (Figure 4.3). In their interpretation (and also as we use the term here)

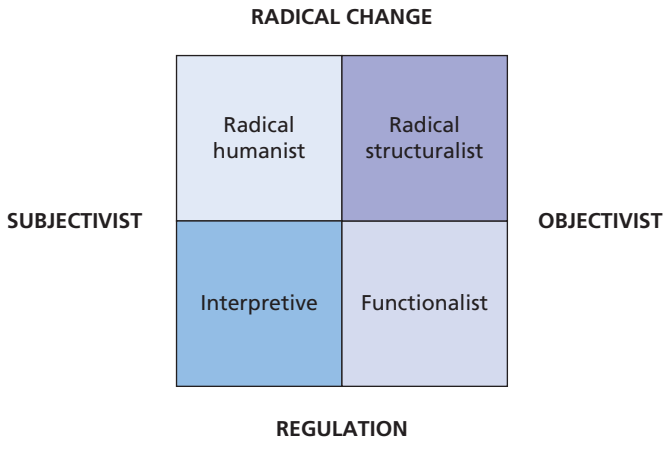


Figure 4.3 Four (research) paradigms for organisational analysis
Source: Developed from Burrell and Morgan (2016) *Sociological Paradigms and Organisational Analysis*

a **paradigm** is a set of basic and taken-for-granted assumptions which underwrite the frame of reference, mode of theorising and ways of working in which a group operates. The matrix's four paradigms represent four different ways of viewing the social and organisational world.

In the bottom right corner of the matrix is the **functionalist paradigm**. This is located on the objectivist and regulation dimensions and is the paradigm within which most business and management research operates. Research in this paradigm is concerned with rational explanations and developing sets of recommendations within the current structures. Functionalist theories and models of management, such as business process re-engineering, are often generalised to other contexts, the idea being that they can be used universally providing they are correctly implemented and monitored (Kelemen and Rumens 2008). A key assumption you would be making here as a researcher is that organisations are rational entities, in which rational explanations offer solutions to rational problems. Research projects might include an evaluation study of a communication strategy to assess its effectiveness and to offer recommendations for improvement. Research carried out within the functionalist paradigm is most likely to be underpinned by a positivist research philosophy (Section 4.4), this type of research often being referred to as 'positivist-functionalist'.



Box 4.3 Focus on student research

Researching the employees' understandings of psychological contract violation

Working within an interpretive paradigm, Robyn believed that reality is socially constructed, subjective and could be perceived in different ways by different people. While reading for her master's programme she had been surprised by how many of the research papers she read on the psychological contract (an individual's belief regarding the terms and conditions of a reciprocal agreement between themselves and another) focused on aggregate findings rather than the specific context of each individual situation. She considered that these researchers often ignored the individualistic and subjective nature of contracts as well as individuals' interpretations and responses. Robyn therefore decided her research would be concerned with what individual employees interpreted as employers' psychological contract violations, and how they understood the impact of violations on their own attitudes and behaviours. Based on a thorough review of the literature she developed three objectives:

- to provide a new understanding of how individuals interpreted their psychological contracts as being violated;
- to ascertain the ways in which individuals felt their attitudes towards their employer changed as a result of these violations;
- to explore attitudinal and behavioural consequences of this violation from the employees' perspective.

Robyn argued in her methodology chapter that, as a subjectivist, she was concerned with understanding what her research participants perceived to be the reality of their psychological contract violation as they constructed it. She stated her assumption that every action and reaction was based in a context that was interpreted by the participant as she or he made sense of what had happened. It was her participants' perceptions and their emotional reactions to these perceptions that would then inform their actions. Robyn also made clear in the methodology chapter that her research was concerned primarily with finding the meaning and emotions that each participant attached to their psychological contract violation and their reactions, rather than changing what happened in organisations. This she equated with the regulatory perspective.

The bottom left corner of the matrix represents the **interpretive paradigm**. The primary focus of research undertaken within this paradigm is the way we as humans attempt to make sense of the world around us (Box 4.4). The concern you would have working within this paradigm would be to understand the fundamental meanings attached to organisational life. Far from emphasising rationality, it may be that the principal focus you have here is discovering multiple subjectivities. Concern with studying an organisation's communication strategy may focus on understanding the ways in which it fails due to unforeseen reasons, maybe reasons which are not apparent even to those involved with the strategy. This is likely to take you into the realm of the organisation's politics and the way in which power is used. Your concern here would be to become involved in the organisation's everyday activities in order to understand and explain what is going on, rather than change things (Kelemen and Rumens 2008).

In the top right corner of the matrix, combining objectivist and radical change, is the **radical structuralist paradigm**. Here your concern would be to approach your research with a view to achieving fundamental change based upon an analysis of organisational phenomena such as structural power relationships and patterns of conflict. You would be involved in understanding structural patterns within work organisations such as hierarchies and reporting relationships and the extent to which these may produce structural domination and oppression. You would adopt an objectivist perspective due to your concern with objective entities. Research undertaken within the radical structuralist paradigm



Box 4.4 Focus on management research

Understanding meanings of power through interpretative research

In their article in *Human Relations,* Berber and Acar (2020) explore what having power means to individuals at work. The authors argue that while there have been countless studies on the sources and uses of power at work, such studies have mostly focused on organisational structures and policies. Instead, Berber and Acar want to acknowledge the role of individuals as knowers of their own experiences. The authors do not seek to make generalisable claims but rather are interested in the richness of different interpretations of 'power' as a phenomenon that can offer a new understanding of power in organisations.

Berber and Acar use interpretative phenomenological analysis (IPA) which is designed to help researchers develop an in-depth understanding of phenomena through their participants' subjective perspectives relating to their lived experiences (Smith et al, 2012). In IPA a relatively small number of participants' perspectives are explored intensively and in great detail (Larkin et al, 2006). Berber and Acar's analysis draws on semi-structured interviews with 11 participants selected to represent a homogenous group, so that divergence and convergence of different views can be observed, and the richness of individual accounts can be maintained. Berber and Acar also analyse their participants' discussion of a short case about an overlord, which formed part of the interviews.

IPA helps Berber and Acar identify key themes that explain how their participants 'craft' their own versions of power at work. The themes point to a clear divide among their demographically homogenous group between 'position-based power holders' and 'territory holders'. Berber and Acar present their findings first thematically, illustrating the themes with interview extracts, and then focusing on two particular individuals' narratives to explore their experiences in-depth. This enables the authors to develop the concept of 'power crafting' as a conceptual contribution, positioning it in relation to previous understandings of power in organisations.

is often underpinned by a critical realist philosophy (Section 4.4), although such researchers differentiate themselves from extreme objectivists.

Finally, the **radical humanist paradigm** is located within the subjectivist and radical change dimensions. As we noted earlier, the radical change dimension adopts a critical perspective on organisational life. It emphasises both the political nature of organisational realities and the consequences that one's words and deeds have upon others (Kelemen and Rumens 2008). Working within this paradigm you would be concerned with changing the status quo. As with the radical structuralist paradigm, your primary focus would concern the issues of power and politics, domination and oppression. However, you would approach these concerns from within a subjectivist ontology, which would lead you to emphasise the importance of social construction, language, processes, and instability of structures and meanings in organisational realities.

Burrell and Morgan's (2016) book, although contentious, has been highly influential in terms of how organisational scholarship is seen. One of the most strongly disputed aspects of their work is the idea of **incommensurability**: the assertion that the four paradigms contain mutually incompatible assumptions and therefore cannot be combined. This debate is often referred to as 'paradigm wars' and has implications for thinking about the relationship between paradigms and research philosophies.

Research paradigms and research philosophy

Whether or not you think that different research paradigms can be combined will depend to some extent on your own research philosophy and, going back to our discussion of philosophies as a set of assumptions, the extremity of your views on these continua (Table 4.1) and within paradigms (Figure 4.3). You will see later (Section 4.4) that pragmatists seek to overcome dichotomies such as objectivism–subjectivism in their research, and as such are quite likely to engage in multi-paradigmatic research. Critical realists, who are less objectivist than positivists, embrace 'epistemological relativism', which may include more subjectivist as well as objectivist research, ranging from radical structuralism to radical humanism. Burrell and Morgan's four paradigms for organisational analysis can therefore act as a helpful tool for mapping different research philosophies. This highlights that the connections between paradigms and research philosophies need to be seen in terms of philosophical affinity rather than equivocality, being treated with some caution and reflexivity. You will find such reflexivity easier as you become familiar with individual research philosophies.

There are good reasons to find the relationship between research paradigms and research philosophies confusing. In management research there tends to be little agreement about labels in general, and the labels 'paradigms' and 'philosophies' (and often others like 'approaches' and 'schools of thought') are sometimes used interchangeably to describe assumptions researchers make in their work. Alongside the substantial body of literature in which Burrell and Morgan's (2016) four sociological research paradigms are taken as the more-or-less enduring foundation of the management field, and in which a 'research paradigm' is taken to be specifically one of the four paradigms described by Burrell and Morgan, there is other research in which the term 'paradigm' is treated much more loosely. As a result, you may find yourself reading about, for example, the 'paradigm' (rather than 'philosophy') of positivism (see e.g. Lincoln et al. 2018).

In a similar way, you may find yourself reading about ideas that seem to cross the boundary between a 'paradigm' and a 'philosophy' (and also perhaps cross over into a 'methodology'). One example of this is the participatory inquiry – an intellectual position that emphasises experiential and practical learning and knowing, and the active

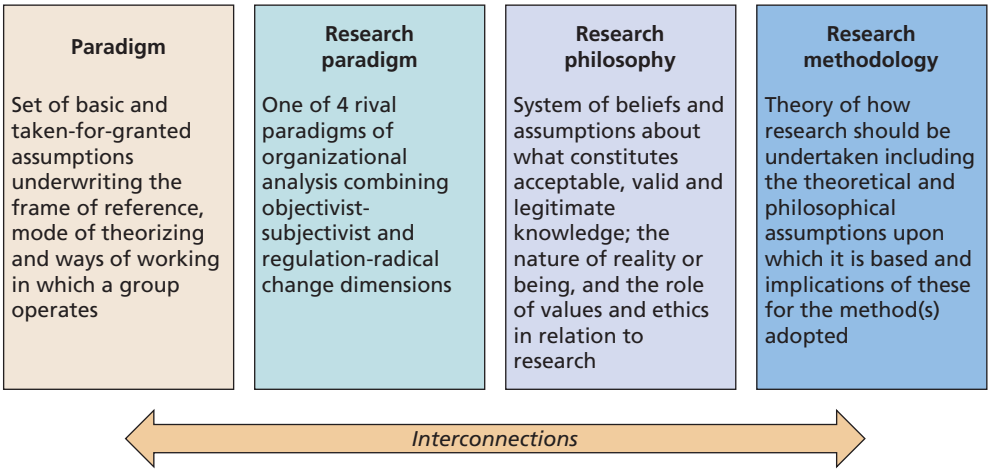


Figure 4.4 Paradigms, philosophy and methodology definitions

involvement of research participants in the making of knowledge throughout the research process. Heron and Reason (1997) call the participatory inquiry a 'paradigm' and use it to critique Guba and Lincoln's earlier (1994) work on competing paradigms. Heron and Reason also describe the ontological, epistemological and axiological foundations of the participatory inquiry (as well as its methodological implications), as we do with five management philosophies in this chapter.

Given this confusion of labels and philosophical ideas we have summarised the definitions we use in Figure 4.4. As you develop as a researcher, you will continue to further your knowledge through reading and experience, and will begin to form your own opinions about which labels and debates matter to you personally. For now, if you are just starting out on your research journey, putting some of this complexity on hold (but being aware that it exists) and using our definitions offer a good starting point. Being more familiar with the basics can also help you interpret more complex issues. For example, being familiar with the pragmatist research philosophy can help you spot how pragmatism tends to underpin and inform participatory action research.

4.4 Five management philosophies

In this section, we discuss five major philosophies in business and management: positivism, critical realism, interpretivism, postmodernism and pragmatism (Table 4.3).

Positivism

We introduced the research philosophy of positivism briefly in our discussion of objectivism and functionalism earlier in this chapter. **Positivism** relates to the philosophical stance of the natural scientist and entails working with an observable social reality to produce law-like generalisations. It promises unambiguous and accurate knowledge and originates in the works of Francis Bacon, Auguste Comte and the early twentieth-century group of philosophers and scientists known as the Vienna Circle. The label positivism refers to the importance of what is 'posited' – i.e. 'given'. This emphasises the positivist focus on strictly scientific empiricist method designed to yield pure data and facts uninfluenced by

Table 4.3 Comparison of five research philosophies in business and management research

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
	Positivism		
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measurable facts Law-like generalisations Numbers Causal explanation and prediction as contribution	Value-free research Researcher is detached, neutral and independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
	Critical realism		
Stratified/layered (the empirical, the actual and the real) External, independent Intransient Objective structures Causal mechanisms	Epistemological relativism Knowledge historically situated and transient Facts are social constructions Historical causal explanation as contribution	Value-laden research Researcher acknowledges bias by world views, cultural experience and upbringing Researcher tries to minimise bias and errors Researcher is as objective as possible	Retroductive, in-depth historically situated analysis of pre-existing structures and emerging agency Range of methods and data types to fit subject matter
	Interpretivism		
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically inductive Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted
	Postmodernism		
Nominal Complex, rich Socially constructed through power relations Some meanings, interpretations, realities are dominated and silenced by others Flux of processes, experiences, practices	What counts as 'truth' and 'knowledge' is decided by dominant ideologies Focus on absences, silences and oppressed/repressed meanings, interpretations and voices Exposure of power relations and challenge of dominant views as contribution	Value-constituted research Researcher and research embedded in power relations Some research narratives are repressed and silenced at the expense of others Researcher radically reflexive	Typically deconstructive – reading texts and realities against themselves In-depth investigations of anomalies, silences and absences Range of data types, typically qualitative methods of analysis

Pragmatism			
Complex, rich, external 'Reality' is the practical consequences of ideas Flux of processes, experiences and practices	Practical meaning of knowledge in specific contexts 'True' theories and knowledge are those that enable successful action Focus on problems, practices and relevance Problem solving and informed future practice as contribution	Value-driven research Research initiated and sustained by researcher's doubts and beliefs Researcher reflexive	Following research problem and research question Range of methods: mixed, multiple, qualitative, quantitative, action research Emphasis on practical solutions and outcomes

human interpretation or bias (Table 4.3). Today there is a 'bewildering array of positivisms', Crotty (1998) noting as many as 12 varieties.

If you were to adopt an extreme positivist position, you would see organisations and other social entities as real in the same way as physical objects and natural phenomena are real. Epistemologically you would focus on discovering observable and measurable facts and patterns, and only phenomena that you can observe and measure would lead to the production of credible and meaningful data (Crotty 1998). You would look for causal relationships in your data to create law-like generalisations like those produced by scientists. You would use these universal rules and laws to help you explain and predict behaviour and events in organisations.

As a positivist researcher you might use existing theory to develop hypotheses. These are statements providing hypothetical explanations that can be tested and confirmed, in whole or part, or refuted, leading to the further development of theory which then may be tested by further research. However, this does not mean that, as a positivist, you necessarily have to start with existing theory. All natural sciences have developed from an engagement with the world in which data were collected and observations made prior to hypotheses being formulated and tested. In fact, the original positivists emphasised the importance of inductive research due to the importance of empirical data, even though nowadays positivist research tends to be deductive (see Section 4.5). The hypotheses developed, as in Box 4.5, would lead to the gathering of facts (rather than impressions) that would provide the basis for subsequent hypothesis testing.

As a positivist you would try to remain neutral and detached from your research and data in order to avoid influencing your findings. This means that you would undertake research, as far as possible, in a value-free way. For positivists, this is a plausible position, because of the measurable, quantifiable data that they collect. They claim to be external to the process of data collection as there is little that can be done to alter the substance of the data collected. Consider, for example, the differences between data collected using an online questionnaire (Chapter 11) in which the respondent self-selects from responses predetermined by the researcher, and in-depth interviews (Chapter 10). In the online questionnaire, the researcher determines the list of possible responses as part of the design process. Subsequent to this she or he can claim that her or his values do not influence the answers given by the respondent. In contrast, an in-depth interview necessitates the researcher framing the questions in relation to each participant and interpreting their answers. Unlike in a questionnaire, these questions are unlikely to be asked in exactly the same way. Rather the interviewer exercises judgment in what to ask to collect participant-led accounts that are as rich as possible.



Box 4.5 Focus on student research

The development of hypotheses

Brett was conducting a piece of research for his project on the economic benefits of working from home during the Covid-19 pandemic. He studied the literature on home working and read two dissertations in his university's library that dealt with the same phenomenon, albeit that they did not relate specifically to the pandemic. As a result of his reading, Brett developed a number of theoretical propositions, each of which contained specific hypotheses. One of his propositions related to the potential increased costs associated with home working.

THEORETICAL PROPOSITION: Increased costs may negate the productivity gains from home working.

From this he developed four SPECIFIC HYPOTHESES:

1. Increased costs for computer hardware, software, telecommunications equipment and office furniture will negate the productivity gains from home working.
2. Home workers will require additional information-technology and wellbeing support, which will negate the productivity gains from home working.
3. Increased supervisory requirements will negate the productivity gains from home working.
4. Reduced face-to-face access by home workers to colleagues will result in lost opportunities to increase efficiencies, which will negate the productivity gains from home working.

Positivist researchers are likely to use a highly structured methodology in order to facilitate replication. Furthermore, the emphasis will be on quantifiable observations that lend themselves to statistical analysis (Box 4.5). However, as you will read in later chapters, sometimes positivist research extends itself to other data collection methods and seeks to quantify qualitative data, for example by applying hypothesis testing to data originally collected in in-depth interviews.

You may believe that excluding our own values as researchers is impossible. Even a researcher adopting a positivist stance exercises choice in the issue to study, the research objectives to pursue and the data to collect. Indeed, it could be argued the decision to try to adopt a value-free perspective suggests the existence of a certain value position! How can a researcher completely avoid influencing what is researched, even using methods considered 'objective', when she or he formulates the questions in the questionnaire or sets the parameters and conditions of the experiment? And therefore, how can a researcher stop their personal views developing into biases that prejudice their research?

If you are following this line of thinking, you are treading in the footsteps of many scholars and thinkers who have critiqued positivism. Some of these thinkers – most famously Karl Popper – have become associated with a philosophical movement called **postpositivism,** which has sought to both question positivism and reform it to address critique. The questioning of positivism has also contributed to the development of the other four research philosophies we discuss below.

Critical realism

It is important not to confuse the philosophy of critical realism with the more extreme form of realism underpinning the positivist philosophy. The latter, sometimes known as **direct realism** (or naïve empirical scientific realism), says that what you see is what you get: what we experience through our senses portrays the world accurately. By contrast, the philosophy of **critical realism** focuses on explaining what we see and experience, in terms

of the underlying structures of reality that shape the observable events. Critical realism originated in the late twentieth century in the work of Roy Bhaskar, as a response to both positivist direct realism and postmodernist nominalism (discussed later), and occupies a middle ground between these two positions (Reed 2005).

For critical realists, reality is the most important philosophical consideration, a structured and layered ontology being crucial (Fleetwood 2005). Critical realists see reality as external and independent, but not directly accessible through our observation and knowledge of it (Table 4.3). Rather, what we experience is 'the empirical', in other words sensations, which are some of the manifestations of the things in the real world, rather than the actual things. Critical realists highlight how often our senses deceive us. When you next watch a cricket match on television you are likely to see an advertisement for the sponsor on the actual playing surface. This advertisement appears to be standing upright on the pitch. However, this is an illusion. It is, in fact, painted on the grass. So we see sensations, which are representations of what is real.

Critical realism claims there are two steps to understanding the world. First, there are the sensations and events we experience. Second, there is the mental processing that goes on sometime after the experience, when we 'reason backwards' from our experiences to the underlying reality that might have caused them (this reasoning backwards is essentially abductive, but is often called 'retroduction' by critical realists (Reed 2005) – see Section 4.5). Direct realism says that the first step is enough. To pursue our cricket example, the umpire who is a direct realist would say about her or his umpiring decisions: 'I give them as they are!' The umpire who is a critical realist would say: 'I give them as I see them!' Critical realists would point out that what the umpire has observed (the 'Empirical') is only a small part of everything that he or she could have seen; a small fraction of the sum total of the 'Actual' events that are occurring at any one point in time (Figure 4.5). A player may, perhaps, have obscured the umpire's view of another player committing a foul. Critical realists would emphasise that what the umpire has not seen are the underlying causes (the 'Real') of a situation (Figure 4.5). For example, was a head-butt a real, intentional foul, or an accident? The umpire cannot experience the real significance of the situation directly. Rather, she or he has to use her/his sensory data of the 'Empirical' as observed and use reasoning to work it out.

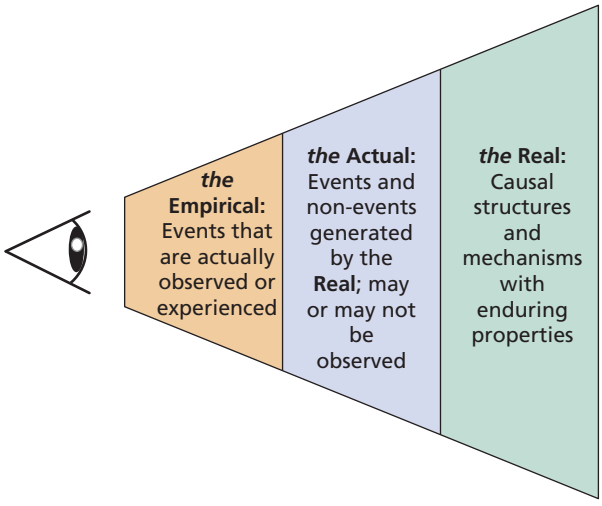


Figure 4.5 Critical realist's stratified ontology
Source: Developed from Bhaskar (2008)

If you believe that, as researchers, we need to look for the bigger picture of which we see only a small part, you may be leaning towards the critical realist philosophy. Bhaskar (2011) argues that we will only be able to understand what is going on in the social world if we understand the social structures that have given rise to the phenomena that we are trying to understand. He writes that we can identify what we do not see through the practical and theoretical processes of the social sciences. Critical realist research therefore focuses on providing an explanation for observable organisational events by looking for the underlying causes and mechanisms through which deep social structures shape everyday organisational life. Due to this focus, much of critical realist research takes the form of in-depth historical analysis of social and organisational structures, and how they have changed over time (Reed 2005).

Within their focus on the historical analysis of structures, critical realists embrace epistemological relativism (Reed 2005), a (mildly) subjectivist approach to knowledge. **Epistemological relativism** recognises that knowledge is historically situated (in other words, it is a product of its time and is specific to it), and that social facts are social constructions agreed on by people rather than existing independently (Bhaskar 2008). This implies critical realist notions of causality cannot be reduced to statistical correlations and quantitative methods, and a range of methods is acceptable (Reed 2005). A critical realist's axiological position follows from the recognition that our knowledge of reality is a result of social conditioning (e.g. we know that if the cricket player runs into an advertisement that is actually standing up he or she will fall over!) and cannot be understood independently of the social actors involved. This means that, as a critical realist researcher, you would strive to be aware of the ways in which your socio-cultural background and experiences might influence your research, and would seek to minimise such biases and be as objective as possible.

Interpretivism

Interpretivism, like critical realism, developed as a critique of positivism but from a subjectivist perspective. **Interpretivism** emphasises that humans are different from physical phenomena because they create meanings. Interpretivists study these meanings. Interpretivism emerged in early- and mid-twentieth-century Europe, in the work of German, French and occasionally English thinkers, and is formed of several strands, most notably hermeneutics, phenomenology and symbolic interactionism (Crotty 1998). Interpretivists argue that human beings and their social worlds cannot be studied in the same way as physical phenomena, and that therefore social sciences research needs to be different from natural sciences research rather than trying to emulate the latter (Table 4.3). As different people of different cultural backgrounds, under different circumstances and at different times make different meanings, and so create and experience different social realities, interpretivists are critical of the positivist attempts to discover definite, universal 'laws' that apply to everybody. Rather they believe rich insights into humanity are lost if such complexity is reduced entirely to a series of law-like generalisations.

The purpose of interpretivist research is to create new, richer understandings and interpretations of social worlds and contexts. For business and management researchers, this means looking at organisations from the perspectives of different groups of people. They would argue that the ways in which, for example, the CEO, board directors, managers, warehouse assistants and cleaners of a large online retail company see and experience the organisation are different, so much so that they could arguably be seen as experiencing

different workplace realities. If research focuses on the experiences that are common to all at all times, much of the richness of the differences between them and their individual circumstances will be lost, and the understanding of the organisation that the research delivers will reflect this. Furthermore, differences that make organisations complex are not simply constrained to different organisational roles. Male or female employees, or those from different ethnic/cultural backgrounds, may experience workplaces in different ways. Interpretations of what on the surface appears to be the same thing (such as a particular product, process, or outcome) can differ between historical or geographical contexts.

Interpretivist researchers try to take account of this complexity by collecting what is meaningful to their research participants (Box 4.6). Different strands of interpretivism place slightly different emphasis on how to do this in practice, so **phenomenologists,** who study existence, focus on participants' lived experiences; that is, the participants' recollections and interpretations of those experiences (Box 4.4). **Hermeneuticists** focus on the study of cultural artefacts such as texts, symbols, stories, and images. **Symbolic interactionists,** whose tradition derives from pragmatist thinking (discussed later in this section) and who see meaning as something that emerges out of interactions between people, focus on the observation and analysis of social interaction such as conversations, meetings, and teamwork. In general, interpretivists emphasise the importance of language, culture and history (Crotty 1998) in the shaping of our interpretations and experiences of organisational and social worlds.

With its focus on complexity, richness, multiple interpretations and meaning-making, interpretivism is explicitly subjectivist. An axiological implication of this is that interpretivists recognise that their interpretation of research materials and data, and thus their own values and beliefs, play an important role in the research process. Crucial to the interpretivist philosophy is the researcher adopting an empathetic stance. The challenge for the interpretivist is to enter the social world of the research participants and understand that world from their point of view. Some would argue the interpretivist perspective is highly appropriate in the case of business and management research. Not only are business situations complex, they are often unique, at least in terms of context. They reflect a particular set of circumstances and interactions involving individuals coming together at a specific time.



Box 4.6 Focus on management research

Emotional journeys when initiating workplace improvements

Bindl's (2019) research on proactive employees who initiate improvement at work sought to understand their emotional journeys when making things happen. In her qualitative study she adopted an interpretivist philosophy, immersing herself in the data as she alternated between collection, analysis and theorising. Her paper in *Human Relations* outlines how she investigated a multinational company's service centre employers' and managers' emotional experiences to develop theory. Derived from data from 60 face-to-face interviews with 39 participants about their experiences and overt observations from shadowing 15 participants, Bindl argues that her findings provide an in-depth account in the service centre of emotional experiences the process of engaging in proactivity. These reveal that employees' journeys took alternative emotional paths, giving rise to either frustration, fear or excitement, joy and pride; and impacting differently on their future willingness to be proactive.

Postmodernism

Postmodernism (not to be confused with postmodernity, which denotes a particular historical era) emphasises the role of language and of power relations, seeking to question accepted ways of thinking and give voice to alternative marginalised views (Table 4.3). It emerged in the late twentieth century and has been most closely associated with the work of French philosophers Jean-François Lyotard, Jacques Derrida, Michel Foucault, Gilles Deleuze, Félix Guattari and Jean Baudrillard. Postmodernism is historically entangled with the intellectual movement of poststructuralism. As the differences in focus between postmodernism and poststructuralism are subtle and have become less discernible over time, in this chapter we will focus on one label, postmodernism.

Postmodernists go even further than interpretivists in their critique of positivism and objectivism, attributing even more importance to the role of language (Table 4.3). They reject the modern objectivist, realist ontology of things, and instead emphasise the chaotic primacy of flux, movement, fluidity and change. They believe that any sense of order is provisional and foundationless, and can only be brought about through our language with its categories and classifications (Chia 2003). At the same time they recognise that language is always partial and inadequate. In particular, it always marginalises, suppresses and excludes aspects of what it claims to describe, while privileging and emphasising other aspects. As there is no order to the social world beyond that which we give to it through language, there is no abstract way of determining the 'right' or the 'true' way to describe the world. Instead, what is generally considered to be 'right' and 'true' is decided collectively. These collective 'choices', in turn, are shaped by the power relations and by the ideologies that dominate particular contexts (Foucault 2020). This does not mean the dominant ways of thinking are necessarily the 'best' – only that they are seen as such at a particular point in time by particular groups of people. Other perspectives that are suppressed are potentially just as valuable and have the power to create alternative worlds and truths.

Postmodernist researchers seek to expose and question the power relations that sustain dominant realities (Calás and Smircich 2018). This takes the form of 'deconstructing' (taking apart) these realities, as if they were texts, to search for instabilities within their widely accepted truths, and for what has not been discussed – absences and silences created in the shadow of such truths (Derrida 2016). Postmodernists strive to make what has been left out or excluded more visible by the deconstruction of what counts as 'reality' into ideologies and power relations that underpin it, as you would dismantle an old building into the bricks and mortar that make it up. The goal of postmodern research is therefore to radically challenge the established ways of thinking and knowing (Kilduff and Mehra 1997) and to give voice and legitimacy to the suppressed and marginalised ways of seeing and knowing that have been previously excluded (Chia 2003).

As a postmodernist researcher, you would, instead of approaching the organisational world as constituted by things and entities such as 'management', 'performance' and 'resources', focus on the ongoing processes of organising, managing and ordering that constitute such entities. You would challenge organisational concepts and theories, and seek to demonstrate what perspectives and realities they exclude and leave silent and whose interests they serve. You would be open to the deconstruction of any forms of data – texts, images, conversations, voices and numbers. Like interpretivists, you would be undertaking in-depth investigations of organisational realities. Fundamental to postmodernist research is the recognition that power relations between the researcher and research

subjects shape the knowledge created as part of the research process. As power relations cannot be avoided, it is crucial for researchers to be open about their moral and ethical positions (Calás and Smircich 2018), and thus you would strive to be radically reflexive about your own thinking and writing (Cunliffe 2003).

Pragmatism

By now you may be thinking: do these differences in assumptions really matter? The proponents of the philosophies discussed above would say that they do, as they delineate fundamentally different ways of seeing the world and carrying out research. However, you may be feeling differently. If you are becoming impatient with the battle of ontological, epistemological and axiological assumptions between the different philosophies, if you are questioning their relevance, and if you would rather get on with research that would focus on making a difference to organisational practice, you may be leaning towards the philosophy of pragmatism. However, you need to be sure that you are not treating pragmatism as an escape route from the challenge of understanding other philosophies!

Pragmatism asserts that concepts are only relevant where they support action (Kelemen and Rumens 2008). Pragmatism originated in the late-nineteenth–early-twentieth-century USA in the work of philosophers Charles Pierce, William James and John Dewey. It strives to reconcile both objectivism and subjectivism, facts and values, accurate and rigorous knowledge and different contextualised experiences (Table 4.3). It does this by considering theories, concepts, ideas, hypotheses and research findings not in an abstract form, but in terms of the roles they play as instruments of thought and action, and in terms of their practical consequences in specific contexts (Table 4.3; Box 4.7). Reality matters to pragmatists as practical effects of ideas, and knowledge is valued for enabling actions to be carried out successfully.

For a pragmatist, research starts with a problem, and aims to contribute practical solutions that inform future practice. Researcher values drive the reflexive process of inquiry, which is initiated by doubt and a sense that something is wrong or out of place, and which recreates belief when the problem has been resolved (Elkjaer and Simpson 2011). As pragmatists are more interested in practical outcomes than abstract distinctions, their research may have considerable variation in terms of how 'objectivist' or 'subjectivist' it turns out to be. If you were to undertake pragmatist research, this would mean that the most important determinant for your research design and strategy would be the research problem that you would try to address, and your research question. Your research question, in turn, would be likely to incorporate the pragmatist emphasis of practical outcomes.

If a research problem does not suggest unambiguously that one particular type of knowledge or method should be adopted, this only confirms the pragmatist's view that it is perfectly possible to work with different types of knowledge and methods. This reflects a recurring theme in this book – that multiple methods are often possible, and possibly highly appropriate, within one study (see Section 5.3). Pragmatists recognise that there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities. This does not mean that pragmatists always use multiple methods; rather they use the method or methods that enable credible, well-founded, reliable and relevant data to be collected that advance the research (Kelemen and Rumens 2008).



Box 4.7 Focus on management research

Researching accounting practices

In an article in the *Journal of Applied Accounting,* Rutherford (2016) highlights the schism between accounting practices and accounting research. Within this he comments that for over four decades academics have undertaken relatively little 'classical accounting research' (p. 119), that is research on practices of accounting such as financial reporting. Rutherford notes that one barrier to academics undertaking such research is the lack of a theoretical base. This, he argues, can be overcome by using pragmatism as the underpinning for theorisation, thereby providing a clear philosophical justification for research to improve practice. Resumption of such research would, he considers, contribute positively to future accounting standard-setting.

4.5 Approaches to theory development

We emphasised that answering your research question will involve the use of theory (Chapter 2). That theory may or may not be made explicit in the design of the research (Chapter 5), although it will usually be made explicit in your presentation of the findings and conclusions. The extent to which answering your research question involves theory testing or theory building raises an important issue regarding the design of your research project. This is often portrayed as two contrasting approaches to the reasoning you adopt: deductive or inductive; although as we highlight in Table 4.4 reasoning can, alternatively, be abductive. Deductive reasoning occurs when the conclusion is derived logically from a set of theory-derived premises, the conclusion being true when all the premises are true (Ketokivi and Mantere 2010). For example, our research might ask: to what extent is demand likely to exceed supply for a soon-to-be-launched new mobile phone? We form three premises:

- that retailers have been allocated limited stock of the new mobile phones by the manufacturer;
- that customers' demand for the phones exceeds supply;
- that retailers allow customers to pre-order the phones.

If these premises are true we can deduce that the conclusion that online will have 'sold' their entire allocation of the new mobile phone by the release day will also be true.

In contrast, in inductive reasoning there is a gap in the logic argument between the conclusion and the premises observed, the conclusion being 'judged' to be supported by the observations made (Ketokivi and Mantere 2010). Returning to our question regarding the likely demand for a soon-to-be-launched mobile phone, we would start with observations about the forthcoming launch. Our observed premises would be:

- that news media are reporting that retailers are complaining about only being allocated limited stock of the new mobile phone by manufacturers;
- that news media are reporting that demand for the phones will exceed supply;
- that retailers are allowing customers to pre-order the phones.

Based on these observations, we have good reason to believe retailers' demand will have exceeded supply and they will have 'sold' their entire allocation of the new mobile phone by the release day. However, although our conclusion is supported by our observations, it is not guaranteed. In the past, manufacturers have launched new phones which have had underwhelming sales (Griffin 2019).

There is also a third approach to theory development that is just as common in research, abductive reasoning, which begins with a 'surprising fact' being observed (Ketokivi and Mantere 2010). This surprising fact is the conclusion rather than a premise. Based on this conclusion, a set of possible premises is determined that is considered sufficient or nearly sufficient to explain the conclusion. It is reasoned that, if this set of premises were true, then the conclusion would be true as a matter of course. Because the set of premises is sufficient (or nearly sufficient) to generate the conclusion, this provides reason to believe that it is also true. Returning once again to our example of the likely retail demand for a soon-to-be-launched new mobile phone, a surprising fact (conclusion) might be that retailers are reported in the news media as stating they will have no remaining stock of the new mobile phone for sale on the day of its release. However, if the retailers are allowing customers to pre-order the mobile phone prior to its release then it would not be surprising if these retailers had already sold their allocation of phones. Therefore, using abductive reasoning, the possibility that retailers have no remaining stock on the day of release is reasonable.

Building on these three approaches to theory development (Figure 4.1), if your research starts with theory, often developed from your reading of the academic literature, and you design a research strategy to test the theory, you are using a **deductive approach** (Table 4.4). Conversely, if your research starts by collecting data to explore a phenomenon and you generate or build theory (often in the form of a conceptual framework), then you are using an **inductive approach** (Table 4.4). Where you are collecting data to explore a phenomenon, identify themes and explain patterns, to generate a new or modify an existing theory that you subsequently test through additional data collection, you are using an **abductive approach** (Table 4.4).

Table 4.4 Deduction, induction and abduction: from reason to research

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory
Philosophical underpinning*	Positivism (Pragmatism)	Interpretivism (Critical realism) (Postmodernism) (Pragmatism)	(Interpretivism) Critical realism Postmodernism Pragmatism

* brackets indicate use is less frequent within this philosophy

The next three sub-sections explore the differences and similarities between these three approaches and their implications for your research.

Deduction

As noted earlier, deduction owes much to what we would think of as scientific research. It involves the development of a theory that is then subjected to a rigorous test through a series of propositions. As such, it is the dominant approach to theory development in natural science research, where laws present the basis of explanation, allow the anticipation of phenomena, predict their occurrence and therefore permit them to be controlled.

Blaikie and Priest (2019) list sequential steps through which a deductive approach will progress:

1. Put forward a tentative idea, a premise, a hypothesis (a testable proposition about the relationship between two or more concepts or variables) or set of hypotheses to form a theory.
2. By using existing literature, or by specifying the conditions under which the theory is expected to hold, deduce a testable proposition or number of propositions.
3. Examine the premises and the logic of the argument that produced them, comparing this argument with existing theories to see if it offers an advance in understanding. If it does, then continue.
4. Test the premises by collecting appropriate data to measure the concepts or variables and analysing them.
5. If the results of the analysis are not consistent with the premises (the tests fail!), the theory is false and must either be rejected or modified and the process restarted.
6. If the results of the analysis are consistent with the premises then the theory is corroborated.

Deduction possesses several important characteristics. First, there is the search to explain causal relationships between concepts and variables. It may be that your research question is: Why is there high employee absenteeism in a retail store? After reading about absence patterns in the academic literature you develop a theory that there is a relationship between absence, the age of workers and length of service. Consequently, you develop a number of hypotheses, including one which states absenteeism is significantly more likely to be prevalent among younger workers and another which states absenteeism is significantly more likely to be prevalent among workers who have been employed by the organisation for a relatively short period of time. To test these hypotheses you collect quantitative data. (This is not to say that a deductive approach may not use qualitative data.) It may be there are important differences in the way work is arranged in different stores: therefore you would need to specify precisely the conditions under which your theory is likely to hold and collect appropriate data within these conditions. By doing this you would help to ensure that any change in absenteeism was a function of worker age and length of service rather than any other aspect of the store, for example the way employees were managed. Your research would use a highly **structured methodology** to facilitate replication, an important issue to ensure reliability, as we emphasise in Section 5.11.

An additional important characteristic of deduction is that concepts need to be **operationalised** to enable facts to be measured, often quantitatively. In our example, one variable needing to be measured is absenteeism. Just what constitutes absenteeism would have to be strictly defined: an absence for a complete day would probably count, but what about absence for two hours? In addition, what would constitute a 'short period of employment' and 'younger' employees? What is happening here is that the principle of

reductionism is being followed. This holds problems as a whole are better understood if they are reduced to the simplest possible elements.

The final characteristic of deduction is **generalisation.** In order to be able to generalise it is necessary to select our sample carefully and for it to be of sufficient size (Sections 7.2 and 7.3). In our example above, research at a particular store would allow us only to make inferences about that store; it would be dangerous to predict that worker youth and short length of service lead to absenteeism in all cases. This is discussed in more detail in Section 5.11.

As a scientific approach that emphasises structure, quantification, generalisability and testable hypotheses, the deductive approach is most likely to be underpinned by the positivist research philosophy.

Induction

An alternative approach to answering the question and developing theory on retail store employee absenteeism would be to start by interviewing a sample of the employees and their line managers about the experience of working at the store. The purpose here would be to get a feel of what was going on, so as to understand better the nature of employee absenteeism. Your task then would be to make sense of the interview data you collected through your analysis. The result of this analysis would be the formulation of a theory, often expressed as a conceptual framework. This may be that there is a relationship between absence and the length of time an employee has worked for the retail store. Alternatively, you may discover that there are other competing reasons for absence that may or may not be related to employee age or length of service. You may end up with the same theory, but your reasoning uses an inductive approach: theory follows data rather than vice versa, as with deduction.

We noted earlier that deduction has its origins in research in the natural sciences. However, the emergence of the social sciences in the twentieth century led social science researchers to be wary of deduction. They were critical of a reasoning approach that enabled a cause–effect link to be made between particular variables without an understanding of the way in which humans interpreted their social world. Developing such an understanding is, of course, the strength of an inductive approach. In our absenteeism example, if you were adopting an inductive approach you would be treating employees as humans whose attendance is a consequence of how they perceive their work experience, rather than as unthinking research objects responding mechanistically to certain circumstances.

Followers of induction criticise deduction's tendency to construct a rigid methodology that does not permit alternative explanations of what is going on. In that sense, there is an air of finality about the choice of theory and definition of the hypothesis in deduction. Alternative theories may be suggested, but these would be within the limits set by the highly structured research design. In this respect, a significant characteristic of the absenteeism research design noted earlier is the operationalisation of concepts. As we saw in the absenteeism example, age was precisely defined. However, a less structured approach might reveal alternative explanations of the absenteeism–age relationship denied by a more strict definition.

Research using an inductive approach to reasoning is likely to be particularly concerned with the context in which such events take place. Therefore, the study of a small sample of subjects might be more appropriate than a large number as with the deductive approach. Researchers in this tradition are more likely to work with qualitative data and to use a variety of methods to collect these data in order to establish different views of phenomena (as will be seen in Chapter 10).

Due to its connection to humanities and its emphasis on the importance of subjective interpretations, the inductive approach is most likely to be informed by the interpretivist philosophy (Table 4.4).

Abduction

Instead of moving from theory to data (as in deduction) or data to theory (as in induction), an abductive approach moves between data and theory, making comparisons and interpretations, in effect combining deduction and induction (Suddaby 2006). Although Arthur Conon Doyle (1989) refers to the detective Sherlock Holmes as using deduction, he is actually using abduction. An abductive researcher, in a similar manner to Sherlock Holmes 'selects or invents a provisional hypothesis to explain a particular empirical case or dataset . . . and pursu[es] this hypothesis through further investigation' (Kennedy and Thornberg 2018: 52). Abductive theory development is therefore open and sensitive to data while also using pre-existing theories for inspiration and to help identify and interpret patterns. This, as we have noted earlier, matches what many business and management researchers actually do. It begins with the observation of a surprising phenomenon or fact; it then works out a plausible theory of how this could have occurred. Van Maanen et al. (2007) note that some plausible theories can account for what is observed better than others and it is these theories that will help lead to more surprises. These, they argue, can occur at any stage in the research process, including when writing your project report! Van Maanen et al. also stress that deduction and induction complement abduction as logics for testing plausible theories.



Box 4.8 Focus on management research

Developing empirical knowledge and theory abductively through engaged research

Participative and engaged research, in which research participants play an active role in co-designing the research project with researchers, often requires an abductive research approach. In their paper in *Management Learning,* Bristow and colleagues (2021) draw on their engaged ethnography (Cunliffe and Scaratti 2017; Van de Ven 2007) in a major city policing organisation to explore the politics of organisational learning. The authors explain that the engaged nature of their project meant that they were deeply embedded in the police organisation they were researching and also themselves implicated in the politics of learning of which they write. Conversely, the police officers, staff and senior leaders in their study contributed to shaping their study through ongoing negotiation of the direction and themes that emerged during the course of the project. This has also led to a succession of theoretical lenses that were adopted and developed through an iterative, abductive process.

Bristow and colleagues note the importance of multiple sources of data (observation notes, semi-structured interviews and organisational documents) and multiple points of reference (within the research team itself and among their policing colleagues) for empirical themes and conceptual frameworks to gain resonance through multiple abductive cycles. This process, the authors argue, has enabled them to develop theory (a dialectical approach to the politics of learning) in a way that is better able to reflect the complexities of organisational life. In turn, their emergent theoretical lens has enabled them to explore how four different political modalities of learning interplay in complex and contradictory ways within the policing organisation, thus helping them make an empirical as well as a theoretical contribution to knowledge.

Applying an abductive approach to our research on the reasons for high employee absenteeism in a retail store would mean obtaining data that were sufficiently detailed and rich to allow us to explore the phenomenon and identify and explain themes and patterns regarding employee absenteeism. We would then try to integrate these explanations in an overall conceptual framework, thereby developing a theory of employee absenteeism in a retail store. This we would test using evidence provided by existing data and new data, revising as necessary (Box 4.8).

Due to the flexibility of the abductive approach, it can be used by researchers from within a number of different research philosophies. In fact, some would argue that because pure deduction or pure induction are so difficult (or even impossible) to achieve, most management researchers in practice use at least some element of abduction. However, a well-developed abductive approach is most likely to be underpinned by pragmatism or postmodernism, and can also be underpinned by critical realism.

The abductive approach is sometimes called 'retroduction'. In fact, **retroduction** is believed to be the original label for what has become known as abduction through corrupt translation and misunderstanding of older philosophical texts (Peirce 1896). Apart from this trivia, the notion 'retroduction' may be important to you as a researcher if your chosen research philosophy is critical realism. Critical realists often choose to describe their approach as retroductive in order to emphasise the historical aspect of their research, where they would start with a surprising phenomenon in the present and move backwards in time in order to identify the underlying mechanisms and structures that might have produced it (Reed 2005).

Choosing an approach to theory development

At this stage you may be asking yourself: So what? Why is the choice that I make about my approach to theory development so important? Easterby-Smith et al. (2012) suggest three reasons. First, it enables you to take a more informed decision about your research design (Chapter 5), which is more than just the procedures by which data are collected and techniques by which they are analysed. It is the overall configuration of a piece of research involving questions about what kind of evidence is gathered and from where, and how such evidence is interpreted in order to provide good answers to your initial research question.

Second, it will help you to think about those research strategies and methodological choices that will work for you and, crucially, those that will not. For example, if you are particularly interested in understanding why something is happening, rather than being able to describe what is happening, it may be more appropriate to undertake your research inductively rather than deductively.

Third, Easterby-Smith et al. (2012) argue that knowledge of the different research traditions enables you to adapt your research design to cater for constraints. These may be practical, involving, say, limited access to data, or they may arise from a lack of prior knowledge of the subject. You simply may not be in a position to frame a hypothesis because you have insufficient understanding of the topic to do this.

So far, when discussing induction and deduction we have conveyed the impression that there are rigid divisions between deduction and induction. This would be misleading. As we have seen in our discussion of abduction, it is possible to combine deduction and induction within the same piece of research. It is also, in our experience, often advantageous to do so, although often one approach or another is dominant.

At this point you may be wondering whether your reasoning will be predominantly deductive, inductive or abductive. The honest answer is, 'it depends'. In particular, it

depends on your research philosophy, the emphasis of the research (Box 4.9) and the nature of the research topic. Different philosophies tend to lead researchers to different approaches: so positivists tend to deduction, interpretivists to induction, and postmodernists, pragmatists and critical realists to abduction (although critical realists would often call their approach 'retroduction') (Table 4.4). A topic on which there is a wealth of literature from which you can define a theoretical framework and a hypothesis lends itself more readily to deduction. With research into a topic that is new, is exciting much debate and on which there is little existing literature, it may be more appropriate to work inductively by generating data and analysing and reflecting upon what theoretical themes the data are suggesting. Alternatively, a topic about which there is a wealth of information in one context but far less in the context in which you are researching may lend itself to an abductive approach, enabling you to modify an existing theory.

The time you have available will be an issue. Deductive research can be quicker to complete, albeit that time must be devoted to setting up the study prior to data collection and analysis. Data collection is often based on 'one take'. It is normally possible to predict the time schedules accurately. On the other hand, abductive and, particularly, inductive research can be much more protracted. Often the ideas, based on a much longer period of data collection and analysis, emerge gradually. This leads to another important consideration, the extent to which you are prepared to indulge in risk. Deduction can be a lower-risk strategy, although there are risks, such as the non-return of questionnaires. With induction and abduction, you have to live with the uncertainty about when and how useful and interesting data patterns and theory will emerge. Finally, there is the question of audience. In our experience, managers are usually most familiar with deduction and more likely to put faith in the conclusions emanating from this approach. You may also wish to consider the preferences of the person marking your research report. We all have our preferences about the approach to adopt.



Box 4.9
Focus on student research

Deductive, inductive and abductive research

Sadie decided to conduct a research project to answer the question: To what extent does violence at work affect the stress levels of staff and why? She considered the different ways she would approach the work were she to adopt:

- the deductive approach;
- the inductive approach;
- the abductive approach.

If she adopted a deductive approach to her reasoning, she would have to:

1 start with the hypothesis that staff working directly with the public are more likely to experience the threat or reality of violence and resultant stress;
2 decide to research a population in which she would have expected to find evidence of violence, for example, a sizeable social security office;
3 administer a questionnaire to a large sample of staff in order to establish the extent of violence (either actually experienced or threatened) and the levels of stress experienced by them;
4 be particularly careful about how she defined violence;
5 standardise the stress responses of the staff, for example, days off sick or sessions with a counsellor.

If she adopted an inductive approach then she might have decided to interview a sample of staff who had been subjected to violence at work. She might have been interested in their feelings about the events that they had experienced, how they coped with the

problems they experienced and their views about the possible causes of the violence.

If she adopted an abductive approach, she might have developed a conceptual model on the basis of her interviews. She might then have used this model to develop a series of hypotheses and designed a questionnaire to collect data from a sample of staff with which to test these hypotheses. Based on analyses of these data she might then have refined her conceptual model.

All approaches would have yielded valuable data about this problem (indeed, within this abductive approach, both inductive and deductive approaches would have been used at different stages) and supported theory development. Sadie concluded that no approach should be thought of as better than the others. Each is better at different things. Sadie realised that she needed to decide where her research emphasis lay and choose her research approach accordingly.

This last point suggests that not all your decisions about the approach to reasoning should always be practically based. Hakim (2000) uses an architectural metaphor to illustrate this. She introduces the notion of the researcher's preferred style, which, rather like the architect's, may reflect 'the architect's own preferences and ideas . . . and the stylistic preferences of those who pay for the work and have to live with the final result' (Hakim 2000: 1). This echoes the feelings of Buchanan et al. (2013: 59), who argue that 'needs, interests and preferences (of the researcher) . . . are typically overlooked but are central to the progress of fieldwork'. However, a note of caution. While researchers often refine their research questions as the research progresses, changing completely the essence of the research question can be problematic, if only because you only have a limited amount of time to complete your research project. Ensuring that the essence of the research question does not change is particularly important if it has been defined by an organisation, for example, as a consultancy project they wish you to undertake.

4.6 Summary

- The term 'research philosophies' refers to systems of beliefs and assumptions about the development of knowledge. This means that your research philosophy contains important assumptions about the way in which you view the world. These assumptions shape all aspects of your research projects.
- To understand your research philosophy, you need to develop the skill of reflexivity, which means asking yourself questions about your beliefs and assumptions, and treating these with the same scrutiny as you would apply to the beliefs of others.
- From the pluralist perspective adopted in this book, there is no single 'best' business and management research philosophy. Each philosophy contributes a unique and valuable way of seeing the organisational world.
- All research philosophies make at least three major types of assumption: ontological, epistemological and axiological. We can distinguish different philosophies by the differences and similarities in their ontological, epistemological and axiological assumptions.
  - Ontology concerns researchers' assumptions about the nature of the world and reality. Ontological assumptions you make determine what research objects and phenomena you focus on, and how you see and approach them.
  - Epistemology concerns assumptions about knowledge – how we know what we say we know, what constitutes acceptable, valid and legitimate knowledge, and how we can

communicate knowledge to fellow human beings. Epistemological assumptions you make determine what sort of contribution to knowledge you can make as a result of your research.
    - Axiology refers to the role of values and ethics within the research process, which incorporates questions about how we, as researchers, deal with our own values and also with those of our research participants.
- Research philosophies can be differentiated in terms of where their assumptions fall on an objectivism–subjectivism continua.
    - Objectivism incorporates assumptions of the natural sciences. It entails realist ontology (which holds that social entities exist in reality external to and independent from social actors), epistemology focused on the discovery of truth by means of observable, measurable facts, and claims to have a value-free, detached axiology.
    - Subjectivism incorporates assumptions of the arts and humanities. It entails nominalist ontology (which holds that social phenomena are created through the language, perceptions and consequent actions of social actors), epistemology focused on the social actors' opinions, narratives, interpretations, perceptions that convey these social realities, and claims to have a value-bound, reflexive axiology.
- Management and business research can be understood in terms of Burrell and Morgan's (2016) four social research paradigms: functionalist, interpretive, radical structuralist and radical humanist. These paradigms add the dimension of the political rationale for research to the objectivism–subjectivism continua.
- We have discussed five major philosophies: positivism, critical realism, interpretivism, postmodernism and pragmatism.
    - Positivism relates to the philosophical stance of the natural scientist. This entails working with an observable social reality and the end product can be law-like generalisations similar to those in the physical and natural sciences.
    - Critical realism focuses on explaining what we see and experience in terms of the underlying structures of reality that shape the observable events. Critical realists tend to undertake historical analyses of changing or enduring societal and organisational structures, using a variety of methods.
    - Interpretivism is a subjectivist philosophy, which emphasises that human beings are different from physical phenomena because they create meanings. Interpretivists study meanings to create new, richer understandings of organisational realities. Empirically, interpretivists focus on individuals' lived experiences and cultural artefacts, and seek to include their participants' as well as their own interpretations into their research.
    - Postmodernism emphasises the world-making role of language and power relations. Postmodernists seek to question the accepted ways of thinking and give voice to alternative worldviews that have been marginalised and silenced by dominant perspectives. Postmodernists deconstruct data to expose the instabilities and absences within them. Postmodernist axiology is radically reflexive.
    - Pragmatist ontology, epistemology and axiology are focused on improving practice. Pragmatists adopt a wide range of research strategies, the choice of which is driven by the specific nature of their research problems.
- There are three main approaches to theory development: deduction, induction and abduction.
    - With deduction, a theory and hypothesis (or hypotheses) are developed and a research strategy designed to test the hypothesis.
    - With induction, data are collected and a theory developed as a result of the data analysis.
    - With abduction (sometimes referred to as retroduction by critical realists), data are used to explore a phenomenon, identify themes and explain patterns, to generate a new or modify an existing theory which is subsequently tested, often through additional data collection.

Self-check questions

Help with these questions is available at the end of the chapter.

4.1 You have decided to undertake a project and have defined the main research question as 'What are the opinions of consumers on a 10 per cent reduction in weight, with the price remaining the same, of "Snackers" chocolate bars?' Write a hypothesis that you could test in your project.

4.2 Why may it be argued that the concept of 'the manager' is socially constructed rather than 'real'?

4.3 Why are the radical research paradigms relevant in business and management research, given that most managers would say that the purpose of organisational investigation is to develop recommendations for action to solve problems without radical change?

4.4 You have chosen to undertake your research project following a deductive approach. What factors may cause you to work inductively, although working deductively is your preferred choice?

Review and discussion questions

4.5 Visit an online database or your university library and obtain a copy of a research-based refereed journal article that you think will be of use to an assignment you are currently working on. Read this article carefully. From within which philosophical perspective do you think this article is written? Use Section 4.4 to help you develop a clear justification for your answer.

4.6 Think about the last assignment you undertook for your course. In undertaking this assignment, were you predominantly inductive, deductive or abductive? Discuss your thoughts with a friend who also undertook this assignment.

4.7 Agree with a friend to watch the same television documentary.

- **a** To what extent is the documentary inductive, deductive or abductive in its use of data?
- **b** Is the documentary based on positivist, critical realist, interpretivist, postmodernist or pragmatist assumptions?
- **c** Do not forget to make notes regarding your reasons for your answers to each of these questions and to discuss your answers with your friend.



Progressing your research project

Heightening your Awareness of your Research Philosophy (HARP)*

HARP is a reflexive tool that has been designed by Bristow and Saunders to help you explore your research philosophy. It is just a starting point for enabling you to ask yourself more refined questions about how you see research. It will not provide you with a definitive answer to the question 'What is my research philosophy?' Rather it will give you an indication as to where your views are similar to and different from those of five major philosophical traditions discussed in this chapter. Do not be surprised if your views are similar to more than one tradition. Such potential tensions are an ideal opportunity to inquire into and examine your beliefs further.

HARP consists of six sections each comprising five statements (a total of 30 statements). Each section considers one aspect of philosophical beliefs (ontology, epistemology, axiology, purpose of research, meaningfulness of data and structure/agency). Each statement epitomises a particular research philosophy's position in relation to that particular aspect.

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Progressing your research project (*continued*)

Heightening your Awareness of your Research Philosophy (HARP)

By indicating your agreement or disagreement with each statement you can discover your similarities and differences with different aspects of each research philosophy. Following the completion of HARP, refer to the scoring key to calculate your score and interpret your answer.

HARP statements

	Please indicate your agreement or disagreement with the statements below. There are no wrong answers.	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Your views on the nature of reality (ontology)							
1	Organisations are real, just like physical objects.	❑	❑	❑	❑	❑	❑
2	Events in organisations are caused by deeper, underlying mechanisms.	❑	❑	❑	❑	❑	❑
3	The social world we inhabit is a world of multiple meanings, interpretations and realities.	❑	❑	❑	❑	❑	❑
4	'Organisation' is not a solid and static thing but a flux of collective processes and practices.	❑	❑	❑	❑	❑	❑
5	'Real' aspects of organisations are those that impact on organisational practices.	❑	❑	❑	❑	❑	❑
Your views on knowledge and what constitutes acceptable knowledge (epistemology)							
6	Organisational research should provide scientific, objective, accurate and valid explanations of how the organisational world really works.	❑	❑	❑	❑	❑	❑
7	Theories and concepts never offer completely certain knowledge, but researchers can use rational thought to decide which theories and concepts are better than others.	❑	❑	❑	❑	❑	❑
8	Concepts and theories are too simplistic to capture the full richness of the world.	❑	❑	❑	❑	❑	❑
9	What generally counts as 'real', 'true' and 'valid' is determined by politically dominant points of view.	❑	❑	❑	❑	❑	❑
10	Acceptable knowledge is that which enables things to be done successfully.	❑	❑	❑	❑	❑	❑
Your views on the role of values in research (axiology)							
11	Researchers' values and beliefs must be excluded from the research.	❑	❑	❑	❑	❑	❑
12	Researchers must try to be as objective and realistic as they can.	❑	❑	❑	❑	❑	❑
13	Researchers' values and beliefs are key to their interpretations of the social world.	❑	❑	❑	❑	❑	❑

HARP statements

Please indicate your agreement or disagreement with the statements below. There are no wrong answers.		Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
14	Researchers should openly and critically discuss their own values and beliefs.	❑	❑	❑	❑	❑	❑
15	Research shapes and is shaped by what the researcher believes and doubts.	❑	❑	❑	❑	❑	❑
Your views on the purpose of research							
16	The purpose of research is to discover facts and regularities, and predict future events.	❑	❑	❑	❑	❑	❑
17	The purpose of organisational research is to offer an explanation of how and why organisations and societies are structured.	❑	❑	❑	❑	❑	❑
18	The purpose of research is to create new understandings that allow people to see the world in new ways.	❑	❑	❑	❑	❑	❑
19	The purpose of research is to examine and question the power relations that sustain conventional thinking and practices.	❑	❑	❑	❑	❑	❑
20	The purpose of research is to solve problems and improve future practice.	❑	❑	❑	❑	❑	❑
Your views on what constitutes meaningful data							
21	Things that cannot be measured have no meaning for the purposes of research.	❑	❑	❑	❑	❑	❑
22	Organisational theories and findings should be evaluated in terms of their explanatory power of the causes of organisational behaviour.	❑	❑	❑	❑	❑	❑
23	To be meaningful, research must include participants' own interpretations of their experiences, as well as researchers' interpretations.	❑	❑	❑	❑	❑	❑
24	Absences and silences in the world around us are at least as important as what is prominent and obvious.	❑	❑	❑	❑	❑	❑
25	Meaning emerges out of our practical, experimental and critical engagement with the world.	❑	❑	❑	❑	❑	❑
Your views on the nature of structure and agency							
26	Human behaviour is determined by natural forces.	❑	❑	❑	❑	❑	❑
27	People's choices and actions are always limited by the social norms, rules and traditions in which they are located.	❑	❑	❑	❑	❑	❑
28	Individuals' meaning-making is always specific to their experiences, culture and history.	❑	❑	❑	❑	❑	❑
29	Structure, order and form are human constructions.	❑	❑	❑	❑	❑	❑
30	People can use routines and customs creatively to instigate innovation and change.	❑	❑	❑	❑	❑	❑



Progressing your research project (*continued*)

Heightening your Awareness of your Research Philosophy (HARP)

Your answer scores

Give yourself the points as indicated below for each answer within each philosophical tradition. The different philosophies are represented by specific questions in the HARP as indicated below. Fill each philosophy table with your answer scores, then total up the numbers for each philosophy. (For your reference, in the tables below, the letters in brackets indicate whether the question tests your agreement with the ontological, epistemological, axiological, purpose of research, meaningfulness of data and structure and agency aspects of research philosophy.)

Each answer you gave is given a number of points as shown in the table below:

Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
3	2	1	–1	–2	–3

Positivism: Questions 1, 6, 11, 16, 21, 26

Question	1 (ontology)	6 (epistemology)	11 (axiology)	16 (purpose)	21 (data)	26 (structure/agency)	Total
Answer score							

Critical Realism: Questions 2, 7, 12, 17, 22, 27

Question	2 (ontology)	7 (epistemology)	12 (axiology)	17 (purpose)	22 (data)	27 (structure/agency)	Total
Answer score							

Interpretivism: Questions 3, 8, 13, 18, 23, 28

Question	3 (ontology)	8 (epistemology)	13 (axiology)	18 (purpose)	23 (data)	28 (structure/agency)	Total
Answer score							

Postmodernism: Questions 4, 9, 14, 19, 24, 29

Question	4 (ontology)	9 (epistemology)	14 (axiology)	19 (purpose)	24 (data)	29 (structure/agency)	Total
Answer score							

Pragmatism: Questions 5, 10, 15, 20, 25, 30

Question	5 (ontology)	10 (epistemology)	15 (axiology)	20 (purpose)	25 (data)	30 (structure/agency)	Total
Answer score							

Reflection

Now, for the first of what will almost certainly be many philosophical reflections, consider the following questions regarding how you scored yourself.

1. Do you have an outright philosophical winner? Or do you have a close contention between two or more philosophies?
2. Why do you think this is?
3. Which philosophy do you disagree with the most?
4. Why do you think this is?

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Case 4
Working out your philosophical assumptions



RossHelen/Shutterstock

During her undergraduate degree, Ailsa had a baby and became interested in the question of how women combine tertiary education with raising a child and the extent to which universities support such students. Now, for her master's degree research project, she wishes to explore these questions further.

Ailsa is deciding how best to approach her project. She is drawn to qualitative methods, and in-depth interviews in particular, because she has always been fascinated by people's stories. She has also been reading about feminist research and how it emphasises 'giving voice' to women, creating close relationships with them, and co-creating knowledge (Jaggar, 2016; Mauthner, 2020a). Ailsa feels that a feminist approach would work well for her study because she wants to take the experiences of students like her as the starting point for her research and use them to help universities develop better support mechanisms for students experiencing pregnancy and motherhood.

She discusses these ideas with her friend Jasmin who is doing a PhD on female entrepreneurs using a feminist perspective. Jasmin tells her about the importance of being 'reflexive' when you do research, and how feminists – and other researchers – see this as an important part of the research process. Jasmin explains that reflexivity is when the researcher recognises how her subjectivity, social location, biography, worldview, conceptual frameworks and philosophical assumptions influence your research question and how you do your research (Mauthner and Doucet, 2003). This makes a lot of sense to Ailsa as she knows that her own experiences of pregnancy and motherhood as a student have informed her choice of research topic. She can also see how her personality, combined with feminist ideas, are shaping how she is approaching her study, the method she wants to use and the kinds of relationships she wants to build with the women in her study. She particularly likes the way reflexivity will foreground her own role, as the researcher, in co-producing knowledge with these students.

But Ailsa is less sure about what her philosophical assumptions are, let alone how they will impact on her study. She asks two friends, Jamal and Duncan, who are also doing master's degrees how they are approaching this issue. They both say that research philosophies are not important. They just want to get on with the research. What is the point in worrying about these abstract ideas, they ask her. What difference will it make to her research project? Ailsa isn't really sure how to answer these questions, but she recalls Jasmin explaining that research philosophies do matter because they influence the kinds of research questions that you ask, what you take as your object of study, and how you decide to study it. Jasmin also told her that even if she didn't state her research philosophy explicitly it would still shape her research but in invisible ways (Mauthner, 2020b). This has convinced Ailsa that she needs to try to understand better this aspect of her research.

She reads about research philosophies in several textbooks; makes a list of different philosophical approaches; and completes the HARP (Heightening Awareness of Research

Philosophy) quiz (see: 'Progressing your research project' for Chapter 4). She feels overwhelmed by the number of philosophical positions and terms ending in 'ism', and struggles to grasp the differences between them. Ailsa decides to try to translate these abstract ideas into a series of concrete questions and apply them to her particular project to help her work out her philosophical position:

Ailsa's questions for working out her philosophical position

What is ontology?
Ontology refers to the assumptions that researchers make about the nature of the reality that they are studying.

What is the 'reality' that I am studying in my project?
The experiences of female students having a baby while at university and their perceptions of university support mechanisms.

What do I think is the nature of this reality?
I am not sure. I am not sure I even understand the question.

Do I think there is a universal, fixed, singular experience of students having a baby while at university?
This is my translation of what I think 'objectivism' means. Another word used to refer to this seems to be 'realism'. My answer to this question is no, I don't think so, because women will have lots of different experiences of having a baby and of the support provided by universities.

Do I think that the women's experiences are specific and particular to each one of them and that there are therefore multiple experiences?
This is my translation of what I think 'subjectivism' means. And my answer to this question is yes. I also think that their experiences change over time, and that they will have different experiences of the support provided (or not) by universities.

On the basis of these questions what do I think my ontological position is?
I think it is subjectivism.

What is epistemology?
Epistemology refers to the assumptions that researchers make about how knowledge of the reality that they are studying is produced and justified.

How am I developing knowledge about the women's experiences in my study?
I am interviewing them to get their accounts of their experiences.

Do I think that these interview accounts are giving objective facts about their experiences?
This is my translation of what I think 'positivism' means. My answer to this question is no, I don't think so. I think that women will give me their subjective interpretations of their experiences and will probably be making sense of their experiences as they talk to me about them. I have noticed that this is what I do. Talking about my thoughts and feelings is a way of making sense of them. I also think that I am interpreting their stories in a particular way – some things they say will resonate with my own experiences and maybe I will pay more attention to those parts of their accounts. So, I think that I am also involved in interpreting their stories. I think this is partly what reflexivity means.

Do I think that women's interview accounts are subjective interpretations of these experiences?
This is my translation of what I think 'subjectivism' means in relation to epistemology. And yes, as I said above, I think that the female students are forming opinions and attributing meaning to their experiences and what has happened to them.

On the basis of these questions what do I think my epistemological position is?
I think that my epistemological position is subjectivism.

Ailsa concludes that her ontological and epistemological positions are subjectivism and her overall philosophy is interpretivism. She is unsure though about whether and how she can bring together an interpretivist philosophy with a feminist perspective. She has also been reading about research paradigms and she is wondering what paradigm will be compatible with her interpretive and feminist approach. She will ask her friend Jasmin and her lecturer for advice on these questions, but at least she feels that she has made a start. She has a better understanding of various philosophical terms and positions, and most importantly, how to apply this knowledge to her particular study.

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Questions

1. Ailsa is excited that she's beginning to understand research philosophies and why they matter. What might she tell her two sceptical friends, Jamal and Duncan, to convince them that it is important to reflect on and explain their philosophical assumptions?
2. What might Ailsa's friend Jasmin say about bringing together an interpretivist philosophy with a feminist perspective?
3. How might Ailsa's tutor advise her on choosing a research paradigm that fits with an interpretivist approach?

Additional case studies



These are available via this book's companion website:
www.pearsoned.co.uk/saunders.

They are:

- Marketing music products alongside emerging digital music channels (focussing on the importance of ontology, epistemology, intepretivist and positivist philosophies);
- Consultancy research for a not-for-profit organisation (focusing on pragmatism and differences between this and post-positivist and interpretivist philosophies);
- Organisational learning in an English regional theatre (focusing on the importance of axiology and the interpretivist philosophy);
- Chinese tourists and their duty-free shopping in Guam (focusing on the positivist philosophy and the need for researcher independence).
- In search of research philosophy (focusing on the use and interpretation of the HARP reflexive tool).

Self-check answers

4.1 Probably the most realistic hypothesis here would be 'consumers of "Snackers" chocolate bars did not notice the difference between the current bar and its reduced weight successor'. Doubtless that is what the Snackers' manufacturer would want confirmed!

4.2 Although you can see and touch a manager, you are only seeing and touching another human being. The point is that the role of the manager is a socially constructed concept. What counts as 'a manager' will differ between different national and organisational cultures and will differ over time. Indeed, the concept of the manager as we generally understand it is a relatively recent human invention, arriving at the same time as the formal organisation in the past couple of hundred years.

4.3 The researcher working in the radical humanist or structuralist paradigms may argue that they expect managers to prefer recommendations that do not involve radical change because radical change may involve changing managers! Radicalism implies root-and-branch investigation and possible change, and most of us prefer 'fine-tuning' within the framework of what exists already, particularly if change threatens our vested interests.

4.4 The question implies an either/or choice. But as you work through this chapter (and, in particular, the next one on deciding your research design), you will see that life is rarely so clear-cut! Perhaps the main factor that would cause you to review the appropriateness of the deductive approach would be that the data you collected might suggest an important hypothesis, which you did not envisage when you framed your research objectives and hypotheses. This may entail going further with the data collection, perhaps by engaging in some qualitative work, which would yield further data to answer the new hypothesis.

Get ahead using resources on the companion website at:
www.pearsoned.co.uk/saunders.



- Improve your IBM SPSS Statistics and research analysis with practice tutorials.
- Save time researching on the Internet with the Smarter Online Searching Guide.
- Test your progress using self-assessment questions.
- Follow live links to useful websites.

Chapter 5



Formulating the research design

Learning outcomes

By the end of this chapter you should be able to:

- recognise the importance of your decisions when designing research and the need to achieve methodological coherence throughout your research design;
- identify the differences between exploratory, descriptive, explanatory and evaluative research, and recognise the purpose(s) of your research design;
- distinguish and choose between quantitative, qualitative and mixed methods research designs;
- develop an appropriate research strategy or strategies and achieve coherence throughout your research design;
- consider the implications of the time frames required for different research designs;
- identify the main ethical issues implied by your research design;
- utilise appropriate criteria to evaluate the quality of your research design;
- recognize your role as researcher in your research design;
- progress your research project by formulating your research design.

5.1 Introduction

In Chapter 4 we introduced the research onion as a way of depicting the issues underlying your choice of data collection method or methods and peeled away the outer two layers – research philosophy and approach to theory development. In this chapter we uncover the next three layers: methodological choice, research strategy or strategies, and the time horizon for your research. As we saw in Chapter 4, the way you answer your research question will be influenced by your research philosophy and approach to theory development. Your research philosophy



and approach to theory development will, whether this is deliberate or by default, invariably influence your selections shown in the next three layers of the research onion (Figure 5.1). These three layers can be thought of as aspects of research design, which is the way you turn your overarching research question or aim and your objectives into a research project. The key to these selections will be achieving a coherent design that is consistent with your research philosophy and approach to theory development.

Your research design is the overall plan for your research project. The tactics, through which you will bring your plan to fruition, are precisely how you will collect and analyse the data (the centre of the research onion). They comprise the detailed design and operationalisation of your data collection procedures and analysis techniques, and are discussed in later chapters.

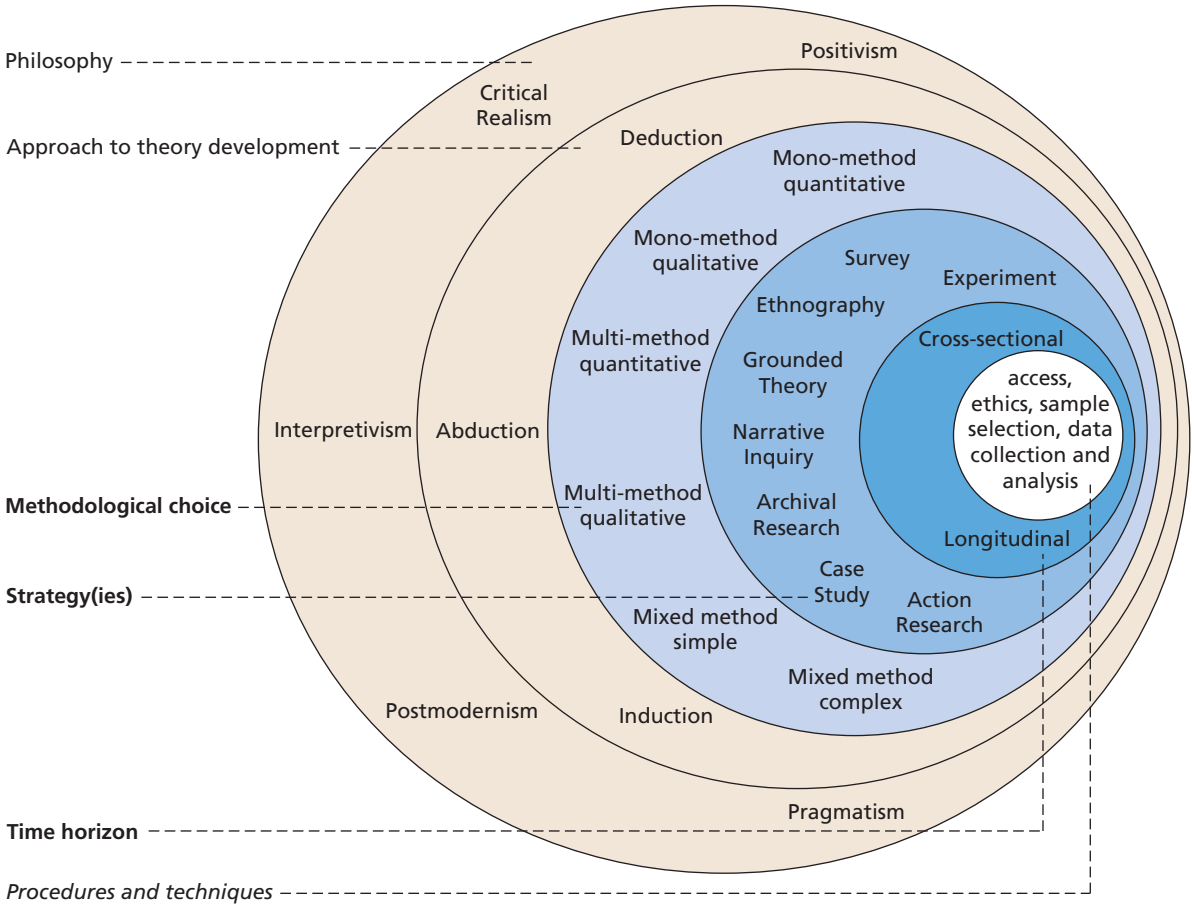


Figure 5.1 The research onion

Source: © 2022 Mark NK Saunders; developed from Saunders et al., 2019.

The research process is like a journey



Source: © Mark Saunders 2021

The cover photographs of recent editions of this book have shown that the research process as a journey. Like many such journeys, there is generally a choice of paths or roads to take. When you are thinking about setting out on a car journey of some distance, you will probably enter the destination into your satnav and consider possible route options to get to your destination. A number of criteria will influence your decision about which route to take, including time, fuel economy and your preferences for avoiding motorways, ferries and toll roads. The route you choose will be calculated by the satnav to meet your given preferences. As you undertake your journey, you will find yourself interacting with the reality of your planned route. Some parts of the journey will go according to plan; other parts may not, and you may need to amend your route, perhaps because of traffic congestion or a road being closed due to roadworks. In many ways, designing research is like planning a journey. Formulating the most appropriate design to answer your research question is similar to planning the route to your destination. The research aim is your destination and the research objectives are your route criteria. Your research design is your route and it needs to enable you to reach your destination and crucially be consistent with your objectives. Like your route, your research design may need to be amended due to unforeseen circumstances. Both will be interactive experiences.

5.2 Achieving a coherent research design

Your **research design** is the plan of how you will go about answering your research question, achieving your research aim and meeting your objectives. It will specify the source or sources from which you intend to collect data, how you propose to collect and analyse these, and discuss ethical issues and the constraints you will inevitably encounter (e.g. access to data, time, location and money). Crucially, it will demonstrate that you have thought through the elements of your particular research design.

The purpose of your research design will be driven by your overarching research question and will be either exploratory, descriptive, explanatory, evaluative or a combination of these (Section 5.3). In planning your research, you will need to decide whether you follow a quantitative, qualitative or mixed methods research design. Each of these methodological choices will require a careful consideration of strategies and time horizons along with data collection procedures and analysis techniques, to achieve a coherent research design. We introduce this methodological choice in Section 5.4 considering quantitative, qualitative and mixed methods research designs. This will be operationalised through one or more research strategies (Section 5.5), which need to be consistent with

your research philosophy and your methodological choice. Your research questions will also determine the selection of an appropriate time horizon (Section 5.6). Your research design will need to be ethical, and it will be important to identify potential concerns and minimise or overcome them. We consider the importance of anticipating potential ethical concerns briefly in Section 5.7, discussing them in greater detail in Sections 6.5 and 6.6. It is also important to ensure the quality of your research design, and we discuss criteria to evaluate this in Section 5.8. Finally, we recognise that your own role as researcher will affect your research design in Section 5.9.

Your research design is likely to be assessed by your university or examining institution as part of your research proposal and you will need to achieve a pass before you are allowed to proceed. You therefore need to produce a clear and coherent design with valid reasons for each of your research design decisions, even if your design changes subsequently. Your justification for each element in your research design should be based on your research question(s) and objectives, and be consistent with your research philosophy.

5.3 The research purpose

In Chapter 2 we encouraged you to think about your research project in terms of an overarching research question, a research aim and objectives. Your research question indicates whether the purpose is exploratory, descriptive, explanatory or evaluative or a combination of these. In this section we discuss each purpose in more detail to help you evaluate the purpose of your own research study.

Exploratory studies

An **exploratory study** explores or clarifies understanding of an issue, problem or phenomenon (Box 5.1). The overarching research question is likely to start with 'What' or 'How' (Section 2.4). Questions that you ask during data collection to explore an issue, problem or phenomenon will also be likely to start with 'What' or 'How' (Chapters 10 and 11).

Exploratory research has the advantage that it is flexible and adaptable to change. If you are conducting exploratory research, you must be willing to change your direction as a result of new data that appear and new insights that occur to you. A quotation from the travel writer V.S. Naipaul (1989: 222) illustrates this point beautifully:

> I had been concerned, at the start of my own journey, to establish some lines of enquiry, to define a theme. The approach had its difficulties. At the back of my mind was always a worry that I would come to a place and all contacts would break down . . . If you travel on a theme the theme has to develop with the travel. At the beginning your interests can be broad and scattered. But then they must be more focused; the different stages of a journey cannot simply be versions of one another. And . . . this kind of travel depended on luck. It depended on the people you met, the little illuminations you had. As with the next day's issue of fast-moving daily newspapers, the shape of the character in hand was continually being changed by accidents along the way.

Exploratory research may commence with a broad focus, but this will become narrower as the research progresses. It may be that time spent on exploratory research might show that the research is not worth pursuing!



Box 5.1 Focus on management research

An exploratory study combining research methods

Research by Sun et al. (2021: 28) published in the *Journal of Marketing,* focussing on the clothing and accessories industries, explores three aspects of sustainable luxury consumption. These comprise three questions:

1 'Whether high-end products are more sustainable by virtue of their longer product lifecycles?
2 How consumers process information regarding the durability of these high-end products?
3 How marketeers can help consumers overcome a failure to consider product durability and promote the purchase of fewer, higher-end products that will last longer? (Sun et al., 2021: 29)'

To answer these questions data were collected using multiple quantitative methods. These included:

- An automatic web crawler scraping price, brand and detailed product category data from 20 online retailers selling new and second-hand shoes and handbags for 4,600 products. This provided evidence of whether high-end goods are more durable, and hence more sustainable.
- An online survey of 1,800 United States (US) Amazon Mechanical Turk (MTurk) crowdsourcing platform respondents to classify these brands as high, middle or low-end products.
- An online survey using the Qualtrics platform of 340 wealthy US women who answered questions about their own belongings to find further support regarding high-end goods being more sustainable than low-end goods.
- A paid online survey of 201 US respondents using MTurk, collecting data about two products at different price points and different time horizons. This investigated why consumers prefer multiple mid-range products over a high-end product, neglecting product durability.
- A paid online survey of 421 US respondents using Prolific Academic crowdsourcing platform, collecting data about responses to product information for a fictitious high-end and mid-end item. This further established neglect of product durability.
- A survey completed by 162 US graduate students for course credit, collecting data on their choices in relation to a range of attributes for an actual high-end product. This evaluated consumers' preferences for durability in relation to specific trade-offs relative to product attributes such as price and style.
- A survey of 106 real consumers using a US clothing company's email list. This collected data on particular attributes of a product to determine whether durability could be framed as a dimension of sustainability.

Descriptive studies

A **descriptive study** is designed to gain an accurate profile of events, persons or situations. One of the earliest well-known examples of a descriptive survey is the *Domesday Book*, which described the population of England in 1085. As we noted in Section 2.4, research questions that are descriptive are likely to begin with, or include, 'Who', 'What', 'Where', 'When' or 'How'. Questions that you ask during data collection are also likely to start with, or include, 'Who', 'What', 'Where', 'When' or 'How' (Chapters 10 and 11). A descriptive study can extend an exploratory study or contextualise an explanatory study. However, it is necessary to have a clear picture of the phenomenon on which you wish to collect data prior to the collection of the data.

Project tutors are often wary of work that is too descriptive. There is a danger of their saying 'That's very interesting . . . but so what?' They will want you to go further and draw conclusions from the data you are describing. They will encourage you to develop

the skills of evaluating data and synthesising ideas. These are higher-order skills than those of accurate description. Description in business and management research has a very clear place. However, it should be thought of as a means to an end rather than an end in itself. This means that if your research project utilises description it is likely to be a precursor to explanation, a **descripto-explanatory** study.

Explanatory studies

An **explanatory study** establishes causal relationships between variables, the overarching research question being likely to begin with, or include, 'Why' or 'How' (Section 2.4). Questions that you ask during data collection to gain an explanatory response will also be likely to start with, or include, 'Why' or 'How' (Chapters 10 and 11).

The emphasis in explanatory research is to study a situation or a problem in order to understand it or explain relationships between variables. You may find, for example, that a cursory analysis of quantitative data on manufacturing scrap rates shows a relationship between scrap rates and the age of the machine being operated. You could analyse these data quantitatively in order to get a clearer view of the statistical significance of the relationship. Alternatively, you might collect further qualitative data by asking machine operators why some scrap rates are higher than others?

Evaluative studies

An **evaluative study** finds out how well something works. Investigative research questions that seek to evaluate answers are likely to begin with 'How', or include 'What', in the form of 'To what extent' (Section 2.4). Evaluative studies in business and management are likely to be concerned with assessing the effectiveness of an organisational or business strategy, policy, programme, initiative or process; for example, evaluating a marketing campaign, a personnel policy, a costing strategy, or the delivery of a support service. An evaluative study may also make comparisons between events, situations, groups, places or periods. Questions that you ask during data collection will be likely to start with, or include, 'What', 'How' or 'Why' (Chapters 10 and 11). It can produce a theoretical contribution where emphasis is placed on understanding not only 'how effective' something is, but also 'why', comparing this explanation to existing theory.

Combined studies

A research study may combine more than one purpose in its design. This may be achieved by the use of multi or mixed methods in the research design (Section 5.4). Alternatively, a single method research design may be used in a way that provides scope to facilitate more than one purpose.

5.4 Methodological choice: choosing a quantitative, qualitative or mixed methods research design

Research designs are frequently referred to as 'quantitative', 'qualitative' or 'mixed' methods. These labels highlight whether the data collected are numeric (numbers), non-numeric

Box 5.2 Focus on management research

Methodological choices in international business research

A review of 50 years of methodological trends in international business research by Nielson et al. (2020) emphasises the importance of variety in methodological choices.

Analysing articles in the *Journal of International Business* from 1970 to 2019, they note three prevailing patterns:

- increased use of large-scale, longitudinal cross-national quantitative archival data;
- increased use of complex statistical analysis techniques with the use of multiple analytical techniques in one study;
- decline in the diversity of methods although, within this, a greater variety of qualitative methods being used.

Taking a pluralist approach, they consider that these changes jeopardise the quality of international business research. In particular, they argue the study of any phenomenon needs a range of research designs; if the systematic biases, errors and limitations of any single option are to be avoided. They propose that international business as a field needs to encourage the use of a greater variety of alternative research designs to investigating a phenomenon.

(words, images, audio recordings, video clips and other similar material) or a combination of both. Quantitative refers to any data collection procedures (such as a questionnaire) or analysis techniques (such as graphs or statistics) that generate or use numerical data. In contrast, 'qualitative' refers to any data collection procedures (such as an interview or unstructured observation) or analysis techniques (such as narrative analysis or grounded theory) that generate or use non-numerical data. Where more than one quantitative data collection procedure and corresponding analysis technique is used, it is termed a **multi-method quantitative** design. Where more than one qualitative data collection procedure and corresponding analysis technique is used, it is a **multi-method qualitative** design. Where quantitative and qualitative data collection techniques and analysis procedures are used, it is a **mixed methods** design (Figure 5.2). Within a number of fields in business and management there has been a decline in the diversity of methodological choices (Box 5.2).

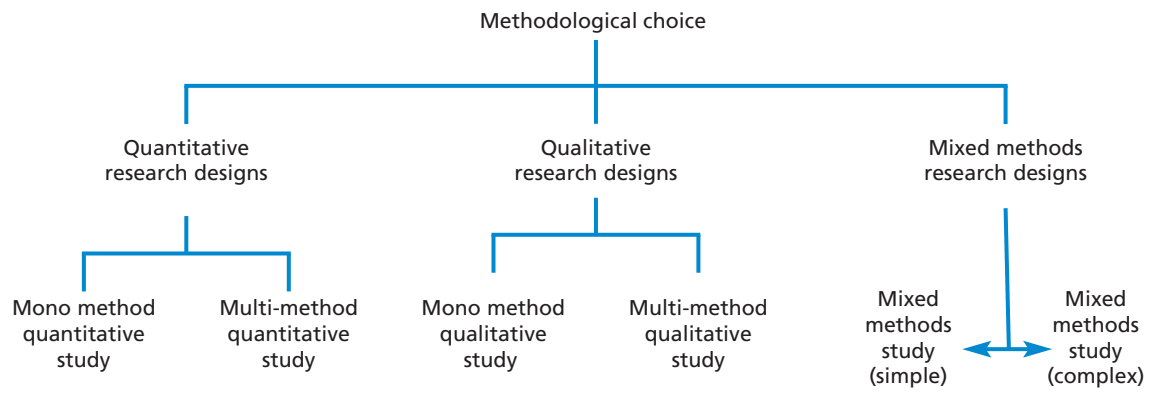


Figure 5.2 Methodological choice

Box 5.3 Focus on research in the news

Mandating vaccinations could backfire, study says

By Leke Oso Alabi

Health and social care workers who felt under pressure from their employers to receive Covid-19 vaccines were more likely to decline them, according to new research led by the London School of Hygiene & Tropical Medicine.

Nearly 2,000 people were asked whether they agreed with the statement 'I feel/felt under pressure from my employer to get a Covid-19 vaccine'.

Those who agreed most with the statement were more likely to have declined a Covid-19 vaccine.

'Our work shows a move towards mandating Covid-19 vaccination is likely to harden stances and negatively affect trust in the vaccination, provider, and policymakers,' said Sandra Mounier-Jack, associate professor in health policy at LSHTM.

The LSHTM said its study also identified structural barriers to vaccination uptake. Black African and mixed black African workers were not offered vaccination at the same rates as white British and white Irish participants.

The authors of the study – which has not yet been peer reviewed – acknowledged limitations, including survey recruitment from social media and professional bodies, which may have led to some ethnic or professional groups being over or under-represented.

FT *Source:* Alabi, L.O. (2021) 'Mandating vaccinations could backfire, study say', *Financial Times,* 12 May. Copyright © 2021 The Financial Times Limited

As methodological pluralists we consider, dependent upon the research question, all three research designs can offer valuable insights.

We now examine these three research designs considering how each is associated with research philosophy (Sections 4.2 to 4.4) and approaches to theory development (Section 4.5), as well as looking at their characteristics and associated research strategies.

Quantitative research designs

Philosophical assumptions

Quantitative research designs are associated generally with positivism, especially when used with highly structured data collection techniques where a large number of people are asked the same questions (Box 5.3). However, it is wrong to suggest the link between positivism, deduction and a quantitative research design is exclusive (Walsh et al. 2015a). Quantitative research designs are also be undertaken within the realist and pragmatist philosophies (Section 4.4).

Approach to theory development

Quantitative research is usually associated with a deductive approach, where data are collected and analysed to test theory. However, it may also incorporate an inductive approach, using data to develop theory (Section 4.5). For example, a researcher may analyse quantitative data to generate hypotheses to test through subsequent research. Alternatively, data analysis may reveal the original hypothesis was poorly framed or be used to suggest possible hypotheses to test. Walsh et al. (2015b: 621) refer to using analysis to suggest hypotheses as '"**Harking**" – hypothesising after the results are known.' While you may find it necessary to refine your original hypothesis, we recommend you do not use harking without discussing it with your project tutor.

Characteristics

Quantitative research examines relationships between variables, which are collected in a standard manner, measured numerically and analysed using a range of statistical and graphical techniques. It often incorporates controls to ensure the validity of data, as in an experimental design. Quantitative designs often use probability sampling techniques to ensure statistical generalisability (Section 7.2), the researcher being considered independent from those being researched. The characteristics of quantitative research designs are summarised in Table 5.1.

A quantitative research design may use a single data collection technique, such as a questionnaire, and corresponding quantitative analytical procedure. This is known as a **mono method quantitative study** (Figure 5.2). Where more than one quantitative data collection technique and corresponding analytical procedure are used, this is termed

Table 5.1 Characteristics principally associated with quantitative and qualitative research designs

Characteristic	Quantitative research	Qualitative research
Independence of researcher from those being researched	independent	not independent
Terms for those taking part	respondents	participants, informants
Focus of study	variables and relationships between them	attributed meanings and associated variables
Sampling techniques	probability	non-probability
Generalisation	statistical	to theory
Data collection method(s)	rigorously defined, highly structured	unstructured or semi-structured
Data	numerical and standardised	non-standardised, generally requiring classification
Analysis	through statistics and diagrams	through conceptualisation
Derivation of meaning	numbers	words (spoken/text) and images

a **multi-method quantitative study** (Figure 5.2). You might, for example, decide to collect quantitative data using both questionnaires and structured observation, analysing these data statistically. Using more than one method is likely to overcome weaknesses associated with a mono method, allowing for richer data collection, analysis and interpretation (Bryman 2006).

Research strategies

Quantitative research is principally associated with survey and experiment research strategies (Section 5.5). The survey strategy is normally conducted through the use of questionnaires, structured interviews or, possibly, structured observation. However, it is important to note that quantitative data and analysis techniques can and are used in research strategies that are often associated with qualitative, designs such as action research, case study research and grounded theory (Section 5.5).

Procedures and techniques

Procedures and techniques associated with quantitative designs are considered in Chapters 9, 11 and 12. Structured observation is discussed in Section 9.4; Chapter 11 focusses on the use of questionnaires including structured interviews; and Chapter 12 is devoted to analysing data quantitatively.

Qualitative research designs

Philosophical assumptions

Qualitative research designs are often associated with interpretivism (Denzin and Lincoln 2018), researchers making sense of subjective and socially constructed meanings. Such research is sometimes referred to as naturalistic since researchers need to operate within a natural setting, or research context, in order to establish trust, participation, access to meanings and in-depth understanding. Like quantitative research, qualitative research may also be undertaken within realist and pragmatist philosophies.

Approach to theory development

Qualitative research often uses an inductive approach to theory development, research being used to build theory or develop a richer theoretical perspective than already exists in the literature. However, some qualitative research strategies start with a deductive approach, testing an existing theory (Yin 2018). In practice, much qualitative research also uses an abductive approach to theory development, inferences being developed inductively and tested deductively in an iterative process (Section 4.5).

Characteristics

Qualitative research studies participants' meanings and the relationships between them, using a variety of data collection techniques and analytical procedures, to develop a conceptual framework and theoretical contribution. The success of the qualitative researcher's role is dependent not only on gaining physical access to those who take part, but also building rapport and demonstrating sensitivity to gain cognitive access to their data (Section 6.2). Those who consent to take part in qualitative research are seen as participants in the collection of data, the researcher not being considered independent.

In qualitative research, meanings are derived from words and images, not numbers. Since words and images may have multiple meanings as well as unclear meanings, it is often necessary to explore and clarify these with participants. Methods used are unstructured or semi-structured (Sections 9.3 and 10.3), so that research questions, procedures can alter or emerge in a naturalistic and interactive process. Qualitative designs are likely to use non-probability sampling techniques (Section 7.3). The qualitative data that are collected will be non-standardised and generally require being classified into categories for analysis. The characteristics of qualitative research are summarised in Table 5.1.

A qualitative research design may use a single data collection technique, such as semi-structured interviews, and corresponding qualitative analytical technique. This is known as a **mono method qualitative** study (Figure 5.2). Where more than one qualitative data collection procedure and corresponding analytical technique are used, this is termed a **multi-method qualitative** study (Figure 5.2). You might, for example, decide to collect qualitative data using in-depth interviews and diary accounts, analysing these data using qualitative techniques (Box 5.4).

Research strategies

Qualitative research designs are associated with a variety of strategies including Action Research, case study research, ethnography, Grounded Theory and Narrative Inquiry (Section 5.5). Some of these strategies, such as case study, are also used in quantitative research designs.

Procedures and techniques

Procedures and techniques associated with qualitative designs are considered in Chapters 9, 10 and 13. Observation is considered in Chapter 9; collecting qualitative data using semi-structured and in-depth interviews is considered in Chapter 10; while Chapter 13 focuses on techniques to analyse data qualitatively.



Box 5.4 Focus on student research

Multi-method qualitative study

Tom wanted to establish how supervisors managed teams that had adopted hybrid working. To do this he thought it essential that he should have the clearest possible grasp of supervisors' interactions with their teams. This involved him in:

- observing online meetings between five supervisors and their teams for a week to establish practice (qualitative data);
- conducting online interviews with each of the supervisors to establish their views (qualitative data);
- interviewing a sample of team members reporting to the five supervisors to establish team members' views (qualitative data).

This gave Tom a much better grasp of how supervisors managed teams' hybrid working. It also did much to enhance his credibility with the supervisors and team members, a number of whom emailed him with photographs of their home and office work environments; further qualitative data.

Mixed methods research designs

Philosophical assumptions

Mixed methods research designs integrate the use of quantitative and qualitative data collection procedures and analysis techniques in the same research project (Figure 5.2), being often associated with pragmatism and critical realism. Pragmatists choose methods because they will enable credible reliable and relevant data to be collected to address the research problem (Section 4.4). For pragmatists, the nature of the research question, the research context and likely research consequences are driving forces determining the most appropriate methodological choice (Nastasi et al. 2010). This means pragmatists do not always use mixed methods designs. Critical realism, like pragmatism, can support the use of mixed methods research and, again, critical realists do not always use mixed methods designs. They may, for example, use initially qualitative research methods to explore perceptions. This could be followed by quantitative analysis of officially published data (Section 8.2) to establish the relationship between socially constructed knowledge and possible underlying casual structures, processes and forces.

Researchers using mixed methods have a **pluralist** view of research methodology. They believe that flexibility in selection and use of methods (both quantitative and qualitative) is legitimate and that researchers should be tolerant of each other's preferred methods even when they differ from their own. These views can be contrasted with the **unitarist** view; there is, or should be, one legitimate method that should be followed.

Approach to theory development

Mixed methods research designs may use deductive, inductive or abductive approaches to theory development. For example, quantitative research may be used to test theory statistically, followed by qualitative research to develop a richer theoretical understanding. Theory may also be used to provide direction for the research. In this way a particular theory may be used to provide a focus for the research and to provide boundaries to its scope (Tashakkori and Teddlie 2010).

Characteristics

Mixed methods research draws from the characteristics of both quantitative and qualitative research (Table 5.1), combining quantitative and qualitative procedures and techniques in a variety of ways that range from simple, concurrent forms to more complex and sequential forms (Figure 5.2).

Research designs

Different combinations of quantitative and qualitative research lead to various mixed methods research designs. The principal mixed methods research designs are: concurrent triangulation design, concurrent embedded design, sequential exploratory design, sequential explanatory design (Creswell and Plano Clark 2017) and sequential, multi-phase design.

Concurrent mixed methods research uses quantitative and qualitative methods within a single phase of data collection and analysis (**single-phase research design**) (Figure 5.3). This allows both sets of results to be interpreted together to provide a richer, more comprehensive response to the research question compared to a mono method design. Where you collect qualitative and quantitative data in the same phase of research in order to

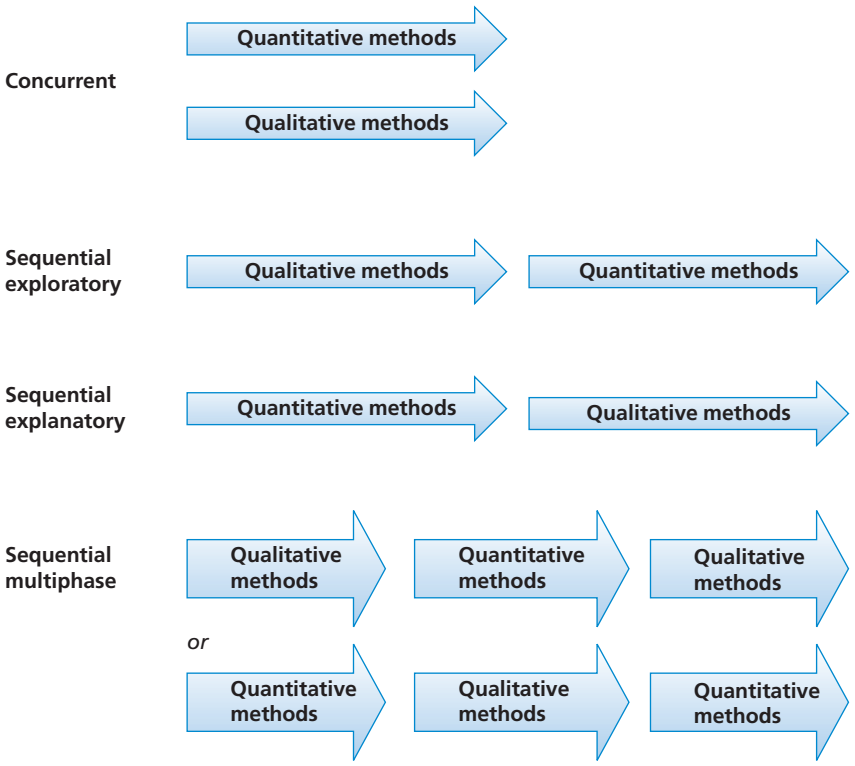


Figure 5.3 Mixed methods research designs

compare how these data sets support one another, you will be using a **concurrent triangulation design**.

Sequential mixed methods research involves more than one phase of data collection and analysis (Figure 5.3). In this, the researcher uses one method followed by another in order to expand or elaborate on the initial set of findings. This often takes more time than a concurrent design. In a **double-phase research design** two alternative mixed methods research strategies are used, either a **sequential exploratory research design** (qualitative followed by quantitative) or a **sequential explanatory research design** (quantitative followed by qualitative). A **sequential, multi-phase design** is more complex using multiple phases of data collection and analysis (e.g. qualitative followed by quantitative, then by a further phase of qualitative) (Box 5.5).

Using sequential multi-phase mixed methods research design suggests a dynamic approach to the research, where one phase subsequently informs and influences the next phase of data collection and analysis. The exact nature of the interaction and iteration influences the way in which qualitative and quantitative methods are chosen and integrated at each phase of the research (Greene 2007; Nastasi et al. 2010; Teddlie and Tashakkori 2009).

Where you mix quantitative and qualitative methods at every stage of your research (design, data collection and analysis, interpretation and presentation of the research), you will be using a **fully integrated mixed methods research** design. Where you use quantitative and qualitative methods at only one stage or particular stages of your research, you will be using a **partially integrated mixed methods research** approach (Nastasi et al. 2010; Teddlie and Tashakkori 2009, 2011).



Box 5.5 Focus on student research

Mixed methods research

Andreas conducted research into organisational change in an IT company, using a sequential mixed methods research design consisting of four stages:

1 *Initial exploratory telephone discussions* with key senior managers to negotiate access, agree the scope of the project and gain essential contextual data. These data were analysed qualitatively in order to get a picture of important internal and external organisational issues.
2 *Individual in-depth online interviews* with a sample of 28 directly employed staff (excluding contractor staff), representing the organisation across its departments and throughout its grade structure. These data were analysed qualitatively to establish the issues that were important to staff, to help to inform the content of the questionnaire.
3 *An online questionnaire* designed, pilot-tested, amended and delivered to a representative sample of directly employed staff, producing a 42 per cent response rate. The quantitative data collected were analysed statistically to allow the views of employee groups to be compared for differences by age, gender, length of service, occupation and grade.
4 A fourth stage consisted of real-time *Internet presentations of initial findings to employees.* These allowed employees' questions to be answered and discussion to occur to clarify the content of some of the questionnaire results. Notes from these presentations were analysed qualitatively.

Mixed methods research may use quantitative research and qualitative research equally or unequally (Creswell and Plano Clark 2017), one methodology having a dominant role and the other a supporting role. This prioritisation reflects the research purpose, researcher preferences and the expectations of those who commission the research (such as your project tutor or the managers in an organisation).

The purpose of the research will emphasise the initial use and prioritisation of qualitative research (as in an exploratory study, where qualitative precedes quantitative) or quantitative research (as in a descriptive study, before using qualitative research to explain particular findings). The purpose will also emphasise the dominance of either quantitative or qualitative research such as in a sequential project which commences with a qualitative, exploratory phase, followed by a quantitative, descriptive phase, and is completed by a further qualitative, explanatory phase. For other research projects the purpose will suggest more equal use of quantitative and qualitative research methods. Similarly, the approach to theory development will lead to prioritising either quantitative or qualitative methods; an inductive approach designed to generate theoretical concepts and to build theory may emphasise the use of qualitative methods.

Merging quantitative and qualitative methods may involve either using '**quantitised**' qualitative data (e.g. specific events in the data are counted as frequencies and numerically coded for statistical analysis) or '**qualitised**' quantitative data (e.g. frequencies are turned into text, although this is extremely rare in practice) or both. Qualitative data may be presented diagrammatically (Box 12.9) and quantitative data presented as text. This approach to mixing methods may be risky as the value of each form of data may be diluted; for example, excessively 'quantitising' qualitative data may lead to loss of its exploratory or explanatory richness.

Embedded mixed methods research refers to one methodology supporting the other (Creswell and Plano Clark 2017). One methodology may be embedded within the other during a single means to collect data (e.g. some quantitative questions are included in

an interview schedule, or some questions within a questionnaire require a qualitative response) – a **concurrent embedded design**. Alternatively, a single-phase research design may use both quantitative and qualitative methods concurrently, collecting these separately, the analysis of one informing the other. Within a multi-phase, sequential research design, both quantitative and qualitative methods will be collected and analysed, one after the other, with one being used in a supporting role.

The characteristics that help to define mixed methods research designs highlight how quantitative and qualitative methods may be combined in a number of ways to provide you with better opportunities to answer your research question (Table 5.2).

Procedures and techniques

Quantitative data collection procedures and analytical techniques that may be used as part of mixed methods research are considered in Chapters 9, 11 and 12. Structured observation

Table 5.2 Reasons for combining methods in a mixed methods design

Reason	Explanation
Initiation	The initial method defines the nature and scope of subsequent research. Can also provide contextual background and to better understand the research problem (e.g. Box 5.3). It may inform redrafting of research questions, sample selection and data collection procedures
Facilitation	One method generates new insights that inform and are followed up using another method
Complementarity	Meanings and findings are elaborated, enhanced, clarified, confirmed, illustrated or linked
Interpretation	One method (e.g. qualitative) is used to help to explain relationships emerging from the other (e.g. quantitative)
Generalisability	Helps establish the generalisability of findings (e.g. qualitative followed by quantitative) or the credibility of a study or produce more complete knowledge (e.g. quantitative followed by qualitative)
Diversity	Allows for a greater diversity of views to inform and be reflected in the study
Problem-solving	An alternative method helps when the initial method generates insufficient understanding
Focus	One method focuses on one attribute (e.g. quantitative on macro aspects), while the other method focuses on another attribute (e.g. qualitative on micro aspects)
Triangulation	Ascertains if the findings from one method mutually corroborate the findings from the other method
Confidence	Findings may be affected by the method used. Mixed methods ascertains and cancels out this 'method effect' leading to greater confidence in your conclusions

Source: Developed from Bryman (2006), Greene (2007), Molina-Azorin (2011) and authors' experience

is discussed in Section 9.4; Chapter 11 discusses the use of questionnaires, including structured interviewing; and Chapter 12 considers the analysis of quantitative data.

5.5 Developing a coherent research strategy

In this section we turn our attention to your choice of research strategy (Figure 5.1). Your **research strategy** is the methodological link between your philosophy and subsequent choice of methods to collect and analyse data (Denzin and Lincoln 2018).

Within business and management there are a variety of research strategies with a range of methodological choices resulting in alternative combinations of quantitative, qualitative or mixed methods research designs (Table 5.3). Particular research strategies are associated with particular research philosophies and approaches to theory development; however, boundaries between research philosophies, approaches to theory development and research strategies are, at least to some extent, open.

As pluralists, we believe a particular research strategy should not be seen as inherently superior or inferior to any other. Rather, the key to the choice of a research strategy or strategies is achieving a reasonable level of coherence throughout your research design and ensuring the research question(s) are answered and the research objectives met. The coherence between research question(s) and objectives, and your philosophy and approach to theory development is crucial; alongside more pragmatic concerns including the extent of existing knowledge, the amount of time and other resources you have available and being able to obtain data. The strategy or strategies you adopt should not be thought of as being mutually exclusive or exclusive to one philosophy (Section 5.4). For example, it is possible to use the survey strategy within a case study or combine a number of different strategies within a mixed methods design.

In our experience the choice between strategies associated principally with qualitative research decisions that is likely to cause the greatest confusion. Such confusion is often unsurprising given the diversity of qualitative strategies (many more than those we consider), with their conflicting tensions and 'blurred genres' (Denzin and Lincoln 2018: 10).

Table 5.3 Research strategies and methodological choice

Strategy	Principal associated research designs
Experiment	Quantitative mono- and multiple methods
Survey	Quantitative mono- and multiple methods
Ethnography	Qualitative mono- and multiple methods
Grounded Theory	Qualitative mono- and multiple methods
Narrative Inquiry	Qualitative mono- and multiple methods
Archival	Quantitative mono- and multiple methods, qualitative mono- and multiple methods, mixed methods
Case study	Qualitative multiple methods, quantitative multiple methods, mixed methods
Action Research	Quantitative mono- and multiple methods, quantitative mono- and multiple methods, mixed methods

We now draw out the distinctions between a range of strategies and their associations with quantitative, qualitative, quantitative and mixed methods research designs.

Experiment

An **experiment** studies the probability of a change in an independent variable causing a change in another, dependent variable. This strategy that owes much to the natural sciences, although it features strongly in psychological and social science research, and, with its roots in natural science, laboratory-based research, is often seen as the 'gold standard' against which the rigour of other strategies is assessed.

Hypotheses

In an experiment you hypothesise whether or not a relationship will exist between the variables, formulating two opposing hypotheses that could explain the relationship and testing these statistically (Section 12.6). In a standard experiment two types of (opposing) hypotheses are formulated and tested: the null hypothesis and the hypothesis. The **null hypothesis** is the explanation that there is no relationship or difference between the variables, for example:

> **User satisfaction of online customer support is not related to the amount of training support staff have received.**

The **hypothesis** (also referred to as the **alternative hypothesis**) is the explanation that there is a relationship or difference between the variables, for example:

> **User satisfaction of online customer support is related to the amount of training support staff have received.**

In an experiment, testing statistically the compatibility of the data with the null hypothesis is based on the probability of these data or data more extreme occurring by chance (Wassenstein and Lazar, 2016). In effect, this measures the probability that the data are compatible with the null hypothesis. The smaller the probability (termed the *p*-value), the greater the statistical incompatibility of the data with the null hypothesis. This 'incompatibility' casts doubt or provides evidence against the null hypothesis and its associated underlying assumptions. Where this probability is greater than a prescribed value (usually $p = 0.05$), the null hypothesis is usually accepted, and the hypothesis is rejected. Where the probability is less than or equal to the prescribed value (usually $p = 0.05$), this indicates that the hypothesis can be accepted. The simplest experiments are concerned with whether there is a relationship or difference between two variables, a dependent variable such as user satisfaction of online customer support and an independent variable such as the amount of training support staff have received (Table 5.4). More complex experiments also consider the change in the dependent variable and the relative importance of two or more independent variables as well as in some designs the impact of other types of variable such as mediating and moderator variables (Table 5.4).

Experimental designs

Experimental designs include classical experiments, quasi-experiments and within-subject designs. In a **classical experiment,** a sample of participants is selected and assigned randomly to an experimental or control group (Figure 5.4). The **experimental group**

Table 5.4 Types of variable

Variable	Meaning
Independent (IV)	Variable manipulated or changed to measure its impact on a dependent variable
Dependent (DV)	Variable that may change in response to changes or manipulation in other independent variables
Mediating (MV)	Variable that transmits the effect between the independent and dependent variables
Moderator	Variable that affects the nature of the relationship between the independent variable and dependent variable
Control	Additional observable and measurable variables that need to be kept constant to avoid them influencing the effect of the independent variable on the dependent variable
Confounding	Extraneous but difficult to observe or measure variables that can potentially undermine the inferences drawn between the independent and dependent variables

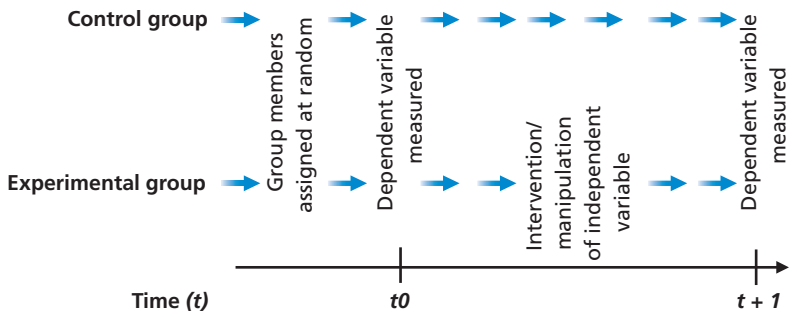


Figure 5.4 Classical experimental design

receives the planned intervention or manipulation. The **control group** does not receive the intervention. Random assignment means each group should be similar in all aspects relevant to the research other than their exposure to the planned intervention. In assigning the members to the control and experimental groups at random and using a control group, you try to control (that is, remove) the possible effects of an alternative explanation to the planned intervention and eliminate threats to internal validity. Because the control group is subject to exactly the same external influences as the experimental group other than the planned intervention, this intervention is the only explanation for any changes to the dependent variable.

A **quasi-experiment** still uses an experimental group(s) and a control group, but the researcher does not assign participants randomly to each group, perhaps because participants are only available in pre-formed groups (e.g. existing work groups). Differences in participants between groups may be minimised by the use of matched pairs. **Matched pair analysis** leads to a participant in an experimental group being paired with a participant in the control group based on matching factors relevant to the experiment such as age,

gender, occupation, length of service and grade. This minimises the effect of extraneous variables on the experiment's outcomes.

The basic experimental procedure in classical and quasi-experiments is the same (Figure 5.4), with the exception of random assignment. Let us look at an example related to the introduction of a sales promotion. The dependent variable is purchasing behaviour and is measured for members of both the experimental and control groups before any intervention. This provides a **pre-test** measure of purchasing behaviour. A planned intervention of a 'buy two, get one free' promotion is then made to members of the experimental group. In the control group, no such intervention is made. The dependent variable, purchasing behaviour, is measured after the manipulation of the independent variable (the use of the 'buy two, get one free' promotion) for both the experimental and control groups, so that a pre-test and post-test comparison can be made. Any difference between the experimental and control groups for the dependent variable (purchasing behaviour) can then be attributed to the intervention of the 'buy two, get one free' promotion. This is termed a **between-subjects design**, where participants belong to either the experimental group or control group but not both. In a between-subjects design, if more than one intervention or manipulation is to be tested, a separate experimental group will be required for each test (known as **independent measures**). If the experiment was designed to compare two separate interventions, such as 'buy one, get one free' and 'buy two, get one free' promotions, two experimental groups would be used alongside the control group.

In a **within-subjects design**, or within-group design, there is only a single group, and every participant is exposed to the planned intervention or series of interventions. For this reason, this approach is known as **repeated measures**. The procedure involves a pre-intervention observation or measurement, to establish a baseline (or control for the dependent variable). This is followed by a planned intervention (manipulation of the independent variable) and subsequent observation and measurement (related to the dependent variable). Within-subject designs may be more practical than a between-subjects designs, requiring fewer participants. However, the design may lead to carryover effects where familiarity or fatigue with the process distorts the validity of the findings. This may lead to a counterbalanced design, where some of the participants undertake tasks in a different order to see if familiarity or fatigue affects the outcomes.

Experiments in business and management, or related disciplines such as organisational psychology, are sometimes conducted in laboratories rather than in the field (e.g. in an organisation). This offers greater control over aspects of the research process such as sample selection and the context within which the experiment occurs. This improves the **internal validity** of the experiment, that is, the extent to which the findings can be attributed to the interventions rather than any flaws in your research design. However, **external validity**, the extent to which the findings from the study can be generalised to all relevant contexts is likely to be more difficult to establish (Section 5.8). Laboratory settings are less unlikely to be related to the real world of organisations.

The suitability of an experimental strategy will depend on your research question. Most business and management research questions ask about the relationships between variables, rather than test a predicted relationship. This emphasises a difference between experiments and other research strategies and, within quantitative research designs, highlights a key difference between an experimental strategy and a survey strategy.

Survey

The **survey** strategy is usually associated with a deductive research approach and is most frequently used to answer 'what', 'who', 'where', 'how much' and 'how many' questions.

It therefore tends to be used for descriptive, exploratory and explanatory research, suggesting possible reasons for relationships between variables and producing models of these relationships. Survey strategies using questionnaires are popular as they enable the collection of standardised data from a large number of respondents economically, allowing easy comparison. Using a survey strategy should give you more control over the research process and, when probability sampling is used, it is possible to generate findings that are statistically representative of the target population at a lower cost than collecting the data from them all (Section 7.2). In addition, the survey strategy is perceived as authoritative by people and is comparatively easy both to explain and to understand. Every day a news bulletin, news website or newspaper reports the results of a new survey that is designed to find out how a group of people think or want in relation to a particular issue (Box 5.6).



Box 5.6 Focus on research in the news

Executive education 2021: FT survey shows what employers want

By Andrew Jack

Coronavirus disrupted face-to-face contact and forced companies to trim their costs, but it has also reinforced many employers' commitment to training for a broader range of their middle and senior managers.

From a self-selective poll organised by the FT, more than a quarter of chief learning officers (CLOs) around the world said they intended to increase their budgets for executive education in 2021, while over half said they would maintain spending at 2020 levels. Just 17 per cent planned a reduction.

The findings come from a pioneering survey conducted by the FT in partnership with Unicon, the international consortium for university-based executive education, along with the Association to Advance Collegiate Schools of Business and the European Foundation for Management Development – the two leading accreditation agencies – as well as the Society for Human Resource Management.

Of the 363 respondents surveyed in February and early March 2021, the majority worked for companies based in the US and Canada, but Europe, Latin America, the Middle East and Africa were also well represented. Respondents worked in organisations of various sizes: more than two-fifths oversaw workforces of fewer than 1,000 people and more than a fifth were responsible for training in groups with more than 20,000 staff. Respondents from finance, banking, healthcare and industrial businesses dominated.

Leadership was the top learning priority identified for executive education, cited as important by 82 per cent of respondents. Change management followed, at 57 per cent. Other longstanding priorities, including digital transformation, strategy and innovation, were also ranked highly by more than two-fifths of respondents. In a sign of the issues brought to the fore during the pandemic, the need for training around resilience, well-being and remote or online collaboration were also cited by many.

Another emerging theme – diversity and inclusion – was a high priority, cited by 55 per cent, placing it third overall. Among US respondents, it was still higher – in second



place after leadership. That reflects the growing focus on a subject that has mobilised senior managements in recent months, triggered partly by the killing of George Floyd last May and the Black Lives Matter movement.

Business schools can take some comfort from the fact that just over half of the CLOs surveyed said they would turn to universities during 2021 for their executive learning programmes. However, a larger proportion pointed to alternatives: more than two-thirds said they would use internal resources and nearly three-quarters planned to use non-university training partners.



Source of extract: Jack, A. (2021) 'Executive education 2021: FT survey shows what employers want', *Financial Times,* 9 May. Copyright © 2021 The Financial Times Limited

The survey strategy allows you to collect data that you can analyse quantitatively (Chapter 12) using a variety of data collection methods including questionnaires and structured interviews (Chapter 11) and structured observation (Section 9.4). You will need to ensure your sample is representative, design and pilot your data collection instrument, and try to ensure a good response rate. Invariably, there is a limit to the number of questions that any questionnaire or structured interview can ask; and preparing and analysing the data will also be time-consuming. Despite this, perhaps the biggest drawback with using a questionnaire or structured interview as part of a survey strategy is the capacity to do it badly!

Ethnography

Ethnography is a strategy that focuses on describing and interpreting the social or cultural world of a group through first-hand study. It means, literally, a written account of a people or ethnic group. Ethnographers study people in groups, who interact with one another and share the same space, whether this is at street level, within a work group, in an organisation or within a society. It is the earliest qualitative research strategy, with its origins in colonial anthropology.

We present our subsequent discussion of ethnography as a developmental account. Ethnography is a demanding strategy to use, not least because of the time scale and intensity involved. However, if you are working in an organisation, there may be scope to undertake participant observation of your workgroup or another group in the organisation (Chapter 9). Alternatively, where you have recently undertaken a work placement, you will be familiar with the context and complexity of this workplace and you may be able to negotiate access based on your credibility to undertake an ethnographic study related to a work group. Ethnography is relevant for modern organisations. Alternatively, for example, you may wish to gain an in-depth understanding of their markets and the experiences of their consumers.

Being successful with this strategy is likely to include making sure that the scale or scope of your proposed ethnographic research project is achievable. This will relate to your research question and objectives. To collect sufficient data, you will need to make detailed notes of everything you observe and spend considerable time reflecting on what you have observed. You will also need to make additional notes to elaborate on these and supplement the process of observation, by conducting informal discussions and interviews

to explore what you have observed and collect any documentation that supports your data collection (Delamont 2007).

From the 1700s to the early 1900s, ethnography was developed to study cultures in societies that had been brought under the rule of a colonial power, to facilitate imperialist control and administration. Early anthropologists treated those among whom they lived and conducted their fieldwork as subjects and approached their ethnography in a detached way, believing that they were using a scientific approach, reminiscent of a positivism, producing what were meant to be accurate and timeless accounts of different cultures (Tedlock 2005). However, as we highlight in the opening vignette of Chapter 4, such studies (and their associated interpretations) privileged the colonialist ethnographers' taken for granted beliefs and assumptions.

From the 1920s the use of ethnography changed through the work of the Chicago School (University of Chicago), which used ethnographic methods to study social and urban problems within cultural groups in the USA. A seminal example of this work is Whyte's (1993) 'Street Corner Society' originally published in 1943, which examined the lives of street gangs in Boston. This approach to ethnography involved researchers living among those whom they studied, observing and talking to them to produce detailed cultural accounts of their shared beliefs, behaviours, interactions, language, rituals and the events that shaped their lives (Cunliffe 2010). This use of ethnography adopted a more interpretive and naturalistic focus using the language of those being studied in writing up cultural accounts. However, the researcher remained the arbiter of how to tell the story and what to include, leading many to question the impact of the researcher's socialisation and values (Geertz 1988).

This problem of 'representation' (Denzin and Lincoln 2018) means ethnography, as well as qualitative research more generally, remains in a fluid developmental state. In the second half of the twentieth century, researchers developed a 'bewildering array' (Cunliffe 2010: 230) of qualitative research strategies, associated with a great deal of 'blurring' across these strategies (Denzin and Lincoln 2018). Conflict about how best to achieve focus led to a range of ethnographic strategies of which we consider four: realist ethnography, impressionist or interpretive ethnography, critical ethnography and autoethnography.

Realist ethnography

Realist ethnography is the closest to the ethnographic strategy described earlier. The realist ethnographer believes in objectivity, factual reporting and identifying 'true' meanings. She or he reports the situation observed using 'facts' or data about structures and processes, practices and customs, routines and norms, artefacts and symbols. Such reporting is likely to use standardised categories that produce quantitative data from observations. The realist ethnographer's account is written in the third person, portraying their role as the impersonal reporter of 'facts'. It presents a detailed contextual background, the nature of the cultural interactions observed, and the patterns of behaviour and social processes identified. Quotations are used dispassionately without personal bias or seeking to act as an agent for change. The realist ethnographer's written account is his or her representation of what he or she has observed and heard.

Interpretive ethnography

In contrast, **interpretive ethnography** places greater emphasis on subjective impressions than on perceived objectivity. The interpretive ethnographer believes in the likelihood of multiple meanings rather than being able to identify a single, true meaning. Multiple meanings are located in different participants' socially constructed interpretations. This suggests a more pluralistic approach focused on understanding meanings, with those being

observed treated as participants rather than subjects. It requires the researcher to engage in continuous reflexivity to try to ensure quality in this research process (Delamont 2007) (Section 5.8). The research report will reflect the participation of both the ethnographer (writing in the first person), editing themself into the text (rather than out of it) and those being observed, through devices such as personalisation, use of dialogue and quotations, dramatisation and presentation of different perspectives. It will also involve contextualisation, orderly and progressive description, factual reporting, analysis and evaluation.

Critical ethnography

Critical ethnography has a radical purpose, designed to explore and explain the impact of power, privilege and authority on those who are subject to these influences or marginalised by them (Section 5.4). Critical ethnographers often adopt an advocacy role in their work to try to bring about change. You may be able to adopt a constrained or bounded version of critical ethnography to explore the impact of a problem or issue within an organisation or work group, with a view to advocating change. Such an issue could be concerned with strategy development, decision-making procedures, regulation, governance, organisational treatment, reward and promotion, communication and involvement and so forth.

Autoethnography

Autoethnography describes and systematically analyses personal experience in order to understand cultural experience. It therefore combines the characteristics of autobiography and ethnography in which you write analytically about past experiences usually using hindsight. In writing an autoethnography, you may interview others as well as consult other sources such as texts and photographs and diaries. Crucially, you need to write your autoethnography using research methods and the academic literature to analyse and contextualise the insights provided by your cultural experience (Box 5.7).

Grounded Theory

'Grounded theory' can refer to a strategy, a method, the theory developed through the strategy, and a research process (Bryant and Charmaz 2007; Charmaz 2011; Strauss



Box 5.7 Focus on management research

Mothers and researchers in the making

Huopalainen and Satama (2019) undertook an autoethnographic study to answer the question 'How do early-career academic mothers balance the demands of contemporary motherhood in academia?' Using their autoethnographic diary notes gathered during, before and after the birth of their babies as data, they provide a detailed understanding of how they negotiated becoming new mothers in their respective universities. Inspired by feminist thinking and matricentric feminism, they review the academic literature on maternal embodiment and the 'new' academia. This is used to help frame the analysis of their own diary notes. In their analysis they use the method of memory work, collectively analysing the individual memories of their day-to-day experiences and making explicit connections between their own experiences and existing research. Their article reveals their ongoing negotiation of striving to become both good academics and good mothers is a process loaded with gendered norms, expectations and beliefs.

Table 5.5 Common key elements of Grounded Theory strategy

- use of an abductive approach that seeks to gain insights to create new conceptual possibilities that are then examined;
- early commencement of data collection;
- concurrent collection and analysis of data;
- developing codes and categories from the data as these are collected and analysed;
- use of constant comparison and writing of self-memos to develop conceptualisation and build a theory;
- use of theoretical sampling and theoretical saturation to develop theory;
- initial use of literature as a complementary source to the categories and concepts emerging in the data, rather than as the source to categorise these data;
- later use of literature to review the place of the grounded theory in relation to existing theories;
- development of theory that is grounded in the data.

and Corbin 2008; Walsh et al 2015a). A **Grounded Theory** strategy, often referred to as 'Grounded Theory (Methodology)' offers distinctive, sequential guidelines for using qualitative methods inductively to develop theory from data. In contrast, '**grounded theory (method)**' is the data collection procedures and analysis techniques used to derive meaning from the subjects and settings being studied (Section 13.9). The outcome of this method is a **grounded theory**, that is a theory that is grounded in or developed inductively from a set of data. In this sub section we consider the development of Grounded Theory, its key elements, and the implications of adopting it as a strategy. In this section we use capital letters (**G**rounded **T**heory) to distinguish the research strategy from the outcome, a **g**rounded **t**heory (no capital letters). The common key elements of the strategy are summarised in Table 5.5.

Development

Grounded Theory was developed by Glaser and Strauss (1967) as a response to the 'extreme positivism' of much social research at that time (Suddaby 2006: 633). Believing positivism is suited to research in the natural sciences, they considered social research should use a different philosophy. By adopting an interpretive approach in social research to explore human experience, 'reality' is seen as being socially constructed through the meanings that social actors ascribe to their experiences and actions. Grounded Theory was therefore developed as a strategy to analyse, interpret and explain the meanings that social actors construct to make sense of their everyday experiences in specific situations (Glaser and Strauss 1967; Suddaby 2006; Charmaz 2014).

Grounded Theory is used to build theoretical explanations of social interactions and processes in a wide range of contexts. As many aspects of business and management are about people's behaviours, for example consumers' or employees', a Grounded Theory strategy can be used to explore a wide range of business and management issues. As the title of Glaser and Strauss's (1967) book *The Discovery of Grounded Theory* indicates, the aim is to 'discover' or generate theory grounded in the data produced from the accounts of social actors.

Not only did Glaser and Strauss (1967) challenge traditional philosophical assumptions about conducting social research at that time, they also developed a set of principles and guidelines to conduct Grounded Theory. These provide a systematic and emergent approach to collect and analyse qualitative data.

Grounded Theory is usually considered as using an inductive approach, although, as we discuss later, it may be more appropriate to think of it as abductive, moving between

induction and deduction (Charmaz 2011; Strauss and Corbin 1998; Suddaby 2006). Data collection starts by collecting data such as from an initial interview or observation and then analysing these as soon as possible and before collecting more data. This is known as collecting and analysing data simultaneously. Analysis commences by identifying analytical codes that emerge from the initial interview or observation data. Each code is used to label pieces of data (such as a line, sentence or paragraph in an interview transcript) with the same or similar meaning. Coding also allows related fragments of data from different interviews or observations to be linked together to facilitate the on-going process of analysis (Section 13.9).

Grounded Theory is a useful and widely recognised research strategy and yet it has been the subject of much evaluation, criticism and even misunderstanding (Box 5.8). This is partly due to the development of different approaches to grounded theory method. Glaser and Strauss, who developed Grounded Theory, each went on to develop different approaches to its use. Strauss has become associated with the development of a



Box 5.8 Focus on management research

What is Grounded Theory?

A symposium held to debate the question 'What is Grounded Theory?' is reported in a dedicated section of an issue of *Organizational Research Methods*. Following an Introduction, this section is composed of five related articles that seek to address and debate this question. The first article contains the edited comments of the six panel members who contributed to this symposium (Walsh et al. 2015a). These contributors include Barney Glaser, one of the originators of Grounded Theory. Three further articles form commentaries on the symposium (Corley 2015; Dougherty 2015; Locke 2015). The final article is a rejoinder by the panel members to the three commentaries (Walsh et al. 2015b). Walsh's introductory comments in Walsh et al. (2015a) provide the rationale for this symposium, 'In 2006, Suddaby wrote a very interesting piece detailing what Grounded Theory "is not" . . . It has now become even more essential and urgent to understand the full reach and scope of Grounded Theory and to clarify what GT "is" as different applications of GT have led to a rather blurred picture of it.'

Walsh says that approaches to Grounded Theory vary from the way in which it was originally conceived, some using all of its methodological elements and others only using particular elements such as a coding procedure. Variations to Grounded Theory are referred to as remodelling. The original, orthodox version is referred to as 'Classic' Grounded Theory, defined in Holton's comments in Walsh et al. (2015a) as the grounded theory methodology outlined in Glaser and Strauss (1967) and then developed in the subsequent work of Glaser (e.g. 1978, 1992). The scope of this approach is seen to be:

- philosophically flexible: it can be used by either positivist or interpretive researchers;
- a general methodology: it can be used with qualitative or quantitative data, or both, providing that theoretical sampling occurs in its collection;
- one that emphasises the study of a phenomenon in its context over the use of prior existing theory;
- a theory-building method that implies use of an exploratory and inductive data-driven process that may incorporate deduction to build theory.

The debate between the six panel members of this symposium and the authors of the three articles who offered their comments provides further insight into the question 'What is Grounded Theory?'. In seeking to address this question, Locke (2015: 615) points readers interested in developing 'a fuller picture of the grounded theory arena [to] consult *Developing Grounded Theory: The Second Generation* (Morse et al 2009) complied by six grounded theory practitioners . . . who apprenticed with Glaser and Strauss. . . and embody the distinctions and tussles that have evolved in the domain'.

particularly prescriptive approach to grounded theory method (e.g. Corbin and Strauss 2008; Strauss and Corbin 1998).

Key elements

Grounded Theory means that the process of data collection and analysis becomes increasingly focused, leading to the generation of a contextually based theoretical explanation (Bryant and Charmaz 2007). It comprises a number of key elements, namely coding, constant comparison, memo writing, theoretical sampling (including theoretical saturation), and theoretical sensitivity.

Coding: In the Grounded Theory strategy of Strauss and Corbin (1998) there are three coding stages: the reorganisation of data into categories is called **open coding**, the process of recognising relationships between categories is referred to as **axial coding** and the integration of categories to produce a theory is labelled **selective coding**. More recently, Corbin has altered the approach in Corbin and Strauss (2008), with axial coding being combined within open coding and selective coding simply becoming 'integration' (Section 13.9). Charmaz's (2014) approach is more flexible, involving two principal coding stages known as initial coding and focused coding.

Constant comparison: Underpinning coding is the process of **constant comparison**. Each item of data collected is compared with others, as well as against the codes being used to categorise data. This is to check for similarities and differences, to promote consistency when coding data and to aid the process of analysis. Where appropriate, new codes are created, and existing codes reanalysed as new data are collected. Constant comparison promotes the higher levels of analytical coding we referred to earlier because it involves moving between inductive and deductive thinking. As you code data into categories, a relationship may begin to suggest itself between specific codes (here, inductive thinking links specific codes to form a general proposition). This emerging interpretation is 'tested' through collecting data from new cases (here, deductive thinking tests this abstract generalisation, to see if it stands up as an explanatory relationship to form a higher-level code) (Strauss and Corbin 1998). This process of gaining insights to create new conceptual possibilities that are then examined is termed abduction (Charmaz 2011; Suddaby 2006) (Section 4.5).

Memo writing: **Memo writing** aids the development of grounded theory throughout a research project as you define or make notes about:

- the codes being used;
- how codes change through the research process;
- how codes might be related, helping identify theoretical relationships and the emergence of higher-level codes and categories;
- any other ideas that occur to the researcher that help him or her to develop the research process and analyse the data.

Where you use a Grounded Theory strategy, your collection of self-memos will provide you with a chronological record of the development of your ideas and your project, and show how you arrived at your grounded theory.

Theoretical sampling: When using Grounded Theory, you will also need to decide how to select cases for your research. As you analyse data, the categories being developed will indicate the type of new cases (e.g. new participants) to select. The purpose of **theoretical sampling** is therefore based upon developing and testing the emerging theory and the evolving story line; participants being chosen purposively to inform this rather than to achieve statistical representativeness (Section 7.3). Your core theme, relationship or process around which you focus the research, and the need to test your emerging theory

also provides the focus to select new cases. Sampling continues until theoretical saturation is reached; when further data does not reveal any new properties that are relevant to a category, and where categories have become well developed and understood and relationships between categories have been verified (Strauss and Corbin 1998). This is also termed achieving conceptual density (Glaser 1992) or conceptual saturation (Corbin and Strauss 2008).

Objectivist and subjectivist grounded theory: A further difference has been revealed by Charmaz (2014), who makes a distinction between 'objectivist grounded theory' and 'constructivist grounded theory'. Charmaz views the approach of Glaser, Strauss and Corbin to grounded theory as being 'objectivist', which assumes that data indicate an external reality, just waiting to be 'discovered'. She considers that 'objectivist grounded theory' has positivist leanings. According to this view, it is only 'constructivist' grounded theory that is truly based on an interpretive approach, because it recognises that the researcher's role in interpreting the data will affect the development of a grounded theory. In this approach, grounded theories are 'constructed', not discovered. This might seem a rather abstract difference, but because Charmaz advocates a 'constructivist' approach she also promotes a more flexible approach to grounded theory method (Section 13.9).

Adopting a Grounded Theory strategy

Adopting a Grounded Theory strategy invariably has implications. These concern the data collection; use of existing theory; identifying a core category or categories around which to focus the research; and the time required to undertake this strategy. We briefly consider each of these.

Data collection: In Grounded Theory, data collection can start as soon as the research idea has been developed and the initial research participants have agreed to take part (or the first set of documents have been identified). This means you need to be interested in and committed to your research idea from the start.

Use of existing theory: There is sometimes confusion about the role of published theory in a Grounded Theory research project (Suddaby 2006; Locke 2015). Grounded theorists may use published theory before and during their research project. The idea for such a research project may come from existing theory and your understanding of the theoretical background to your research topic may help to inform the project in general terms. However, existing theory should not be allowed to influence how you code your data, decide on new cases and conduct your analysis. Grounded Theory is an emergent strategy and you need to be guided by concepts emerging from the data you collect rather than being sensitised by concepts in existing theory. This is known as **theoretical sensitivity**, where you focus on interpreting meanings by using *in vivo* and researcher-generated rather than *a priori* codes (Section 13.6) to analyse your data and construct a grounded theory (Glaser 1978). Theoretical sensitivity means that you must be sensitive to meanings in your data, generating a theory grounded in them. You will, however, need to allow yourself sufficient time later on to link your grounded theory to published theories as you write your research report!

Identifying a core category: The emergent nature of the strategy means your identification of a core category or categories around which to focus your research and develop a grounded theory is crucial. This requires rigorous use of coding, constant comparison, theoretical sampling until theoretical saturation is reached, alongside theoretical sensitivity to develop a theoretical explanation.

Time requirements: Using Grounded Theory is time-consuming, intensive and reflective. Before committing yourself to this strategy, you need to consider the time that you have to conduct your research, the level of competence you will need, your access to

data, and the logistical implications of immersing yourself in an intensive approach to research. Kenealy (2012) advises novice Grounded Theory researchers to identify one approach to grounded theory method and follow it without too much adaptation. He also advises researchers to focus on identifying 'ideas that fit and work' from their data to develop a grounded theory (Kenealy 2012: 423). Kenealy recognises that using Grounded Theory requires experience but says that the only way to build this is to practise the use of grounded theory method!

Narrative Inquiry

A narrative is a story; a personal account which interprets an event or sequence of events (Box 5.9). Using the term 'narrative' requires a distinction to be drawn between its general meaning and the specific meaning here. A qualitative research interview inevitably involves a participant in storytelling, and so the term 'narrative' can be applied generally to describe the nature or outcome of a qualitative interview. As a research strategy, however, **Narrative Inquiry** means collecting the experiences of participants as whole accounts, or reconstructing their experiences into narratives.

The purpose of Narrative Inquiry is to derive theoretical explanations from narrative accounts while maintaining their integrity. Where your research question and objectives are consistent with an interpretivist philosophy and a qualitative methodological choice, Narrative Inquiry may be suitable. It will allow you to analyse the linkages, relationships and socially constructed explanations that occur naturally within narrative accounts in



Box 5.9 Focus on student research

Using Narrative Inquiry to explore marketing strategies

Kasia was undertaking a marketing degree and, because of her longstanding interest in fashion and textiles, she hoped to find work in that sector. Kasia's interests led her to focus her research project on factors that affected the success of marketing strategies in a small sample of fashion companies. After considering her choice of research strategy and discussing this with her project tutor, she decided to adopt a Narrative Inquiry strategy, using online in-depth interviews with the marketing directors from a sample of three medium-sized fashion companies who had agreed to grant her access. Kasia realised that the outcome of her research would very much depend on the quality of these three in-depth interviews. She decided to send each an email briefly outlining this approach and a list of the structural elements of narrative inquiry she had read about.

She was nervous in her first interview and realised that her participant, Hetal, sensed this. Hetal had read Kasia's email and knew a little about Narrative Inquiry from her own degree studies. Hetal provided Kasia with a full and useful narrative of the factors affecting the outcomes of her employer's marketing strategy over the past year. However, after the interview Kasia realised that she had asked Hetal unnecessary questions on several occasions, interrupting the flow of Hetal's narrative account. Kasia wrote and thanked Hetal for her very useful narrative account and resolved to allow her two remaining interviewees to act as narrators, using their own voices to tell their stories.

Kasia started the next online interview with a list of elements and themes in which she was interested but resolved that her second participant, Jorg, should be allowed to use his own voice. Jorg provided Kasia with another full and useful narrative, with Kasia acting as listener rather than traditional interviewer, only seeking clarification occasionally, after explaining the nature and purpose of the process as they started. Kasia left this second interview feeling very pleased and looked forward to the next one.

order 'to understand the complex processes which people use in making sense of their organisational realities' (Musson 2004: 42). Chase (2011) distinguishes between asking participants to generalise when answering questions in more structured types of qualitative research and being invited to provide a complete narrative of their experience.

Narrative Inquiry preserves chronological connections and the sequencing of events as told by the narrator (participant) to enrich understanding and aid analysis. Chase (2011: 421) refers to this strategy as providing the opportunity to connect events, actions and their consequences over time into a 'meaningful whole'. Through storytelling the narrator provides their interpretation of these events, allowing you to analyse the meanings which the narrator places on them. Where there is more than one participant providing a personal account of a given context, the narrative researcher will also be able to compare and to triangulate or contrast these narratives.

A **narrative** is a personal account of an experience that is told in a sequenced way, indicating a flow of related events that, taken together, are significant for the narrator and which convey meaning to the researcher (Coffey and Atkinson 1996). Such narratives are likely to contain 'thick descriptions' of contextual detail and social relations. Gabriel (2018) argues that using narratives can offer powerful insights into the meanings accorded to events and experiences.

In Narrative Inquiry, the participant is the narrator, with the researcher adopting the role of a listener facilitating the process of narration (Box 5.9). The narrative provided may be a short story about a specific event, a more extended story (for example, about a work project, managing or setting up a business, or an organisational change programme) or a complete life history (e.g. Chase 2011; Maitlis 2012). While in-depth interviews are the most widely used method to collect stories, other methods such as participant observation (Coffey and Atkinson 1996), autobiographies, authored biographies, diaries, documents and informal discussions (Chase 2011; Maitlis 2012) may also be used. This raises the issue of the researcher adopting the role of narrator in particular circumstances, which we will consider later. Narrative Inquiry may be used as the sole research strategy, or in conjunction with another strategy as a complementary approach (Musson 2004).

Narrative Inquiry may be used in different ways. It may be used with a very small sample of one to three participants, selected as being typical of a much larger population (Chase 2011) (Box 5.9). Alternatively, a small sample may be selected as critical cases or extreme cases, such as company founders or entrepreneurs, from whom much may be learnt. Narrative Inquiry may also be used with slightly larger samples of participants from across an organisation, to analyse how narratives are constructed around an event or series of events. This would allow comparisons between accounts to establish whether they differ, such as between departments, occupational groups or genders.

The strategy is generally associated with small, purposive samples (Section 7.3) because of its intensive and time-consuming nature. It is likely to generate large amounts of data in the form of the narrative account, or of interview transcripts or observational notes.



Box 5.10 Checklist

Structural element questions to facilitate narrative analysis

- ✔ What is the story about?
- ✔ What happened, to whom, whereabouts and why?
- ✔ What consequences arose from this?
- ✔ What is the significance of these events?
- ✔ What was the final outcome?

Source: Developed from Coffey and Atkinson (1996)

The narratives that emerge may not be easy-to-use or in a structural and coherent form (Gabriel 2018). Box 5.10 outlines structural elements to facilitate analysis of narratives.

To achieve analytical coherence in a narrative account you may need to (re)construct the story from one or more in-depth interviews with one participant, or a number of interviews with different participants. This places you as the narrative researcher in a central role in telling the story. Decisions will need to be taken about what to include and what to leave out, and how to connect parts of the account (Section 13.10).

While analysis in Narrative Inquiry does not use the analytical fragmentation of Grounded Theory, neither does it offer a well-developed set of analytical procedures comparable to those used by grounded theorists. Despite this, analytical rigour is still important in order to derive constructs and concepts to develop theoretical explanations. While narrative researchers may believe that predefined analytical procedures are neither advisable nor desirable, this may make the task of analysis more demanding for you (Section 13.10).

Archival and documentary research

Data digitalisation, the rapid growth of online archives, and open data initiatives by governments and businesses, mean there is considerable scope for you to use an archival or a documentary research strategy. It is now possible to access such sources online from around the world through online data archives and gateways to governmental websites (Chapter 8). Organisations' websites may provide access to certain types of documentary sources such as annual reports, company results, financial highlights, press releases and regulatory news. Media websites also provide facilities to search for articles about organisations and business and management topics. Some documents created by individuals may be accessible through data archives (e.g. a collection of papers of a notable businessperson) but use of recently created materials will probably require you to contact a potential participant to negotiate access, where these are not considered to be private or commercially sensitive. An **archival research** strategy uses manuscripts, documents, administrative records, objects, sound and audio-visual materials held in archives, special collections and other repositories as the main sources of data. **A documentary research** strategy uses personal and official documents as the sources of data.

From our initial discussion it clear there is a wide range of potential archival and documentary materials available. Lee (2012: 391) suggests that 'a document is a durable repository for textual, visual and audio representations that may be retained and used in different times and spaces, creating the possibility that meanings may be interpreted differently'. This illustrates the wide range of materials and that their use and interpretation can vary. Categories of textual documents include:

- communications between individuals or within groups such as emails, tweets, letters, social media and blog postings;
- individual records such as diaries, calendars and notes;
- organisational documents such as administrative records, agendas and minutes of meetings, agreements, contracts, memos, personnel records, plans, policy statements, press releases, reports and strategy statements;
- government documents such as publications, reports and national statistics data sets;
- media documents including online and printed articles and other data;
- visual and audio documents include advertising posters, artefacts, audio recordings, audio-visual corporate communications (e.g. YouTube videos), digital recordings, DVDs, films, photographs, products, promotional advertisements and recordings, and television and radio programmes.

Documents used for research are considered secondary sources because they were created original for a different purpose. However, there is a significant difference between re-analysing data collected originally for a research purpose and using secondary sources in an archival or documentary research strategy. Where previously collected research data are re-analysed for a different purpose in a secondary data analysis, the quality of the original research data needs to be assessed. For example, how was the survey sample selected? Was the original research designed to overcome threats to reliability and validity (Section 5.8)? In contrast, where documents are used as secondary data in an archival or documentary research strategy, their original purpose had nothing to do with research and so you will need to be sensitive to their nature and original purpose, the way in which you analyse them and the generalisations that you can draw (Hakim 2000).

Data from archives documents may be analysed quantitatively, qualitatively or both. Analysing textual documents qualitatively can enable you to generate a rich or 'thick' description of key events, the context within which these events occurred, the roles of the actors involved, the influence of external influences such as economic or commercial pressures, as well as outcomes. Your scope to achieve such an outcome will depend on whether you find suitable documents. Documents may, for example, allow you to analyse critical incidents or decision-making processes, or evaluate different policy positions or strategies. Using quantitative data from documents such as annual or financial reports may, for example, facilitate comparisons between organisations or across reporting periods. Prior (2007) points out that documents can also be analysed to reveal:

- not only what they contain but what is omitted;
- which facts are used and why these might be emphasised while others are not used;
- how they are used in an organisation and how they are circulated and to whom.

The utility of archival or documentary research strategies will depend on their appropriateness to your research question and objectives and gaining access to sufficient suitable documents. You may be refused access to documents or find some data are restricted for confidentiality reasons. You may also find that the documents you locate vary in quality, especially where they come from different sources. Data may be missing or presented inconsistently, making comparison difficult or potentially leaving gaps in your analysis (Box 5.11). Using an archival or documentary research strategy will therefore necessitate establishing what documents are available and designing your research to make the most of these. This may mean combining this research strategy with another; for example, conducting documentary research alongside a Grounded Theory strategy based on qualitative interviews and using similar procedure to analyse both sets of data. Alternatively, you might use documentary research within a case study strategy.

Case study

A **case study** is an in-depth inquiry into a topic or phenomenon within its real-life setting (Yin 2018). The 'case' in case study research may refer to, for example, a person, group, organisation, association, process or event. Choosing the case to be studied and determining the boundaries of the study is a key factor in defining a case study (Flyvberg 2011). Once defined, case study research sets out to understand the case within its setting or context (Eisenhardt and Graebner 2007).

The study of a case within its real-life setting or context helps to distinguish this research strategy from others. In an experimental strategy, contextual variables are highly controlled as they are seen as a potential threat to the validity of the results. In a survey strategy, research is undertaken in a real-life setting, but the ability to understand the

Box 5.11 Research in the news

Historians having to tape together records that Trump tore up

An article in *The Guardian* in January 2021 highlighted growing concern that Donald Trump's White House Records would be incomplete due to his habit of ripping up papers before discarding them. This had led to officials spending hours taping records back together. Officials also had to be reminded not to conduct official business using text messaging apps or private emails and to preserve it if they did. While it is estimated that computer systems have captured the vast majority of records, they have not been able to capture those records that were not created or logged into the system.

In 2021 Trump's electronic and paper records were transferred to the United States National Archives. While the Biden administration could see these documents immediately, members of the public are likely to have to wait. Trump, like other presidents, has restricted public access for up to 12 years.

Source: Staff and Agencies (2021) 'Historians having to tape together records that Trump tore up', *The Guardian* 17 January [online].

impact of context is limited by the number of variables for which data can be collected. In contrast, case study research is often used when the boundaries between the phenomenon being studied and the context within which it is being studied are not always apparent (Yin 2018).

A case study strategy has the capacity to generate insights from intensive and in-depth research into the study of a phenomenon in its real-life context, leading to rich, empirical descriptions and the development of theory (Yin 2018). They can be designed to identify what is happening and why, and to understand the effects of the situation and implications for action; often using both qualitative and quantitative data from a range of sources. Although case studies have been widely used over a long period, including in business and management, they have been criticised by some because of 'misunderstandings' about their ability to produce generalisable, reliable and theoretical contributions to knowledge (Flyvberg, 2011). This is largely based on positivist criticisms of using small samples and more generally about using interpretive, qualitative research. This type of criticism has been countered and is generally losing favour as the value of qualitative and mixed methods research is recognised more widely (Denzin and Lincoln 2018).

Case studies are designed in different ways dependent upon their purpose. They have been used for descriptive, exploratory or explanatory purposes by 'positivist' as well as 'interpretivist' researchers both deductively and inductively. Some positivist researchers have also advocated using case studies inductively to build theory and to develop theoretical hypotheses, which can be tested subsequently. In this way, the use of the case study is advocated in the early, exploratory stage of research as a complement to deductive research (Eisenhardt and Graebner 2007). This approach has been called 'indicative case study research', designed to reveal 'specific attributes' rather than rich description (Ridder et al. 2014: 374).

Yin (2018) recognises that case studies may be used not only for exploratory but also descriptive and explanatory purposes. An explanatory case study is likely to use a deductive approach, testing the applicability of theoretical propositions, to build and verify an explanation (Chapter 13). Interpretivist researchers are more interested, at least initially, to develop richly detailed and nuanced descriptions of their case study research (Ridder et al. 2014). For some interpretivists, making comparisons with existing theory is unnecessary. Stake (2005) notes many interpretivist researchers prefer to describe their case study in ample detail, allowing readers to make their own links to existing theory. Other interpretivist researchers inductively analyse their data, identifying themes and patterns and, at some point, locating this in existing literature in order to refine, extend or generate theory (Ridder et al. 2014; Chapter 13). If you are an interpretivist, it is highly likely that you will need to follow this second route and provide a clear link to theory!

Orthodox and emergent designs

Lee and Saunders (2017) differentiate between research designs for 'orthodox cases' and 'emergent cases'. An **orthodox case study** strategy involves an approach that is rigorously defined and highly structured before the research commences, with the intention that it will proceed in a linear way. This reflects the rational approach to conducting research where literature is reviewed first, the research question is defined, the research project is designed, preparation for the conduct of the research undertaken, and data are collected, analysed, interpreted and then reported. This approach to case study strategy is likely to be underpinned by realist philosophical assumptions. An **emergent case study** strategy involves you strategically choosing a case study environment within which research will be conducted and allowing the focus of the research to emerge through the different stages of data collection and analysis incorporating relevant literature. This approach is likely to be underpinned by interpretivist or constructivist philosophical assumptions.

The existence of various case study designs offers both opportunities and challenges. Where you are considering using a case study strategy, you may be able to find earlier work in the social sciences, if not specifically in business and management, which provides guidance in an approach that fits logically with your research idea and question (deductive or inductive, exploratory or explanatory etc.). To achieve an in-depth inquiry and a rich, detailed flow of analytical data, a case study strategy can use a mixed methods research design (although case studies may rely on a multi-method design). Case study research often uses a combination of archival records and documents (Chapter 8), different forms of observation (Chapter 9), interviews and focus groups (Chapter 10), questionnaires (Chapter 11), reflection and the use of research diaries and other research aids (Chapters 1 and 13). Case study research is likely to prove to be challenging because of its intensive and in-depth nature, and your need to be able to identify, define and gain access to a case study setting.

Case study structures

Yin (2018) distinguishes between four case study strategies based upon two discrete dimensions (Figure 5.5):

- single case versus multiple cases;
- holistic case versus embedded case.

A single case is often used where it represents a critical case or, alternatively, an extreme or unique case. Conversely, a single case may be selected purposively because it is typical or because it provides you with an opportunity to observe and analyse a phenomenon that few have considered before (Section 7.3). Many part-time students use the

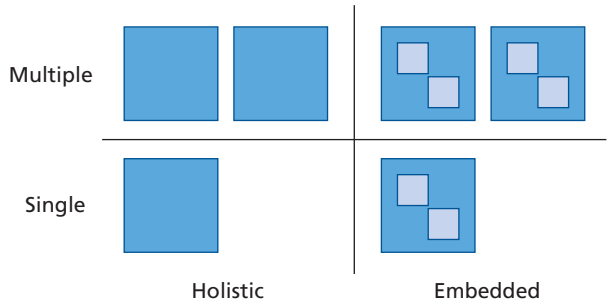


Figure 5.5 Case study structures
Source: Developed from Yin (2018)

organisation for which they work as a single case study (Box 5.12). The key here will be to ensure the case study strategy is appropriate for the nature of your research question and objectives.

A case study strategy can also incorporate multiple cases to establish whether findings can be replicated across cases. Here you will select cases on the basis that similar results are predicted to be produced from each one. Where this is realised, this is termed **literal replication** (Yin 2018). Alternatively, cases may be chosen where a contextual factor is deliberately different. The impact of this difference on the anticipated findings is predicted by the researcher. Where this predicted variation is realised, Yin terms this **theoretical replication**.

A multiple case study strategy may combine a small number of cases chosen to predict literal replication and a second small number chosen to predict theoretical replication (Yin 2018). Where all of the findings from these cases are as predicted, this would produce very strong support for the theoretical propositions on which these predictions were based. This approach commences deductively, using data to test theoretical propositions before, possibly, incorporating an inductive or abductive approach (Section 4.5). Where the findings are in some way contrary to the predictions in the theoretical propositions being tested, it would be necessary to reframe these propositions and select further cases to test them. Choosing between a single or multiple case study is not simply related to producing more evidence. While a multiple case study is likely to produce more evidence, the purpose of



Box 5.12
Focus on student research

Using a single organisation as a case study

Simon was interested in discovering how colleagues within his organisation were using a recently introduced financial costing model in their day-to-day work. In discussion with his project tutor, he highlighted that he wished to find out how it was actually being used in his organisation as a whole, as well as seeing if the use of the financial costing model differed between senior managers, departmental managers and front-line operatives. Simon's project tutor suggested that he adopt a case study strategy, using his organisation as a single case within which the senior managers', departmental managers' and front-line operatives' groups were embedded cases. He also highlighted that, given the different numbers of people in each of the embedded cases, Simon would be likely to need to use different data collection techniques with each.

each approach is different. A single case study approach is chosen because of the nature of the case. A multiple case study approach is chosen to allow replication.

Yin's second dimension, holistic versus embedded, refers to the unit of analysis. You may have chosen to use an organisation in which you worked or are currently employed as your case. If your research is concerned only with the organisation as a whole, then you are treating the organisation as a holistic case study. Conversely, even if you are only researching within a single organisation, you may wish to examine one or more sub-units within the organisation, such as departments or work groups. Your case will inevitably involve more than one unit of analysis and, whichever way you select these units, is called an embedded case study (Box 5.12).

Action Research

Lewin first used the term Action Research in 1946. It has been interpreted subsequently by management researchers in a variety of ways, but a number of common and related themes have been identified within the literature. An **Action Research** strategy is an emergent and iterative process of inquiry that is designed to develop solutions to real organisational problems through a participative and collaborative approach, uses different forms of knowledge, and will have implications for participants and the organisation beyond the research project (Coghlan 2011; Coghlan 2019). Our definition identifies five themes: purpose, process, participation, knowledge and implications, which we now consider.

Purpose

The purpose of an Action Research strategy is to promote organisational learning to produce practical outcomes through identifying issues, planning action, taking action and evaluating action. Coghlan (2019) emphasises Action Research is about research in action rather than research about action. This is because Action Research focuses on 'addressing worthwhile practical purposes' (Reason 2006: 188) and resolving real organisational issues (Shani and Pasmore 1985).

Process

The process of Action Research is both emergent and iterative. An Action Research strategy commences within a specific context and with a research question but because it works through several stages or iterations the focus of the question may change as the research develops. Each stage of the research involves a process of diagnosing or constructing issues, planning action, taking action and evaluating action (Figure 5.6). Diagnosing or constructing issues, sometimes referred to as fact finding and analysis, enables action planning and a decision about the actions to be taken. These are then taken, and the actions evaluated to tease out the issues (cycle 1). This evaluation provides a direction and focus for the next stage of diagnosing or constructing issues, planning action, taking action and evaluating action to understand the customer and project (cycle 2), demonstrating the iterative nature of the process. Subsequent cycles (cycle 3 and possibly beyond) involve further diagnosing or constructing of issues, taking into account previous evaluations, planning further actions, taking these actions and evaluating them; thereby acting on knowledge. Action Research differs from other research strategies because of its explicit focus on action related to multiple stages, to explore and evaluate solutions to organisational issues and to promote change within the organisation.

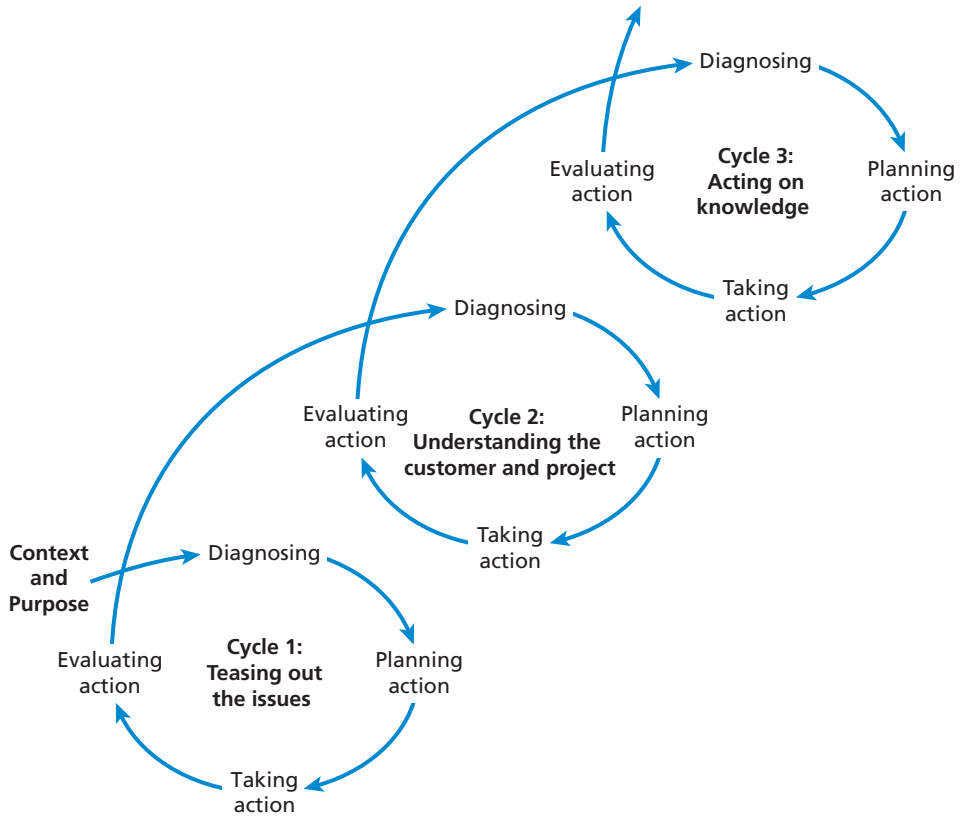


Figure 5.6 The three cycles of the Action Research spiral

Participation

Action Research is a social process in which an action researcher works with members in an organisation, as a facilitator and teacher, to improve the situation for these participants and their organisation. For Greenwood and Levin (2007) it can only be called Action Research if research, action and participation are all present. Organisational members need to cooperate with the researcher to allow their existing work practices to be studied. The process of Action Research then requires collaboration through its iterative cycles (Figure 5.6) to facilitate the improvement of organisational practices. This means building a democratic approach to communication and decision-making throughout each Action Research stage or cycle. The researcher passes on her or his skills and capabilities to organisational members so that they effectively become co-researchers in the Action Research process. Without such participation, this approach simply would not be viable, although creating such participation is likely to be difficult in practice and to meet with resistance at various levels (Reason 2006).

Participation of organisational members results usually from their involvement in 'a matter which is of genuine concern to them' (Eden and Huxham 1996: 75). Members of an organisation are more likely to implement change they have helped to create (Schein 1999). Once the members of an organisation have identified a need for change and have widely shared this need, it becomes difficult to ignore, and the pressure for change comes

from within the organisation. In this way, an Action Research strategy combines both data gathering and the facilitation of change.

Knowledge

Action is informed by both abstract theoretical knowledge, known as propositional knowledge; and participants' everyday lived experiences (their experiential knowledge) and knowing-in-action (knowledge that comes from practical application) (Reason 2006). These forms of knowledge are important in each stage or cycle of the Action Research process, encouraged by the collaborative approach that underpins this strategy. They lead to 'actionable knowledge' that has the potential to be useful to organisational practitioners as well as being academically robust (Coghlan 2011: 79). Coghlan believes that Action Research not only affects 'what we know' but emphasises understanding of 'how we know'.

Implications

The implications of Action Research go beyond the research project. Participants in an organisation where action research takes place are likely to have their expectations about future treatment and involvement in decision making raised (Greenwood and Levin 2007). There are also likely to be consequences for organisational development and culture change. Implications from the process may be used to inform other contexts. Academics will use the results from undertaking Action Research to develop theory that can be applied more widely. Consultants will transfer knowledge gained to inform their work in other contexts. Such use of knowledge to inform, we believe, also applies to others undertaking Action Research, such as students undertaking research in their own organisations.

There are a number of practical concerns to consider if you are thinking of using an Action Research strategy. Identifying an accommodating context, the emergent nature of this strategy, the need to engender participation and collaboration, the researcher's role as facilitator, and the stages or iterations involved are some of the reasons that make Action Research a demanding strategy in terms of the intensity involved and the resources and time required. Action Research can be suited to (part-time) students who undertake research in their own organisation, although its longitudinal nature means that it is more appropriate for medium- or long-term research projects. There is the related issue of deciding how many Action Research cycles are sufficient. Where these practical as well as political concerns have been properly anticipated and evaluated in terms of a feasible design, Action Research has the potential to offer a worthwhile and rich experience for those involved.

5.6 Considering time horizons

An important question to be asked in designing your research is, 'Do I want my research to be a "snapshot" taken at a particular time or do I want it to be more akin to a diary or a series of snapshots and be a representation of events over a given period?' This will, of course, depend on your research question. The 'snapshot' time horizon we call **cross-sectional**, while the 'diary' perspective we call **longitudinal**.

Cross-sectional studies

It is probable that your research will be cross-sectional, involving the study of a particular phenomenon (or phenomena) at a particular time. We say this because we recognise that

most research projects undertaken for academic courses are necessarily time constrained. However, the time horizons on many courses do allow sufficient time for a longitudinal study, provided, of course, that you start your research early!

Cross-sectional studies can use quantitative, qualitative and mixed methods research designs and a correspondingly wide variety of strategies. They may be using a survey strategy and a quantitative design to describe the incidence of a phenomenon such as the IT skills possessed by managers in one organisation at a given point in time. Alternatively, they may be using a case study strategy and both quantitative and qualitative data to examine how small UK businesses are trading with Europe post Brexit.

Longitudinal studies

The main strength of longitudinal research is its capacity to study change and development. This type of study may also provide you with a measure of control over some of the variables being studied. One of the best-known examples of this type of research comes from outside the world of business. It is the long-running UK television series *Seven Up*. This has charted the progress of a cohort of people every seven years of their life since 1964 (*63 Up,* 2019). Not only is this fascinating television, it has also provided social scientists with a rich source of data on which to test and develop theories of human development.

Longitudinal studies can use quantitative, qualitative and mixed methods research designs and a correspondingly wide variety of strategies. They may be using an experiment strategy and a quantitative design to establish the impact of a particular intervention. Alternatively, they may be using an ethnography strategy and qualitative data to examine how home working practices are adapting post pandemic.

Even with time constraints it is possible to introduce a longitudinal element to your research. There is a massive amount of published data collected over time just waiting to be reanalysed (as Section 8.2 indicates)! An example is the Edelman Trust Barometer, an annual trust and credibility survey undertaken every year since 2001 (Edelman, 2021). From these surveys you can gain valuable secondary data, which gives a global measurement of trust across the world and how it is changing with regard to government, businesses, media and non-governmental organisations (NGOs).

5.7 Anticipating potential ethical issues

Research ethics are a critical part of formulating your research design. While this is discussed in detail in Chapter 6, which focuses on issues associated with negotiating access and research ethics, it is crucial that you anticipate and address potential ethical issues at the design stage. In particular, Section 6.6 highlights ethical issues associated with specific aspects of the research process, and all these need to be considered now. Here we focus on two ethical issues that need to be considered at the start of designing your research:

- exposing your research subject(s) and yourself to harm;
- researching covertly.

Harm

Your choice of topic and how you collect you data will be governed by the need to minimise the risk of harm, embarrassment, pain or any other material disadvantage to those

involved in the research. You may be particularly interested to study the consumer decision to buy flower bouquets. Although this may provide some data collection challenges (who buys, for whom and why), there are not the same ethical difficulties as will be involved in studying, say, the funeral purchasing decision. Your research design in this case may have to concentrate on data collection from the undertaker and, ideally, the purchaser at a time as close to the death as delicacy permits; although the later would be considered insensitive. It is a matter of judgement as to whether the strategy and data collection method(s) suggested by ethical considerations will yield data that are valid.

Risk of harm does not only relate to potential research subjects. As a researcher you have a duty to protect yourself from harm. While it could be exciting to research the informal economy and use of the dark web for your research project, this could carry significant risks of harm to yourself, as well as the possibility of being involved in illegal activities. Alternatively, your research might necessitate collecting data in places considered unsafe. Most universities now require students to complete a risk assessment for their research projects and explain how risk would be minimised. Not surprisingly, projects where there is a significant risk of harm to you as researcher are unlikely to be approved. The general ethical issue here is that the research design should not subject those involved to the risk of embarrassment, pain, harm or any other material disadvantage.

Covert research

You may also need to consider whether you should collect data covertly, in other words where those you are researching are unaware they are the subject of research, and so have not consented. For example, if you plan to adopt an ethnographic strategy observing informants and intend not to reveal yourself as researcher you will need to explain ethically why this is necessary and appropriate. Beware, although covert research such as undertaking observation in a public place is usually considered acceptable, many university research ethics procedures preclude the use of any covert research. Circumstances related to the use of covert observation and issues related to privacy are considered rather in Sections 6.6 and 9.2.

5.8 Assessing the quality of research design

Underpinning our discussion of research design is the issue of research quality. This is neatly expressed by Raimond (1993: 55) when he subjects findings to the 'how do I know?' test, 'Will the evidence and my conclusions stand up to the closest scrutiny?' For example, how do you know that the advertising campaign for a new product has resulted in increased sales? How do you know that manual employees in an electronics factory have more negative feelings towards their employer than their clerical counterparts? The answer, of course, is that, in the literal sense of the question, you cannot know. All you can do is reduce the possibility of getting the answer wrong.

A key concern in designing your research will be to familiarise yourself with the criteria to be used to assess your research project. These assessment criteria might state that your research design and report have to consider issues of reliability or dependability, validity or credibility, or authenticity. Other assessment criteria will be generic, related to analytical and evaluative abilities, only implicitly recognising the need for reliable/dependable and valid/credible/authentic research in assessing your research design and outcomes. Familiarising yourself with the assessment criteria to be used will help you to decide how you should approach the way you describe and discuss the quality of your research.

A split often occurs at this point between quantitative and qualitative research designs and the associated philosophical underpinnings. For example, positivists use the 'canons of scientific inquiry' related to reliability and validity to assess the quality of research, while interpretivists adapt the terms 'reliability' and 'validity' to assess their research, or reject them as inappropriate (Lincoln et al. 2018). We briefly discuss each of these approaches to establish and assess research quality.

Scientific canons of inquiry: reliability and validity

Reliability and validity are central to judgements about the quality of research in the natural sciences and quantitative research in the social sciences. Their role in relation to qualitative research is contested, as we discuss later. **Reliability** is the extent a data collection procedure yields consistent findings. If a researcher is able to replicate an earlier research design and achieve the same findings, then that research would be considered reliable. **Validity** is the extent these procedures measure accurately what they are intended to measure, and the research findings are about what they profess to be about:

1. Do the measures being used in the research to assess the phenomenon being studied actually measure what they are intended to – are they appropriate for their intended purpose?
2. Are the analysis of the results and the relationships being advanced accurate?
3. What do the research findings represent: does the claim about how generalisable they are stand up?

This first of these is sometimes termed **measurement validity** and is associated with face validity, construct validity, content validity and predictive validity (Section 11.4). The second refers to internal validity and the third to external validity.

Reliability

When considering reliability, a distinction is made between internal reliability and external reliability. Internal reliability refers to ensuring consistency during a research project. This may be achieved, if permitted, by using more than one researcher within a research project. As researchers conduct interviews or observations and code and analyse data they will be able to evaluate they agree and their consistency of use. You can help promote consistency through the stages of your research project by writing memos and keeping detailed notes about how you have coded, analysed and interpreted your data. External reliability refers to whether your data collection procedures and analysis techniques would produce consistent findings if you repeated them on another occasion, or they were replicated by another researcher. Ensuring reliability can be difficult as there are a number of threats to reliability (Table 5.6). Research that is unreliable will also prove to be invalid since any error or bias in data collection and analysis can affect the results and subsequent interpretation, casting doubt on the research.

These threats emphasise the need for methodological rigour in your research. More specific advice appears in other chapters, but one key aspect is to ensure that your research process is systematic, being clearly thought through and evaluated and not containing 'logic leaps and false assumptions'. To allow others to judge your work, you need to report and justify your methods fully and transparently.

Reliability is a key characteristic of research quality; however, while necessary, it is not sufficient by itself to ensure good-quality research. The quality of research depends also on its validity.

Table 5.6 Threats to reliability

Threat	Definition and explanation
Participant error	Factor altering adversely the way in which a participant or respondent answers or acts. For example, asking a respondent to complete a questionnaire just before a lunch break may affect the way they respond compared to choosing a less sensitive time (i.e. they may not take care and hurry to complete it)
Participant bias	Factor inducing a false response. For example, conducting an interview in a public space may lead participants to provide falsely positive answers where they fear they are being overheard, rather than retaining their anonymity
Researcher error	Factor altering the researcher's interpretation. For example, being tired or not sufficiently prepared, and misunderstanding some subtle meanings in participants' responses
Researcher bias	Factor inducing bias in recording or interpretation of participants' or respondents' responses. For example, allowing subjective views or dispositions to prevent fair and accurate recording and interpretation of participants' responses

Validity

Internal validity is the extent your findings can be attributed to the intervention you are researching rather than to flaws in your research design. For example, in an experiment, internal validity would be established where an intervention can be shown statistically to lead to an outcome rather than this having been caused by some other confounding variable acting at the same time. In a survey strategy using questionnaires, **criterion validity**, is whether the questions are actually measuring what they are intended to measure, thereby allowing accurate statistical predictions to be made (Section 11.3). These concepts are associated with quantitative research designs. Forms of measurement validity are discussed in Section 11.4.

Your research findings are considered invalid if a finding has been arrived at falsely or when an inaccurate relationship reported and, the most frequent causes are outlined in Table 5.7. Research that produces invalid results and conclusions will also be unreliable as it is highly unlikely a subsequent study will find the same false results and statistical relationships.

External validity is the extent research findings from a particular study are generalisable to other relevant contexts. For example, a corporate manager may ask, 'Can the findings from the research study in one organisation in our corporation also be used to inform policy and practice in other organisations in the group?' The chief executive of a multinational organisation may ask, 'Are the findings from the survey in the Finance and Resources Department applicable to other departments in the organisation?' Just as researchers take great care when selecting a sample from within a population to make sure that it represents that population, researchers and their clients are often concerned to establish the generalisability of their findings to other contexts. Even in such cases, however, it will be necessary to replicate the study in that other context, or contexts, to establish generalisability.

Table 5.7 Threats to internal validity

Threat	Definition and explanation
Past or recent events	Event changing participants' or respondents' perceptions. For example, a vehicle manufacturer recalling cars for safety modifications affecting customers' views about product quality (unless the objective of the research is to find out about post-product recall opinions)
Testing	Impact of testing on participants' or respondents' views or actions. For example, informing participants about a research project may alter work behaviour or responses during the research, if they believe it might lead to future consequences for them
Instrumentation	Impact of a changes to a research instrument during a research project affecting comparability of results. For example, in structured observational research on call centre operations, the definitions of behaviours being observed may be altered between stages, making comparison difficult
Mortality	Impact of participants or respondents withdrawing from a study. For example, participants or respondents leaving an organisation due to promotion during a study
Maturation	Impact of a change in participants or respondents outside of the influence of the study that affects their attitudes or behaviours etc. For example, management training may mean participants or respondents revise their responses during a subsequent research stage
Ambiguity about causal direction	Lack of clarity about cause and effect. For example, during a study, it was difficult to say whether poor performance ratings were caused by negative attitudes to appraisal or, negative attitudes to appraisal were caused by poor performance ratings

Alternative criteria to assess the quality of research design

The types of measurement validity and reliability just discussed in relation to quantitative research based on positivist assumptions, are often considered as philosophically and technically inappropriate for qualitative research based on interpretive assumptions. If these concepts are applied rigidly, where reality is regarded as being socially constructed and multifaceted, there is a mismatch between the nature of the research and how it is being judged. It therefore becomes difficult to demonstrate that qualitative research designs are of high quality and credible.

Three types of response to this are evident:

- adaptation of existing conceptualisations of validity and reliability;
- use of parallel versions with distinct names;
- use of alternative authenticity criteria.

Adaptation of existing conceptualisations

Those who continue to use the concepts of reliability and validity, adapting them to qualitative research, believe generally that, since all research needs to be reliable and valid, using these terms is important to be able to demonstrate the quality and comparable status of qualitative research. Qualitative research is not necessarily intended to be replicable, as it reflects the socially constructed interpretations of participants in that particular setting at the time it is conducted (Section 10.4). However, rigorous description of the research design, context and methods help others assess how it was undertaken and enable them to conduct similar studies. Use of more than one interviewer, observer and data can, where possible, also improve internal reliability of the research. Adaptation of the concept of internal validity to qualitative research is generally not considered a problem since the in-depth nature of qualitative methods means findings can be shown to be well grounded in rich data. In contrast, adaptation of external validity has been questioned as small samples limit the generalisability of qualitative studies. Other forms of generalisability can, however, demonstrate the quality and value of qualitative research. For example, findings from one qualitative research setting may lead to generalisations across other settings, where, for example, characteristics of the research setting are similar, or where learning from the research setting can be applied in another setting.

Use of parallel versions

Parallel versions of reliability, internal validity and external validity have been developed with distinct names that recognise the nature of qualitative research. In this regard, Lincoln and Guba (1985) formulated 'dependability' for 'reliability', 'credibility' for 'internal validity' and 'transferability' for 'external validity' (Table 5.8).

Alternative criteria

Others have moved further away from the concepts of reliability and validity developing new concepts through which to ensure and judge the quality of qualitative research. In this regard, Guba and Lincoln (1989) and Lincoln et al. (2018) have developed 'authenticity criteria' as an alternative to validity for constructivist and interpretivist research (Table 5.9).

Validation

In our discussion about assessing quality and alternative criteria to evaluate it we have already referred to techniques of validation without using this term. **Validation** is the process of verifying research data, analysis and interpretation to establish their validity/credibility/authenticity. We now discuss two techniques that, incorporated into your research design, can help validate the quality of your research:

- triangulation;
- participant or member validation.

Triangulation

Triangulation involves using more than one source of data and method of collection to confirm the validity, credibility or authenticity of research data, analysis and interpretation. This necessitates using a multi-method quantitative study, multi-method qualitative study or a mixed methods study (Section 5.4). Two or more independent sources of data and methods of collection are used within one study to ensure that the data are telling

Table 5.8 Parallel quality criteria

Criterion	Definition and techniques to achieve each
Dependability	This is the parallel criterion to reliability. In interpretivist research, the focus is likely to be modified as research progresses. Dependability means recording all these changes to produce a reliable/dependable account of the emerging research focus that may be understood and evaluated by others
Credibility	This is the parallel criterion to internal validity. Emphasis is placed on ensuring that the representations of research participants' socially constructed realities match what participants intended. A range of techniques to ensure this include: • lengthy research involvement to build trust and rapport and to collect sufficient data; • reflection using a different person to discuss ideas and test out findings etc.; • developing a thorough analysis that accounts for negative cases, refining the analysis in order to produce the best possible explanation of the phenomenon being studied; • checking data, analysis and interpretations with participants; • ensuring the researchers' preconceived expectations regarding what the research will reveal are not privileged over social constructions of the participant by regularly recording these and challenging them during analysis of the data.
Transferability	This is the parallel criterion to external validity or generalisability. Providing a full description of the research questions, design, context, findings and interpretations, allows the reader to judge the transferability of the study to other settings

Sources: Developed from Guba and Lincoln 1989; Lincoln et al. 2018

Table 5.9 Alternative quality criteria

Criterion	Definition
Fairness	Balanced representation, so that all stakeholder views, perspectives, claims concerns and voices are represented.
Ontological and educative authenticity	Raising of the level of awareness about the research with participants and those with whom they come in contact.
Catalytic and tactical authenticities	Prompting action by the participants, and the involvement of the researcher(s) in training participants in social and/or political action

Sources: Developed from Guba and Lincoln 1989; Lincoln et al. 2018

you what you think they are telling you. In a research study based on positivist assumptions, this will help reveal the 'reality' in the data. Interpretivist researchers challenge this outcome arguing that for participants, 'reality' is socially constructed and multifaceted. For

interpretivists, the value of triangulation is it adds depth, breadth, complexity and richness to their research (Denzin 2012; Denzin and Lincoln 2018).

Participant or member validation

Participant or **member validation** involves taking or sending research data back to participants, allowing them to confirm the accuracy by commenting on and correcting it. This includes showing them interview transcripts, observational or other notes, storied accounts as well as researcher interpretations of participants. Engaging participants in collaboration is increasingly important in all research designs and member validation can be incorporated into quantitative, qualitative mixed methods research. While the anonymous nature of some aspects of quantitative designs may preclude member validation, you may still find it useful to discuss the results from your quantitative analysis with a sample of respondents to help you to understand and interpret these data. Member validation may be problematic when a participant wishes to withdraw some of the data shared with you. You will need to differentiate between cases where participants correct your interpretation of the data they shared with you and cases where they simply change their attitude. The latter scenario relates to an ethical concern and you will need to reflect on the extent to which you should alter the original data (Sections 6.5 and 6.6).

Logic leaps and false assumptions

So far in this chapter we have outlined a range of research design decisions to help ensure that your research yields sufficient good-quality data. These decisions necessitate careful thought. Your research design will need to be logical and, along with any assumptions you make, to stand up to careful scrutiny. Raimond (1993: 128) advises you to 'stand back from your research [design] and take a critical, objective view of it, as though you were a detached observer'. This will allow you to see your design as others might, examining the research steps you propose in relation to your research question and objectives to see if they are logical, systematic and will stand up to rigorous scrutiny.

We also considered the issue of false assumptions and claims in the Introduction to Chapter 2 as you thought about choosing your research topic and developing your research proposal. Concern about making false assumptions and claims will continue to be a major issue as you design your research and then undertake it. Looked at this way, establishing the quality of your research is not an abstract idea but a tangible one that you need to be concerned about throughout your research project.

5.9 Recognising your role as researcher

This chapter has considered the decisions you need to take to formulate your research design and the interdependency between your research question and objectives, your research philosophy and your research purpose. You need to choose between quantitative, qualitative or mixed methods; between research strategies; and between time frames. Each decision will have implications for your design. Each decision also has implications for the ways in which you seek to establish a quality research design that is ethical. As you have read through this chapter, you have probably been evaluating each of these decisions in relation to practical constraints as well as personal preferences. We have alluded

to practical constraints in a number of places in the chapter in terms of the way they may affect each choice. A crucial practical consideration in deciding how to formulate a research design is related to your role as researcher.

The external researcher role

If you are a full-time student, you are likely to adopt the role of an **external researcher**. Where you intend to undertake research in one or a few organisations you will need to negotiate access to the organisation(s) and to those from whom you would like to collect data. Having achieved this you will need to gain their trust so that they will participate meaningfully to allow you to collect these data. You will need to take these practical factors into account when formulating your research question and your research design. Sections 6.2 to 6.4 provide more detail about issues of access that you need to take into account as an external researcher before finalising your research design.

In doing this you will need to consider the extent to which you engage with those from whom you collect data. For some research projects your engagement ends once data are collected. For others your engagement will be throughout the research process, working with an organisation or group to co-produce knowledge. Such **engaged scholarship** is a participative form of research in which you work with the organisation or group and obtain the advice and perspectives of key stakeholders to understand a complex problem (Van de Ven 2007). The engagement process is therefore a collaboration to produce high-quality research, reciprocate, address identified community (organisation) needs, where needed cross disciplinary boundaries, and support the democratisation of knowledge (Beaulieu et al. 2018). Van de Ven (2007) conceptualises engagement as the processes linking four points of a diamond emphasizing the importance in engaged scholarship of engaging:

- those who experience and know the problem in problem formulation;
- knowledge experts in theory building;
- methods experts and those providing access and data in the research design;
- the intended audience to interpret meanings and uses in problem-solving.

The internal researcher (practitioner researcher) role

If you are currently working in an organisation, you may choose to undertake your research project within that organisation and adopt the role of an **internal researcher** or **practitioner researcher**. As a part-time student, you will be surrounded by numerous opportunities to pursue business and management research. Indeed, like many people in such a position, you may be asked to research a particular problem by your employer.

As an internal researcher, another advantage will be your knowledge of the organisation. However, this advantage carries with it a significant disadvantage. You need to become conscious of the assumptions and preconceptions that you normally take-for-granted in your workplace. This is an inevitable consequence of knowing the organisation well and may prevent you from exploring issues that would enrich the research.

Familiarity may create other problems for you as an internal researcher. When we were doing case study work in a manufacturing company, we found it very useful to ask ‘basic’ questions revealing our ignorance about the industry and the organisation. These ‘basic’ questions are ones that as a practitioner researcher you would be less likely to ask because

you, and your respondents, would feel that you should know the answers already. There is also the problem of status. If you are a junior employee, you may feel that working with more senior colleagues inhibits your interactions as researcher practitioner. The same may be true if you are more senior than your colleagues.

A more practical problem is that of time. Combining two roles at work is obviously very demanding, particularly as it may involve you in much data recording 'after hours'. This activity is hidden from those who determine your workload and they may not appreciate the extra demands of your researcher role. There are no easy answers to these problems. All you can do is be aware of the possible impact on your research of being too close to your research setting.

Tietze (2012) offers some guidance for internal researchers. These include reflecting on your role as internal researcher so that you may recognise how this affects the way you design and conduct your research (where you have scope to influence what you are going to research). The research you undertake and the report you produce may have implications for those you work with and you will therefore need to consider the implications of how you research and what you report (Section 6.6). You will need to consider your emotions and to manage these during this process of being an internal researcher. The process of analysing, interpreting and theorising about the research data you collect may have the effect of making 'strange the all-too-familiar' (Tietze 2012: 68) and you will need to cope with the degree of detachment that this may produce as you re-evaluate the way in which you view your organisation.

5.10 Summary

- Research design is the way a research question and objectives are operationalised into a research project. The research design process involves a series of decisions that need to combine into a coherent research project.
- The focus of your research will be exploratory, descriptive, explanatory, evaluative or a combination of these.
- A methodological choice has to be made regarding using quantitative or qualitative methods, or both, in a mono-method, multi-method or mixed methods research design.
- Methodological choice will be underpinned by your research philosophy and it is important to recognise the associated assumptions and implications of these.
- A decision has to be made to use one or more research strategies, related to the nature of the research question and objectives and to ensure coherence with the research philosophy and other elements of the research design.
- Possible research strategies include: experiment; survey; ethnography; Grounded Theory; Narrative Inquiry, archival research, documentary research; case study; and Action Research.
- The choice of research strategy or strategies will be related to use of an appropriate time horizon.
- Research ethics play a critical part in formulating a research design.
- Establishing the quality of research is also a critical part of formulating a research design, using appropriate criteria to judge and ensure the quality of the research.
- Practical considerations will also affect research design, including the role of the researcher.

Self-check questions

Answers to these questions are available at the end of the chapter.

5.1 You wish to study the reasons why car owners join manufacturer-sponsored owners' clubs. You choose to use a qualitative methodology and narrative inquiry research strategy involving unstructured 'discussions' with some members of these owners' clubs. You are asked by a small group of marketing managers to explain why your chosen research design is as valid as using a quantitative methodology and survey strategy that uses a questionnaire. What would be your answer?

5.2 You are working in an organisation that has branches throughout the country. The managing director is mindful of the fact that managers of the branches need to talk over common problems on a regular basis. That is why there has always been monthly meetings. During the global pandemic monthly meetings were conducted online using cloud-based videoconferencing. However, it is now unclear whether it is cost-effective to return to monthly face-to-face meetings. Some managers feel that their time travelling would be better spent pursuing their principal job objectives. Other managers see face-to-face meetings as more helpful, and offer greater insights.

- The managing director has asked you to carry out some research on the format of the monthly meetings. You have defined the research question you are seeking to answer as 'What are the managers' opinions of face-to-face versus online monthly meetings?'
- Your principal research strategy will be a survey using a questionnaire to all managers who attend the monthly meetings. However, you are keen to triangulate your findings. How might you do this?

5.3 You have started conducting online interviews in a university with the non-academic employees (such as administrative and other support staff). The research objective is to establish the extent to which these employees feel a sense of 'belonging' to the university. You have negotiated access to your interviewees through the head of each of the appropriate departments. In each case you have been presented with a list of interviewees.

- It soon becomes apparent to you that you are getting a rather rosier picture than you expected. The interviewees are all very positive about their jobs, their managers and the university. This makes you suspicious. Are all the non-academic staff as positive as this? Are you being given only the employees who can be relied on to tell the 'good news'? Have they been 'got at' by their manager?
- There is a great risk that your results will not be valid. What can you do?

5.4 You are about to embark on a year-long study of customer service training for sales assistants in two national supermarket companies. The purpose of the research is to compare the way in which the training develops and its effectiveness. What measures would you need to take in the research design stage to ensure that your results were valid?

Review and discussion questions

5.5 Agree with a friend to watch the same television documentary.

- **a** To what extent is the nature of the documentary exploratory, descriptive, explanatory, evaluative or a combination of these?
- **b** Does the documentary use quantitative, qualitative or mixed methods?
- **c** What other observations can you make about the research strategy or strategies the documentary makers have used in their programme?

Do not forget to make notes regarding your reasons for your answers to each of these questions and to discuss these answers with your friend.

5.6 Use the search facilities of an online database to search for scholarly (peer-reviewed) articles that have used first a case study, second Action Research and third experiment research strategy in an area of interest to you. Download a copy of each article. What reasons do the articles' authors give for the choice of strategy?

5.7 Visit the Internet gateway to the European Union website (http://europa.eu/) and click on the link in your own language. Discuss with a friend how you might use the data available via links from this web page in archival research. In particular, you should concentrate on the research questions you might be able to answer using these data.



Progressing your research project

Deciding on your research design

- Review your research question, research aim and research objectives and, based on this decide the purpose of your research.
- Do your research question, aim, objectives, purpose and philosophy suggest using a mono method (qualitative or quantitative) multi-method (qualitative or quantitative) or mixed methods design? Make notes as you undertake this evaluation. Reflect on your options and decide which methodological approach is most appropriate in relation to your research question, aim, objectives, and purpose.
- Based on the decision(s) you have made so far, either (a) choose the research strategy that is suitable for your research, or (b), where you possibly have a choice, including using a combination of strategies, create a shortlist of research strategies that may be appropriate to conduct your research, together with the advantages and disadvantages of each.
- *If you have decided (a),* search for studies in the literature that are based on the use of your chosen research strategy. Evaluate how the authors of these studies have used this research strategy. Compare this to your proposed use of this research strategy. Identify learning points from these studies for your proposed research. Reflect on your choice of this strategy: confirm and justify that it is an appropriate choice for your research, or re-appraise your choice of research strategy.
- *If you have decided (b),* set this shortlist aside and search for studies in the literature that are similar to your own. Use these to note which strategies have been used. What explanations do the researchers give for their choice of strategy? Evaluate your shortlist against the notes from your search of studies in the literature. Use this evaluation to decide which strategy or combination of strategies would be most appropriate for your own research.
- Decide on the time frame to conduct your proposed research.
- Ask yourself, 'What practical constraints may affect my choice of proposed research design?' Use this question to review your decisions above and if necessary make changes. Repeat this step

until you are satisfied that your proposed research design is practical.
- Use your draft research design to list (a) potential threats to research quality and (b) ethical issues in your design and make notes about how you propose to deal with each. Where necessary, make further changes to the decisions in the steps above.
- Reflect on your own role in your research and, if needed, make further changes to the steps considered above until you are satisfied with your proposed research design.
- You should now be ready to discuss your proposed research design with your project tutor.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Case 5
Internationalizing strategy: Developing small firms and their local communities via engaged scholarship



industryviews/Shutterstock

Born the son of Yemeni immigrant port workers, Mohammed moved away from home initially to undertake his undergraduate studies. As the first in his family to go to university, he aspires to be a role model for his much younger siblings who are still at school and other young people in his community. Mohammed is working with three students on an International Consultancy Project within an engaged scholarship context, which is a part of his master's degree in International Business Management. Such research projects are usually undertaken using qualitative research design (Piekkari and Welch 2017) with a case study research strategy (Yin 2018). Mohammed knows engaged scholarship involves him and the other group members engaging with practitioners throughout the entire research process (Van de Ven 2007) from developing the research objectives to final execution. Thus, according to Van de Ven's (2007) 'diamond model', engagement should occur during all four phases of the research project: (1) problem formulation; (2) theory building; (3) research design; and (4) problem-solving.

Problem formulation and theory building

The student group hold a meeting with Jamala, the managing director (MD) of a small family-run manufacturing firm. This is also attended by the students' academic supervisor, Tristram, who is a practitioner with 20 years' industry experience. In this meeting, Jamala outlines a critical and strategic business issue which she wants to research collaboratively.

The aim of their research project is to explore the internationalization strategy of Jamala's firm and propose how to improve it. Jamala recently took over as MD of the family business following the sudden death of the founder, her father, who died after contracting Covid-19. Coincidentally, her father emigrated from Saan'a in the Yemen in the 1960s to work in a local foundry and started the family business following his redundancy in 1985. The company has been experiencing a year-on-year decline in international sales because of overseas competitors entering its core domestic market. Recently, the company has diversified and introduced some ground-breaking innovative products that can be appealing to international markets. If they proceed with these suggestions, Jamala plans to open a new local 'onshore' manufacturing site and recruit up to 200 new employees, thus contributing to the development of the local economy – a community with high unemployment levels. These employees will assemble their innovative new products for potential new export markets. Jamala is particularly interested in exploring internationalisation opportunities in the Asia-Pacific region as they have

been dependent on the United Kingdom (UK) market (85% by value), the Middle East (10%) and continental Europe (5%). Jamala needs convincing evidence before making this strategic and major investment decision.

As engaged scholars, Mohammed and his group engage with Jamala in their initial meetings to formulate the above problem and thus develop the objectives of the study. The main theory that the group select is the Uppsala model (Johanson and Vahlne 1977) in which firms acquire, integrate and use knowledge *sequentially* (in 'small steps . . . exporting to a country via an agent, later establish a sales subsidiary, and eventually, in some cases, begin production in the host country' to gain both market knowledge and commitment' (see also a chapter in their course textbook: Scott, 2020). This project, hence, can built on and contribute to the development of theory on internationalisation in small family businesses.

Research design and problem solving

The research design has to enable the group to justify the method to investigate the research question. Working closely with Jamala, Mohammed discusses the research strategy. They adopt a case study to research how a specific small firm (i.e. Jamala's family business) expands its international markets and, therefore, provides employment opportunities in a disadvantaged local community as well as increasing sales. In line with Piekarri and Welch (2012), the company will be their focal case study and they will build theories from the case (Welch et al., 2011) and make proposals regarding the internationalization strategy inductively.

After reviewing the literature on internationalization strategy and small firms, Mohammed and the students develop a questionnaire using the Qualtrics online survey platform to collect data and test three hypotheses: (1) International market knowledge is influential in selecting the market entry strategy of a small firm; (2) Networking in the target market has a positive relationship with selecting the market entry strategy of a small firm; and (3) The small firm's capability and knowhow enables it to enter new markets successfully.

Mohammed obtains a list of export-oriented small firms operating in the region from the local Chamber of Commerce, and from UK Trade and Investment (UKTI). Mohammed aims to distribute the questionnaire online to these small firms' senior executives as his research participants. He also plans to use the SPSS software package to undertake quantitative data analysis.

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Questions

1 To what extent do you consider Mohammed's chosen research strategy (case study) is appropriate to this engaged scholarship research project? Give reasons for your answer.
2 Mohammed and the other students have made various mistakes in formulating their research design. What are these mistakes and how could they be resolved?
3 In designing their research project, do you think that Mohammed and these students can satisfactorily answer their research question and achieve the aim of this research project with only one case study and is the data representative, valid and reliable enough?
4 Is this research project actually "engaged scholarship"?

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.

They are:

- The effectiveness of computer-based training at Falcon Insurance Company (focussing on the use of an experiment strategy);
- Embedded quality at Zarlink Semi-conductor (focusing on the use of mixed methods in a case study strategy);
- The international marketing management decisions of UK ski tour operators (focussing on an orthodox case study strategy);
- Managing the acquisition from the middle (focusing on undertaking a research project in your own organisation);
- Sangita's career (focussing on the decision of which research strategy to use);
- Managers' challenges when dealing with change (focusing on using an ethnographic strategy);
- The relationship between risk and return in loan decisions at credit unions (focussing on the use of an emergent case study).

Self-check answers

5.1 You would need to stress here that your principal interest would be in getting a deep understanding of why car owners join manufacturer-sponsored owners' clubs. You would discover why the owners joined these clubs and what they thought of them. In other words, you would establish what you set out to establish and, no doubt, a good deal besides. There is no reason why your discussions with owners should not be as valid as a survey questionnaire. Your initial briefing should be skilful enough to elicit rich responses from your interviewees (Chapter 10) and you may also use prompts to focus on themes that emerge in the narratives of your participants.

Of course, you may alleviate any fears about 'validity' by using a mixed methods research methodology and delivering a questionnaire as well, so that your findings may be triangulated!

5.2 The questionnaire will undoubtedly perform a valuable function in obtaining a comprehensive amount of data that can be compared easily, say, by district or age and gender. You might observe managers in both face-to-face and online meetings to see who does most of the talking. What are the non-verbal behaviour patterns displayed by managers?

Who turns up late, or does not turn up at all? You could also consider interviewing to managers in groups or individually. Your decision here would be whether to talk to them before or after the questionnaire, or both. Interview responses might be influenced by the medium through which these interviews were conducted. In addition, you could study the minutes of the meetings to discover who contributed the most. Who initiated the most discussions? What were the attendance patterns?

5.3 There is no easy answer to this question! You have to remember that access to organisations for research is an act of goodwill on the part of managers, and they do like to retain a certain amount of control. Selecting whom researchers may interview is a classic way of managers doing this. If this is the motive of the managers concerned, then they are unlikely to let you have free access to their employees.

What you could do is ask to see all the employees in a particular department rather than a sample of employees. Alternatively, you could explain that your research was still uncovering new patterns of information and more interviews were necessary. This way you would penetrate deeper into the core of the employee group and might start seeing those who were rather less positive. All this assumes that you have the time to do this!

You could also be perfectly honest with the managers and confess your concern. If you did a sound job at the start of the research in convincing them that you are purely interested in academic research, and that all data will be anonymous, then you may have less of a problem.

Of course, there is always the possibility that the employees generally are positive and feel as if they really do 'belong'!

5.4 This would be a longitudinal study. Therefore, the potential of some of the threats to internal validity explained in Section 5.8 is greater simply because they have longer to develop. You would need to make sure that most of these threats were controlled as much as possible. For example, you would need to:

- account for the possibility of a major event during the period of the research (wide-scale redundancies, which might affect employee attitudes) in one of the companies but not the other;
- ensure that you used the same data collection devices in both companies;
- be aware of the 'mortality' problem. Some of the sales assistants will leave. You would be advised to replace them with assistants with similar characteristics, as far as possible.

Get ahead using resources on the companion website at: **www.pearsoned.co.uk/saunders**.



- Improve your IBM SPSS for Windows research analysis with practice tutorials.
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Chapter 6



Negotiating access and research ethics

Learning outcomes

By the end of this chapter you should be able to:

- discuss the characteristics of access;
- demonstrate an awareness of issues associated with gaining traditional, Internet-mediated, intranet-mediated and hybrid access;
- evaluate a range of strategies to help you to gain access to organisations, groups and to individual participants;
- discuss the importance of research ethics and the need to act ethically;
- identify ethical issues at each stage of your research;
- recall the principles of data protection and data management;
- ensure you research ethically and progress your research project by gaining access;
- apply the knowledge, skills and understanding gained to your own research project.

6.1 Introduction

Many students want to start their research as soon as they have identified a topic area, forgetting that access and ethics are critical aspects for the success of any research project. Such considerations are equally important whether you are using secondary data or collecting primary data and whether you are conducting your research face-to-face or remotely (perhaps using online questionnaires or Internet-mediated interviews). Consequently, you need to think carefully about how access can be gained to collect your data and about possible ethical concerns that could arise throughout your research project. Without paying careful attention to both of these aspects, what seems like a good idea for your research may prove impractical or problematic, potentially causing harm to those you research.

Business and management research almost inevitably involves people. Ethical concerns are greatest where research involves human participants, irrespective of whether the research is conducted remotely or face-to-face. Your university, as well as an increasing number of



organisations, will require you to obtain formal research ethics committee approval (or a favourable ethical opinion) for your proposed research prior to commencing data collection. Universities and other organisations help facilitate the process of ethical scrutiny and approval by providing ethical guidelines for researchers. We consider ethical guidelines later, but it is worth noting that being clear to others, including participants, about how you will address potential ethical concerns is a crucial aspect of your research project, as our opening vignette illustrates.

Understanding the risk of developing Covid-19

Throughout the pandemic, research has been conducted to understand more about the disease. One study, in which Mark took part, was to understand how many people in England have antibodies that might protect against Covid-19. Like other participants, Mark was invited to take part by a letter signed by the Parliamentary Under Secretary of State for Health and Social Care, the co-director of the university research institute and the director of the independent research organisation who



Source: MikeDotta/Shutterstock

were undertaking the study on behalf of the government. This initial letter stressed that participation was extremely important, that he had been chosen at random and that his taking part was completely voluntary. It also provided details of the research, which included doing a finger-prick test at home and completing an online questionnaire, how to sign up to the study online, offering a free telephone number to register for those who did not have access to the Internet. The back of the letter offered a variety of additional information including more detail on who was carrying out the study, how those invited to take part were chosen at random, the nature of the test and what would happen with the data. Of particular interest was the assurance the data would be kept confidential and that nobody would be identifiable from the published results. The data could, with agreement, be linked to other health data already held by the National Health Service about those who participated.

Having agreed to take part, like other participants, Mark received his Covid-19 in-home antibody testing kit by post along with a letter explaining how to take part and a detailed information sheet. Among other aspects, the information sheet reiterated that whether or not he decided to participate in the study was entirely up to him and that he could change his mind at any time without giving a reason. It also explained how the data collected would be stored and how each participant would be given a unique security number to make sure they could not be identified from their data. As before, additional contact details were provided as well as details about how to make a complaint.

Following the instructions, Mark completed the antibody test, took a photograph of the results and uploaded this to the website. Here he also completed an online questionnaire.

In this chapter we start by considering the characteristics of access and issues of feasibility and sufficiency in relation to gaining access (Section 6.2). Section 6.3 examines issues associated with researcher status, and Section 6.4 explores issues associated with Internet-mediated access. Section 6.5 discusses a number of established strategies to help you gain access to organisations and to your intended participants within these. Section 6.5 provides an overview of research ethics, the process of ethical reviews and outlines ethical principles for both generally and for Internet-mediated research. Section 6.6 anticipates the scope for ethical issues to occur during the various stages of your research project. Finally, Section 6.7 introduces data protection principles and data management, both of which you will need to consider in order to manage and store your data ethically.

6.2 Characteristics of access

Your ability to collect your own primary, or obtain secondary, data will depend on gaining access to an appropriate source or sources. The appropriateness of a source depends on your research question and objectives and the research design (Chapter 5). In this section we discuss three overlapping characteristics that will help you decide the precisely what is required: the type, nature and level of access (Figure 6.1).

Type of access

Types of access focus upon the nature of interactions with participants used to collect data. **Traditional access** involves face-to-face interactions (to conduct experiments, interviews, focus groups, observations or deliver and collect questionnaires), telephone conversations (for telephone interviews), correspondence (for postal questionnaires) or visiting

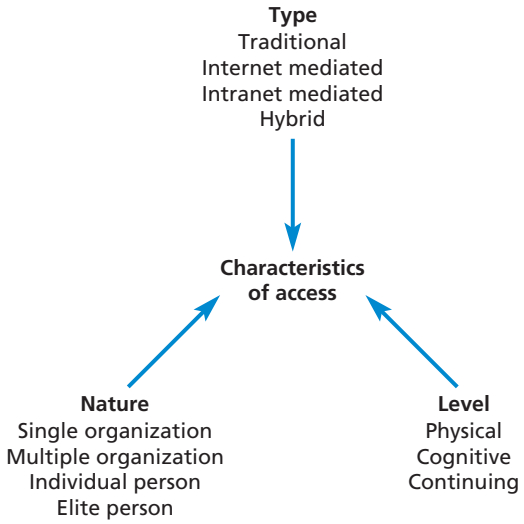


Figure 6.1 Characteristics of access

data archives (such as record offices or organisational archives, where data are not available online). In contrast, **Internet-mediated access** involves the use of different online technologies (e.g. email, video-conferencing, text messaging and apps for cloud-based platforms), to gain virtual access to deliver questionnaires, conduct archival research, discussions, experiments and interviews or to gather secondary data. A variant of this is **intranet-mediated access**, where you seek to gain virtual access (usually as an employee or worker) from within an organisation using its intranet. **Hybrid access** is where you use elements of both Internet mediated and traditional means to gain access (Box 6.6).

Nature of access

Another characteristic of access is the nature of access; whether your research design will involve collecting data from participants in a single organisation or group, across multiple organisations or groups, or if access to an organisation or group is irrelevant. For many research projects it will be sufficient to gain access to one organisation to conduct research and collect data; **single-organisation access**. For other research projects **multi-organisation access** to two or more organisations will be necessary. For example, a researcher using a case study strategy may focus their research in one organisation, hoping to be able to negotiate access to intended participants within this single case (Box 5.12). Another researcher, also using a case study strategy, may decide that meeting her research question and objectives requires multiple case organisations (Section 5.5, Figure 5.5). Gaining research access to one organisation can be difficult. Gaining access to multiple organisations may be even more difficult and time-consuming as it will be necessary to repeat the process We discuss strategies to gain access that apply to both single-organisation and multi-organisation research in Section 6.4.

Other research projects will not necessitate seeking organisational access. You may need to collect data directly from individuals with the same role such as digital marketing managers from a large number of organisations. Alternatively, you may wish to collect data from people who do not have an organisational affiliation such as staycation tourists. For other research projects you may wish to gain access to individuals who are notable

in their field (such as retired CEOs or social media influencers) but who may not have an organisational affiliation. Due to their notability, we refer to this as **elite person access**, distinguishing it from **individual person access** where an individual's neither affiliated to an organisation, nor considered to be elite.

Levels of access

Even where you wish to conduct your research within a single organisation, gaining access to intended participants is still likely to involve you in a multi-faceted process of negotiation across different **levels of access** (physical/virtual, continuing and cognitive). The level(s) you require will depend on your research question and objectives. For some research projects the person you approach to negotiate access will also be a person you wish to ask to participate in your research. This would be the case where you approach a financial manager in an organisation to ask him or her to take part in a research interview conducted by yourself. However, one of your research objectives may require you to ask members of staff in this finance department to participate in an online survey. In this case you would need to negotiate access not only with the finance manager but also with the members of staff in this department whom you wish to participate.

An initial agreement to conduct research is referred to as gaining **physical access** (Gummesson 2000) where the research will be face-to-face and gaining **virtual access** where it will be online. This can be difficult for three reasons. First, organisations, groups or individuals may not be prepared to engage in additional, voluntary activities because of the time and resources required. Many organisations receive frequent student requests for access and cooperation and would find it impossible to agree to all or even some of these. Second, the request for access may fail to interest the **gatekeeper** or **broker**, the person who controls access, making the decision whether or not to allow the researcher to undertake their research. This may be for a number of reasons, related to:

- a lack of perceived value in relation to the work of the organisation, group or the individual;
- the nature of the topic such as its potential sensitivity or concerns regarding confidentiality or sensitivity of the information required;
- perceptions regarding the researcher's lack of credibility or competence.

Finally, the organisation or group may have no choice but to refuse access for reasons unrelated to the research. An organisation may be undertaking a strategic review or considering whether to restructure its functions and therefore be unwilling to allow access at such a sensitive time. Even when someone is prepared to offer access, this may be overruled at a higher level in the organisation, due to some aspect of organisational politics. Such 'false starts' are invariably disappointing as you will need to find another organisation or group.

Even when you are able to negotiate physical or virtual access there are other levels of access that you will need to consider and plan for in your research strategy as access is usually a continuing process rather than a single event (Gummesson 2000; Marshall and Rossman 2021). Gaining access is often iterative and incremental, in which you gain entry to carry out the initial part of your research, and then seek further access in order to conduct another part (Box 6.1).

Physical or virtual access to an organisation will be granted formally through its management. However, to actually collect data from individuals, you will need to gain **cognitive access** from your intended participants, that is their acceptance and trust. Simply obtaining such access to an organisation is unlikely to be sufficient unless you are also



Box 6.1 Focus on student research

Negotiating access incrementally

Luc wished to undertake a series of Internet-mediated interviews in the departments and sections of a data management company. He initially managed to negotiate access to commence his research in the management systems support department, where he was granted permission to interview a sample of information systems support workers. As a result of conducting these interviews, he was then granted access within the same department to interview a sample of staff in the information technology section. Following the conduct of these interviews, the department's management team agreed to support his attempt to negotiate further access to interview staff in the company's accounting, human resources, marketing and sales departments.

able to negotiate yourself into a position where you can obtain consent and collect data from participants accounts to answer your research question and meet your objectives.

Gaining cognitive access to intended participants will ultimately be determined by whether they consent to take part in your research. Whether or not potential research participants agree, for example, to complete a questionnaire or take part in a research interview is the subject of **Leverage-saliency theory** (Groves et al. 2000). This recognises that different people will respond to different levers such as a request to participate in research in different ways and that their response is dependent on this being made salient to them. The key is to understand what encourages and what discourages, potential participants to participate; the latter resulting in non-response.

Leverage-saliency theory recognises the different attributes associated with any request to participate in research can influence intended participants decision to take part. For example, the topic of the research may be more or less interesting to different potential participants (Groves et al. 2004). The way in which the request to participate in the research is presented is also likely to affect how intended participants respond to this. Other attributes that may affect participation include the offer of incentives to take part, the purpose and use of the research and the requirements of participating in the research (Groves et al. 2000; Groves et al. 2004; Trussell and Lavrakas 2004).

While thinking how you will leverage responses; it is important to ensure your request appeals to all potential participants and not just those interested in the research topic. This will help reduce **non-response error**, where non-respondents in your intended sample differ in meaningful ways from those who take part and, as a consequence, are likely to have different characteristics and viewpoints to those who do respond and participate.

The access you manage to negotiate will therefore impact on your ability to select suitable participants or secondary data and whether your data are likely to be valid and reliable (Box 6.2) or credible and dependable. Selecting a suitable sample of, for example, customers, clients or employees requires access to organisational data, either directly or indirectly, and a request that outlines precisely how the sample should be selected (Sections 7.2 and 7.3). For longitudinal studies using primary data, access to participants will be needed on two or more occasions.

Negotiating physical or, in the case of Internet-mediated research, virtual access will be important to gain **personal entry** to one or more organisations, being a precursor to developing cognitive access to allow you to collect the necessary data. The suitability of the access negotiated can be evaluated using the concepts of feasibility and sufficiency. **Feasibility** is concerned with whether it is practicable to negotiate access for your proposed research project. Your research design may be grand and elegant, but if it is not



Box 6.2 Focus on student research

Gaining access to a suitable sample

Maria wished to discover how component suppliers viewed the just-in-time delivery requirements of large manufacturing organisations that they supplied. Two large manufacturing organisations agreed to introduce her to a sample of their component suppliers whom Maria could then interview. While undertaking her telephone interviews Maria noted that all of the interviewees' responses were extremely positive about the just-in-time delivery requirements of both large manufacturing organisations. As both manufacturing organisations had selected who she could interview, Maria wondered whether these extremely positive responses were typical of all the component suppliers used by these organisations or whether they were providing an unreliable and untypical picture.

possible to gain access to data then it will need revising. Once you have a proposal that you believe will be feasible in general terms, the next point to consider is whether you will be able to gain sufficient access to fulfil all of your research objectives. **Sufficiency** is the extent to which the access you negotiate will be enough to answer your proposed question and achieve your research objectives. You do not want to have to say, 'I could achieve research objectives a, b and c but not x, y and z!' Or, perhaps more likely, 'I can achieve research objectives a and b, but now I think about this carefully, I'm going to find it difficult to collect much data for c and x, which will then mean I can't do y and z!' You therefore need to consider fully the nature of the access that you will require and whether you will be able to gain sufficient access in practice to meet your objectives, to answer your research question. The clarity, which should result from having considered the nature and extent of the access that you require, will also be helpful in persuading organisations or groups to grant access since they are more likely to be convinced of your credibility and competence.

6.3 Researcher status

Even when you consider feasibility and sufficiency carefully, access is still unlikely to be straightforward, requiring persistence and emotional resilience (Peticcia-Harris et al. 2016). However, with careful planning you will be able to anticipate and, hopefully, overcome problems that occur in practice. Drawing on this, you may wish to consider where you are likely to be able to gain access and amend your topic and research design to reflect the nature of access. As Buchanan et al. (2013: 53–4) note:

> Fieldwork is permeated with the conflict between what is theoretically desirable on the one hand and what is practically possible on the other. It is desirable to ensure representativeness in the sample, uniformity of interview procedures, adequate data collection across the range of topics to be explored and so on. But the members of organisations block access to information, constrain the time allowed for interviews, lose your questionnaires, go on holiday and join other organisations in the middle of your unfinished study. In the conflict between the desirable and the possible, the possible always wins.

Problems of access may also vary with regard to your status relative to the organisations, groups or people you wish to research. We now consider these in more detail.

Access issues as an external researcher

If you are approaching one or more organisations or groups where you have little or no prior contact, you will be an **external researcher**. You will need to negotiate access at each level discussed earlier (physical/virtual, cognitive and continuing). Operating as an external researcher is likely to pose problems, although it may have some benefits. Your lack of status in relation to an organisation or group in which you wish to conduct research will mean gaining physical or virtual access is a major issue, and this concern will remain in relation to negotiating cognitive access (Box 6.3). Goodwill on the part of the organisation or group and its members is something that external researchers have to rely on at each level of access. Your ability to demonstrate your competence and integrity, and in particular your ability to explain your research project clearly and concisely, will be critical. Alongside, the gatekeeper can also play an important role: creating awareness of your research, adding credibility by her or his intervention and introducing you and your research project to the relevant people.

Even where you are not seeking to access participants in an organisation or group, you will still need to demonstrate competence and integrity. Here your role as an external researcher may prove beneficial as participants are usually willing to accept an external researcher as objective and without a covert agenda.

Access issues as an internal researcher or participant researcher

As an organisational employee or group member you are likely to undertake research in your own group or organisation as an **internal researcher** or a **participant researcher**. Even in this role, you may face problems negotiating physical or continuing access and still need to



Box 6.3 Focus on student research

The impact of a researcher's organisational status

David recalls a case of mistaken identity. His research involved gaining access to several employers' and trade union organisations. Having gained access to the regional office of one such organisation, David read and noted various organisational documents kept there over a period of a few days. During the first day David was located in a large, comfortable room and frequently brought refreshments by the caretaker of the building. This appeared to David to be very kind treatment. However, David did not know that a rumour had spread among some staff that he was from 'head office' and was there to 'monitor' in some way the work of the office. On attending the second day, David was met by the caretaker and taken to a small, plain room and no more refreshments appeared for the duration of the research visit. The rumour had been corrected!

Of course, this example of the effect of the researcher's (lack of) organisational status is most unfair on the large number of people who treat those who undertake research within their organisation very well in full knowledge of their status. However, it illustrates the way in which some people may react to perceptions about status.

obtain formal approval to undertake research from your organisation or group. As an internal researcher, potential participants may be suspicious about why you are undertaking your research project and the data collected will be used. Their views about the part of the organisation for which you work and your status may also affect whether your gain cognitive access. Such problems may be exacerbated if you are given a project to research, perhaps by your line manager or mentor, where others are aware that this is an issue about which management would like to implement change. This is particularly likely where resulting change is perceived as being harmful to potential participants. It may also suggest ethical concerns (Section 6.6).

6.4 Internet-mediated access

Internet-mediated access became the norm for much research during the Covid-19 pandemic, both for collecting primary and searching and locating secondary data. However, it still can be challenging to access to participants online who are suitable for your research and who match the characteristics of your intended sample (Sections 7.2 and 7.3). Similarly, it can be difficult to locate suitable secondary data (Section 8.4); both potentially leading to data quality issues.

Quantitative and qualitative data can be collected using the Internet. Online questionnaires can be accessed through a hyperlink displayed in an email or on a web page (Section 11.5). Experimental data may be collected online (Box 6.4). Internet-mediated observation can be conducted, using, for example, an online ethnographic research strategy (Section 9.5). Interviews or discussion groups may also take place online. These may be text based using SMS messaging applications, social networks or emails. They may also be conducted using telecommunication applications, such as Skype™ and Zoom™, to overcome the impersonal nature of a text-based Internet interview (Section 10.10). The Internet also provides access, through gateways and archives, to existing data sets that are available for secondary analysis (Section 8.2).

Online communities have generated extremely large amounts of material, especially qualitative but also quantitative, which subject to permission is often accessible to researchers.



Box 6.4 Focus on management research

Gaining access

Sara Althammer and colleagues (Althammer et al. 2021) conducted an online experiment over three weeks using a self-training intervention to research whether mindfulness interventions promoted work-life balance.

To gain access to potential participants for their experiment, the researchers used a range of different strategies. These included advertising flyers, professional email list servers, a snowball sampling approach and asking their professional and social contacts. For each they promoted their research as a scientific project that offered a free three-week training intervention using mindfulness to detach from work and enhance work-life balance. Potential participants were asked to sign up online and subsequently complete a daily questionnaire. In total, 379 people signed up online to take part in the research, 99 subsequently not completing any of the daily questionnaires used to collect the data. A further 93 completed fewer than three of these questionnaires and were also excluded, the remaining participants completing questionnaires for an average of 9.46 days.

Based on their findings, the authors concluded that a brief mindfulness self-training intervention could foster detachment, reduce work-life conflict and improve satisfaction with work-life balance.

As these communities organise around an interest or a particular product, service, place or lifestyle, their forums and bulletin (message) boards can be used to post messages and create a discussion over time among members. Groups' email lists can, with permission, be used to start conversations. Linked web pages provide online community resources organised by interest, such as for consumer-to-consumer discussion. **Blogs** (web logs) and to a lesser extent tweets provide a public online journal or diary. Numerous bloggers comment on political events, often from the perspective of their political beliefs. Others comment on their shopping experiences and offer consumer advice or on their travel experiences (Jiang et al. 2021). Many blogs and bulletin boards are organised through content management systems, although these can be accessed through specialised blog search engines (Kozinets 2020).

Determining the type of access

Internet-mediated access is subject to the same issues that affect traditional access. While the Internet, and more specifically the use of web links, messaging apps, email, social networks, webcam and web conferencing, may facilitate communication between you and your participants; the most suitable way to conduct your research and negotiate access will depend on your research question and objectives. In some circumstances you may conclude that it is more effective to gain physical rather than virtual access using associated methods (Box 6.5).



Box 6.5 Focus on student research

Physical or virtual access and methods?

Sab had a keen interest in IT and thought that he would conduct his research using Internet-mediated access and data-collection methods. His research focused on the ways in which senior managers influence board-level strategic decision-making. His interest in this topic had developed after a fortuitous conversation with a senior personnel policy manager who worked for a large organisation, who had explained how in some cases strategy formation was influenced by promoting incremental changes rather than trying to bring about a radical change in one movement. This idea interested Sab and he formulated a research project to explore it in a range of organisational contexts. However, the more he thought about it and discussed it with his project tutor the more he realised that he would have to research it using traditional methods.

After negotiating physical access to interview six senior managers who worked in different functional areas in different organisations, he conducted a face-to-face in-depth, exploratory interview with each one. While conducting these interviews he realised that the value and depth of the data he collected would have been much less if he had tried to conduct these online. His questioning was shaped by the data each participant shared with him during the interview. Because of the sensitive nature of the topic, most of the interviews took the form of discussions, allowing Sab to clarify points and ask for illustrative examples. As each interview progressed, he found that some of his participants were willing to show him quite sensitive documents in the privacy of the interview room (which was the manager's own office). He found that rapport and trust were vital to the conduct of each interview. He also found that conducting an interview at the organisation helped to focus his mind and enhance his understanding of the organisational context. This in turn helped him to make sense of the data his participants shared with him.

Sab concluded that first negotiating physical access and then developing cognitive access on a person-to-person basis at the start of each interview had been the most appropriate strategy to adopt and also the most effective. However, as he had met with each participant and established rapport and trust, he asked each one if he would be able to email any further questions for clarification. Some agreed but others said that they would prefer to undertake this either by telephone or another face-to-face discussion.

Where you decide to use Internet-mediated techniques, you are likely to need to negotiate virtual access and obtain permission from a broker or gatekeeper to gain access to a sample of organisational members (Box 6.6). Subsequently, you could advertise your research by a post or use an email list to invite potential respondents and including a hyperlink to your questionnaire (Section 11.5). Here you will need to ensure that your intended participants are aware of your research, its purpose, how it will be used, its nature and what will be required if they decide to participate in it. Their decision will be influenced by how well you explain the purpose, use and nature of your research and the requirements of taking part. This highlights how gaining access to an organisation and intended participants within it may involve a hybrid strategy. Such hybrid access strategies may be valuable where you wish to:

- achieve multi-organisation access and need to negotiate access to intended participants within several organisations;
- negotiate continuing access and meet with your organisational broker or gatekeeper and intended participants to develop rapport and demonstrate your competence and establish trust to achieve this.

Where you plan to conduct your research with individuals (individual person access or elite person access) online, you will need to identify an appropriate sample and then to negotiate virtual and cognitive access with these intended participants. The ability to



Box 6.6 Focus on student research

Where topic and strategy determined type of access

Elina's research focused on consumers' purchasing decisions. She was interested in assessing the relative importance of information obtained from online shopping sites and from high street shops in informing purchasing decisions for different product categories. These categories covered all of the products purchased by her age group, such as people on her marketing course.

Elina had formulated a mixed methods research design. She had designed a web questionnaire that asked respondents to identify actual recent purchasing decisions related to the categories in which she was interested. For each of these, where applicable, she asked questions about the product, the sources of information used to inform the purchase decision and the way in which these sources determined the purchasing decision. Following ethical approval from her university, she asked the course leader if they would send a message using the university's virtual learning environment to each person on her course asking for their help and containing a hyperlink to the questionnaire. The questionnaire included a question asking each respondent if they were willing to help further by completing an electronic diary. Those who answered yes were asked to provide their email address so Elina could send them the diary.

Elina emailed the template of the electronic diary to all those willing to help further. She had designed this to allow respondents to record purchasing decisions related to her list of product categories, the sources of information used to inform these purchases and the way in which these sources determined the decision. Respondents returned the diary as an email attachment.

Elina was aware that her request to maintain an electronic diary of influences on purchasing decisions would sensitise respondents to their use of different information sources, so had distributed the questionnaire first. This she felt would help her judge the extent the participant had been sensitised as well as about the relative impact of these different sources.

Her use of an Internet-mediated access strategy proved successful in gaining access to both questionnaire respondents and a group of people who would keep a diary.

identify your sample will be a key determinant of the feasibility of this approach. If you are unable to find an appropriate sample yourself (Section 6.5), websites such as 'Call for Participants' may be helpful. These allow researchers including students to advertise surveys, interviews and other research studies to potential participants worldwide free of charge (Call for Participants 2021). However, you will need to establish whether using this or a similar online platform can provide access to appropriate participants.

6.5 Strategies to gain access

We now consider strategies that can be used in combination to gain access. Invariably, their precise use will depend on will depend on the nature of your research design (Chapter 5), data-collection methods (Chapters 8–11) and the characteristics of the access you require (Figure 6.1). Their use will therefore need to take into account the type, nature and level of access required. Table 6.1 summarises a range of access strategies and their relative focus on these characteristics.

Ensuring familiarity before making contact

Before attempting to gain physical access, it is essential that you familiarise yourself fully with the characteristics of the organisation, group or, for elite interviews, the individual. The knowledge you gain will enable you to signal to the gatekeeper that you have thought

Table 6.1 Access strategies and their focus on different characteristics

Strategy	Access characteristic		
	Type	Nature	Level
Ensuring familiarity before making contact	✓	✓✓	✓
Allowing sufficient time	✓✓	✓✓	✓✓
Using existing contacts and developing new ones	✓	✓✓	✓
Providing a clear account of the purpose of the research and type and level of access required	✓	✓	✓✓
Overcoming concerns	✓	✓	✓✓
Identifying possible benefits of participating	✓	✓✓	✓
Using suitable language	✓✓	✓✓	✓✓
Facilitating replies	✓✓	✓✓	✓✓
Developing access incrementally	✓	✓	✓✓
Establishing researcher credibility	✓	✓	✓✓

✓✓ = more focussed, ✓✓ = less focussed

carefully about your research, as you will be able to provide a credible case to justify your request to grant access.

Allowing sufficient time

Physical access may take weeks or even months to arrange, and often the time invested will not result in access being granted (Buchanan et al. 2013). An approach to an organisation or group will result in either a reply or no response at all. If you do not receive a reply and still wish to gain access, you will need to allow sufficient time before making a follow-up request. Seeking access to a large organisation as an external researcher, where you have no contacts, will necessitate considerable detective work to establish the most appropriate person to email or telephone. When making contact, care needs to be taken in composing the email or planning the phone call.

Gaining physical access to people from a large number of organisations offers additional challenges. Where data will be collected using questionnaires, researchers usually either purchase a list of potential respondents or, alternatively, select them from a volunteer panel (Saunders et al. 2017). Access in such cases is dependent upon the willingness of potential respondents to take part, the accuracy of the third-party list and careful planning and monitoring (Box 6.7).

If you can contact a participant directly, such as a manager, an exchange of emails or a telephone call or online chat may be sufficient to gain access. Here you should be clear regarding what you require and the value of your work and your credibility. Even so, you will still need to allow time for your request to be received and considered and an interview meeting to be arranged at a convenient time for your research participant. This may take a number of weeks, and you may have to wait even longer to schedule an interview.

An access request may be passed 'up' the organisation or group for approval. Where you are able to use a known contact in the organisation or group this may help, especially where a senior person is willing to act as a sponsor for your research. Even so, you will still need to allow for this process to take weeks rather than days. It is likely that you will be asked to attend a meeting to discuss your research during which your case for access will be evaluated. This all takes time!

Where your intended participants or respondents are not the same people who grant you physical access, you will need to allow further time to gain their acceptance. This



Box 6.7 Checklist

To maximise physical access using third-party lists

- ✔ Have you checked third-party compiled list or volunteer panel for accuracy, even if purchased from a reputable source?
- ✔ Have you used pilot testing to establish the likely response rate and likely representativeness?
- ✔ Have you logged actual and complete returns regularly against sample requirements so that it becomes clear at an early stage if response targets or representativeness are unlikely to be met?
- ✔ Have you followed up non-respondents and organisations that helped in distributing the questionnaire with polite but regular reminders to maximise returns?
- ✔ Do you have a contingency plan to activate if response rates are lower than expected?

Source: Developed from Saunders et al. (2017).

may involve you making **pre-survey contact** by telephoning these people (Section 11.8), engaging in correspondence or holding an explanatory meeting with them. We have found establishing contact and securing cooperation can take weeks rather than days, especially individuals' availability is restricted.

Once you have gained physical access to the organisation or group you will need to gain cognitive access. Whichever data collection procedures you use, time needs to be allowed for maximising cognitive access. For some forms of observation and interviews (Chapters 9 and 10), access will be developed while collecting the data. Where continuing access is required, time will be needed to negotiate, or renegotiate, access at each stage.

Using existing contacts and developing new ones

Most management and organisational researchers suggest that you are more likely to gain access where you are able to use **existing contacts** such as colleagues, friends or others already known to you. Buchanan et al. (2013: 56) note they 'have been most successful where we have a friend, relative or student working in the organisation'. We have also found this to be the case. In order to request access we have approached colleagues, present or past students, course advisors, LinkedIn connections or those who are otherwise known to us through our networks. Their knowledge of us means they can trust our stated intentions and assurances we give about the use of any data provided. Using such existing contacts means we can establish a track record of our credibility that we refer to when approaching other organisations or groups where we do not have contacts.

Use of contacts will depend largely on the strategy (Section 5.5), sample selection (Sections 7.2 and 7.3), research question and objectives. It is likely to be easier to use known contacts in an in-depth study that focuses on a small, purposively selected sample, such as a case study strategy; or for a survey strategy in one organisation. However, use of known contacts may also be possible where you have a large number of appropriate connections through your professional and online networks. There will clearly be some convenience in terms of gaining access through contacts that are familiar; however, these contacts may also be cases in other forms of non-probability samples (Section 7.3).

It may be possible for you to use a previous employer or your work placement organisation for your research project. You will undoubtedly have made a number of contacts who may be able to help negotiate or even grant access. You may have become interested in a particular topic because of the time that you spent in the organisation. Prior to asking for access you need to identify a research question and objectives, and plan your research project. The combination of genuine interest in the topic and relatively easy access to organisational participants should help you undertake a good-quality and useful project.

Where you need to develop **new contacts**, you will need to approach people previously unknown to you. You may consider asking the local branch of an appropriate professional association for the names and contact details of key employees to contact in organisations where it would be suitable for you to conduct research. You could also contact this professional association at national level, or an employers' association for a particular industry, or a trade union, at local or national level. Alternatively, you might contact one or more chambers of commerce, skills training organisation or other business networks. Note, however, such associations and organisations receive hundreds of requests from students each year and so may have insufficient time or resources to respond.

You may also consider making a direct approach to an organisation or group in an attempt to identify the appropriate person to contact in relation to a particular research project. This has the advantage of potentially providing access to organisations or groups that you would like to include in your research project; however, great care needs to

be exercised at each stage of the process (Box 6.8). Once you have obtained the email addresses of possible contacts you will need to send a request to each of them (Box 6.9), following the standards of care used for a formal letter. Use of email may result in some recipients simply deleting the message! Sending a letter to a potential gatekeeper can result in your request for access being considered more carefully.

Providing a clear account of the purpose and type of access required

Asking for access and cooperation without specifying your requirements clearly is likely to lead to either no response or refusal. It is also likely to be considered unethical (Section 6.6). A potential organisation, group or participant needs to know enough about your research to make an informed decision about whether to take part.

Establishing your credibility is vital to gaining access. Using existing contacts means you can trade on your existing level of credibility. However, when you are making contact for the first time, your approach will be highly influential. Your request will need to be well presented and demonstrate your clarity of thought and purpose. Poor preparation will be immediately apparent and is likely to result in access being refused (Section 10.4).



Box 6.8 Focus on student research

Identifying possible contacts and requesting access

Andrew identified a number of organisations that matched the criteria established for businesses he wished to include in his research project.

Organisations' websites were used to identify the corporate headquarters, which he then contacted by telephone. When talking to each organisation, Andrew explained he was a student and gave the title of his course and the name of his university. He also gave a very brief explanation of his research to the person who answered the telephone. This resulted in him being provided with a telephone number or email address or being connected directly to the part of the organisation thought appropriate by the person answering the telephone. Andrew always ended this initial telephone conversation by thanking the person for their help.

At the next stage, Andrew again revealed he was a student and gave the title of his course and the name of his university. The purpose of the research was explained briefly to the personal assistant who inevitably answered the telephone. Andrew asked for the name and email address of the person whom the personal assistant thought would be the most appropriate person to contact. In most cases the people to whom he spoke at this stage were helpful and provided some excellent leads.

Sometimes, particularly in large organisations, Andrew found that he was not talking to someone in the appropriate part of the organisation. He therefore asked the person to help by transferring the telephone call. Sometimes this led to a series of calls to identify the right person. Andrew always remained polite, thanking the person to whom he spoke. He always gave his name and that of his university and tried to create a positive for what could be perceived as a tiresome enquiry.

Andrew chose to ask for the name and email address of a hoped-for organisation 'lead'. He would send a written request, which could be considered when it was convenient, rather than attempting to talk to them, when they might have been busy. This resulted in many successes, and Andrew added a number of good contacts to his previous list.

Box 6.9
Focus on student research

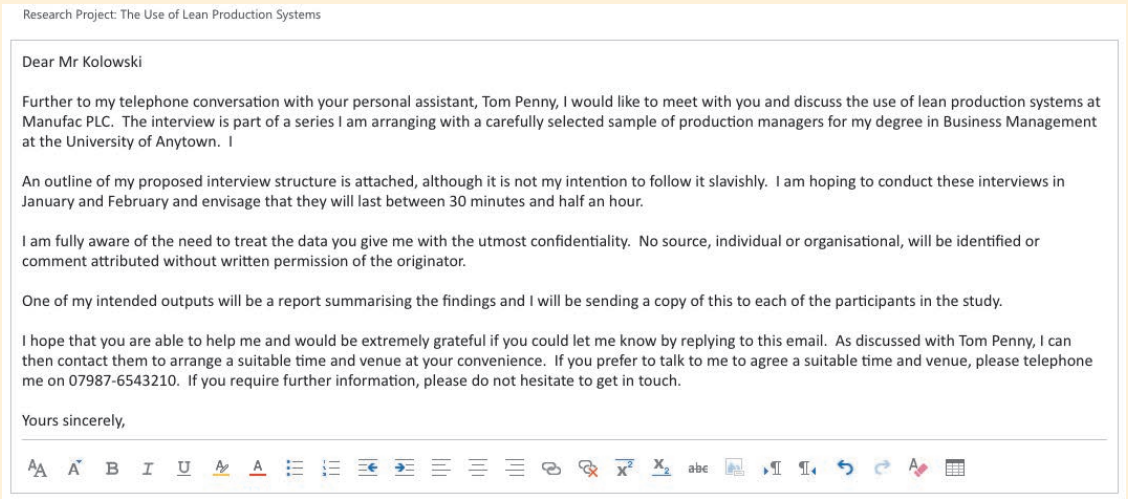
Email requesting access

Annette was undertaking her research project on the use of lean production systems. Having made telephone contact with the production controller's personal assistant, she was asked to send an email requesting access.

Unfortunately, Annette relied on her email software's spellcheck to proofread her email. This resulted in the production controller receiving an email containing four mistakes:

- the addition of the word 'I' at the end of the first paragraph;
- the phrase 'between 30 minutes and half an hour' instead of 'between 30 minutes and an hour' at the end of the second paragraph;
- two digits being transposed in the mobile telephone number at the end of the last paragraph, resulting in it being incorrect;
- the second sentence of the final paragraph being poorly worded.

Not surprisingly, Annette was denied access.



Research Project: The Use of Lean Production Systems

Dear Mr Kolowski

Further to my telephone conversation with your personal assistant, Tom Penny, I would like to meet with you and discuss the use of lean production systems at Manufac PLC. The interview is part of a series I am arranging with a carefully selected sample of production managers for my degree in Business Management at the University of Anytown. I

An outline of my proposed interview structure is attached, although it is not my intention to follow it slavishly. I am hoping to conduct these interviews in January and February and envisage that they will last between 30 minutes and half an hour.

I am fully aware of the need to treat the data you give me with the utmost confidentiality. No source, individual or organisational, will be identified or comment attributed without written permission of the originator.

One of my intended outputs will be a report summarising the findings and I will be sending a copy of this to each of the participants in the study.

I hope that you are able to help me and would be extremely grateful if you could let me know by replying to this email. As discussed with Tom Penny, I can then contact them to arrange a suitable time and venue at your convenience. If you prefer to talk to me to agree a suitable time and venue, please telephone me on 07987-6543210. If you require further information, please do not hesitate to get in touch.

Yours sincerely,

Your initial request for access should outline the purpose of your research, how the person contacted could help and what is involved in participating. The success of the request will be helped by being clear, concise and, if writing, the use of short and clear sentences. You should be polite and formal, and try to stimulate interest in your research. You will need to think carefully about whether to start with a telephone request, use email or send a letter by post. Even where your initial contact is by telephone, it is still advisable to confirm the details of your proposed research and requirements in writing (Box 6.9).

Overcoming concerns

Concerns about granting access relate principally to the time and resources that will be needed, the sensitivity of the research and issues of confidentiality and anonymity. Your request for access is more likely to be accepted if the amount of time and

resources you ask for are kept to a minimum. However, you need to be realistic about what is required. Stating a questionnaire will only take 5 minutes to complete, when it actually takes 15 minutes is very likely to annoy your respondents and result in only a few being returned.

Organisations, groups and individuals are less likely to cooperate where the research topic is sensitive or has negative implications. Organisations do not normally wish to present themselves as performing poorly. However, you may be able to highlight a positive approach by, for example, emphasising that your work will be designed to identify individual and organisational learning in relation to the topic (a positive inference). You should avoid sending any request that appears to concentrate on aspects associated with poor performance, failure or are likely to be a sensitive topic for your intended participants.

Where you have promised **confidentiality**, you must not reveal the identity of participants or participating organisations, groups or present your findings in a way that allows them to be identified. This means you should not share your raw data with anyone, not even your project tutor. **Anonymity** means your data is in a form that does not identify individuals and it will not be possible for identification to occur, even by the researcher. This allows for much wider use of the data as data protection legislation often does not apply to such data. An alternative to anonymising data is **pseudonymisation** where individuals are identified only by pseudonym such as a unique code or reference number. This is useful, particularly in cohort studies, as it allows data collected at different times about the same organisation, group or person to be linked by the pseudonym.

Although guarantees are usually given in writing at the time of making the initial request for access, you will need to repeat these assurances to individual participants as you seek their consent (Section 6.7). These will have to be acted upon, and confidentiality and anonymity maintained, when you write your project report (Box 6.18).

Identifying possible benefits

Decisions to participate can be looked at using the lens of **social exchange theory**, the potential participant evaluating the benefits and costs of taking part. Where potential benefits are judged to outweigh costs, a potential participant is more likely to take part. This notion of exchange does, however, have consequences. You therefore need to be clear about the potential benefits (and costs) of taking part.

Practitioners often wrestle with the same subjects as researchers and welcome the opportunity to discuss an issue, in a non-threatening, non-judgemental environment. A discussion may allow them to think through an issue and to reflect on their actions. For those who work in organisations, this may be the first time they have had this opportunity. Your research may offer some useful insights, although this does not mean that you should attempt to 'buy' your way in based on some promise about the potential value of your work.

It may help to offer a summary of your findings to those who grant access. The intention here would be to provide something of value and to fulfil any expectations about the (social) exchange. We believe it is essential that this summary is designed specifically for those who granted access rather than a copy of the research project you submit to your university. It is also possible that feedback from the organisation about your summary may help you further with your research.

Where access is granted in return for supplying a summary of your findings, it is important to be clear about what you will be providing. You therefore need to agree the format,

length, overall content and how you will ensure confidentiality and anonymity. This can vary from a one or two-page summary of key findings to a much more in-depth report.

Using suitable language

Some researchers advise against using certain research terms when requestion access because these may be perceived as threatening or not interesting to the potential participant. Buchanan et al. (2013: 57) suggest using the phrase 'learn from your experience' in place of research, 'conversation' instead of interview and 'write an account' rather than publish.

Your language will depend largely on the nature of the people you are contacting. It should be appropriate to the person being contacted, without any hint of being patronising, threatening or just boring. Given the vital role of initial telephone conversations, introductory emails or letters, we would suggest allowing adequate time to consider and draft these and using someone to check through your message (Section 11.7, Box 11.15). Do not forget that you need to leverage salient aspects to engender interest in your research project.

Facilitating replies

We have found that the inclusion of a number of different contact methods (telephone, mobile phone, email) in our written requests for access helps to ensure a reply. These may not be suitable in all cases depending on the characteristics of the access required. Inclusion of a stamped or postage pre-paid (freepost) addressed envelope may also facilitate a reply.

Developing access incrementally

There are potentially a number of advantages related to developing access incrementally. A request to an organisation for wide-ranging access may be sufficient to cause them to decline entry. Using an incremental strategy gains you initial access to a certain level of data such as to deliver and collect a questionnaire. It also allows you the opportunity to develop a positive relationship with those who are prepared to grant initial access of a restricted nature. As you establish your credibility, you can develop the possibility of achieving a fuller level of access, such as being allowed to facilitate a series of focus groups. A further advantage may follow from the opportunity that you have to tailor your request for further access in relation to your initial research findings. However, an incremental process is time-consuming and can be argued to be unethical as you do not to explain your access requirements fully.

Establishing researcher credibility

In Section 6.2 we differentiated between physical and cognitive access. Even if you have been granted physical access to an organisation, group or individuals you cannot assume that those from whom you wish to collect data will cooperate. Gaining their cooperation will mean repeating much of the process that you will have used to gain entry into the organisation. You will need to explain the purpose of your research project, state how you believe that they will be able to help your study and provide assurances about

confidentiality and/or anonymity. This may involve emailing or writing to your intended participants or talking to them individually or in a group. How you do this depends on whether you are conducting the research face-to-face , the number of potential participants and your intended data collection techniques. However, your credibility and the probability of individuals' participation are likely to be enhanced if the request for participation is made jointly with a senior person from the organisation (Box 6.10). If your data-collection technique is likely to be considered intrusive, for example overtly observing people undertaking work tasks, you may need to exercise even greater care and take longer to gain acceptance. The extent to which you succeed in gaining cognitive access will invariably depend on your efforts.

The strategies that we have outlined to help you to gain access to organisations and to those whom you wish to participate in your research project are summarised as a checklist in Box 6.10.

Box 6.10 Checklist

To help to gain access

- ✔ Have you allowed yourself plenty of time for the entire process?
- ✔ Are you clear about the purpose of your research project?
- ✔ Are you clear about your requirements when requesting access (at least your initial requirements)?
- ✔ Can you use existing contacts, at least at the start of your research project, in order to gain access?
- ✔ (If you have been employed or on a work placement) Is the organisation or group an appropriate setting for your research project?
- ✔ Have you approached appropriate local and/or national employers, or employees, professional or trade bodies to see if they can suggest contacts through whom you might gain access?
- ✔ Have you considered making a direct approach to an organisation to identify the most appropriate person to contact for access?
- ✔ Have you identified the most appropriate person and been willing to keep on trying to make contact?
- ✔ Have you drafted a list of the points you wish to make, including your thanks to those to whom you speak?
- ✔ Have you considered how you will address likely organisational concerns such as:
  - the amount of time or resources that would be involved on the part of the organisation;
  - the sensitivity of your research topic;
  - the need for confidentiality and anonymity?
- ✔ Have you considered the possible benefits for the organisation, group or individual should access be granted to you?
- ✔ Have you offered a summary of your findings to enhance your chance of achieving access?
- ✔ Are you willing to attend a meeting to present and discuss your request for access?
- ✔ Where your initial request for access involves a telephone conversation, have you followed this with an introductory email or letter to confirm your requirements?
- ✔ Is the construction, tone and presentation of your introductory email or letter appropriate to support your request to gain access?
- ✔ Have you ensured that your use of language is appropriate to the person who receives it without any hint of being patronising, threatening or boring?
- ✔ Have you considered including a range of contact methods for recipients to use to reply?
- ✔ Are you prepared to work through organisational gatekeepers in order to gain access to intended participants?
- ✔ Have you allowed sufficient time to contact intended participants and gain cognitive access, once physical access has been granted?
- ✔ Have you allowed sufficient time within your data collection to gain access?

6.6 Research ethics and acting ethically

Defining research ethics

Acting ethically throughout the research process is essential. **Research ethics** are the standards of researcher behaviour that guide your conduct in relation to the rights of the subjects of your research and those who are affected by it. The appropriateness or acceptability of your research conduct will be influenced by broader social norms of behaviour. **Social norms** indicate the type of behaviour you should adopt in a particular situation; however, in reality, these allow for a range of behaviours leading to competing and, sometimes, conflicting positions.

Two dominant and conflicting philosophical ethical positions have been identified: deontological and teleological. The **deontological view** is based on the researcher following rules to guide their conduct. According to this view, acting outside the rules can never be justified. Where the rules are inadequate or contested, it is necessary to reappraise and, if required, amend them. In contrast, the **teleological view** is based on conduct being determined by its consequences, not a set of predetermined rules. This means deciding whether the benefits of undertaking an act outweigh its negative consequences. However, it is unlikely that just comparing the benefits to one group with the costs to another will provide you with a clear answer to such an ethical dilemma.

Attempts to overcome ethical dilemmas arising from different social norms and conflicting philosophical approaches have led to the widespread development of **codes of ethics**. These generally contain a list of principles outlining the nature of ethical research and an accompanying statement of ethical standards to guide your research conduct. As a member of a university (and where appropriate a professional association), you will be required to abide by such an ethical code or adhere to its ethical guidelines for research. Codes of ethics (Table 6.2) explicitly or implicitly recognise that ethical dilemmas exist, and it will often be necessary to exercise some choice about conduct. For example, the Statement of Ethical Practice produced by British Sociological Association (2017: 2) recognises expressly it is not possible to produce 'a set of recipes' to deal with all ethical dilemmas and that researchers need to exercise choice based on ethical principles and standards. Fortunately, such ethical principles and standards, mean researchers and ethical reviewers have an ethical basis against which to anticipate issues and risk, and exercise choice to avoid conflict and harm.

Ethical review

The conduct of your research will be guided by your university's or professional association's code of ethics or ethical guidelines, highlighting what is and what is not considered ethical. This must be followed to ensure that you do not transgress the behavioural norms and ensure your research is acceptable. However, as Bell and Bryman (2007) point out, such codes tend to be written in abstract terms and are designed to prevent misconduct. Table 6.2 provides Internet addresses for a selection of codes of ethics and ethical guidelines.

You should expect to submit your research proposal for ethical review. Like all students, your research will need to comply with your university's code of ethics or ethical guidelines and the principles and standards that it contains. Ethical review may be conducted by your project tutor or other academic staff. Alternatively, you may be asked to complete and sign an ethical review form. Such 'light touch' or 'fast track' review, overseen by your school or faculty ethics committee, allows non-controversial research

Table 6.2 Ethical codes, guidelines and statements of research practice

Name	Internet address
Academy of Management's Code of Ethics	http://aom.org
Academy of Social Sciences' Five Ethical Principles for Social Science Research	https://www.acss.org.uk
All European Academies (ALLEA) The European Code of Conduct for Research Integrity	https://www.allea.org
American Psychological Association's Ethical Principles of Psychologists and Code of Conduct	http://www.apa.org
British Academy of Management's Code of Ethics and Best Practice	https://silo.tips
British Psychological Society's Code of Ethics and Conduct	https://www.bps.org.uk
British Psychological Society's Code of Human Research Ethics	https://www.bps.org.uk
British Sociological Association's Statement of Ethical Practice	https://www.britsoc.co.uk
Chartered Association of Business Schools' Ethics Guide Advice and Guidance	https://charteredabs.org
Economic and Social Research Council's (ESRC) Framework for Research Ethics (FRE)	https://esrc.ukri.org
European Union's Respect Code of Practice for Socio-Economic Research (The Respect Project)	http://www.respectproject.org
Market Research Society's Code of Conduct	https://www.mrs.org.uk
Researcher Development Initiative's Research Ethics Guidebook	www.ethicsguidebook.ac.uk
Social Research Association's Research Ethics Guidelines	https://the-sra.org.uk
UK Data Archive Managing and Sharing Data	http://www.data-archive.ac.uk
UK Department for Innovation, Universities and Skills' Universal Ethical Code for Scientists	https://www.gov.uk
UK Research and Innovation (UKRI) Policy and Guidelines on Preventing harm in research	https://www.ukri.org
UK Research Integrity Office's Code of Practice for Research	http://ukrio.org
Universities UK's The Concordat to Support Research Integrity	https://www.universitiesuk.ac.uk

Please note these links are to the homepages of these organisations, you will need to search the website to find the appropriate document.

proposals posing minimal risk to participants and others to be considered without too much delay. A full ethical review conducted by your school or faculty ethics committee will be required where proposals raise ethical concerns or are considered to have higher levels of risk. You will need to be aware of potential ethical concerns and risks to those involved as you design your research and seek to avoid them. You should not assume using particular procedures will, on their own, reduce the possibility of ethical concerns or risk. While observation or interviews may appear to be more intrusive than a questionnaire all methods can raise ethical concerns. The questions you wish to ask and your intended participants (for example children) may also raise ethical concerns rather than the research method that you intend to use.

Research ethics committees are responsible for all aspects of ethical review and approval. They may have a proactive role in developing an ethical code, alongside disseminating advice about conducting research ethically. However, their primary role will be to review all research conducted by those in the institution, in particular that involving human participants and the collection and storing of personal data. They will examine aspects of research quality that relate to ethics; protecting the rights, dignity and welfare of those who participate as well as others who may be affected by it; and consider the safety of researchers. It is likely to be composed of experienced researchers from a variety of backgrounds, who will draw on their range of experience and knowledge of different ethical perspectives to provide advice. It will be expected to act in an impartial and independent way and its independence is likely to be supported by the inclusion of at least one external member, who otherwise has no connection to the institution.

For some research projects you will also need to satisfy the requirements of a host organisation's ethics committee established as well as your university. This may apply where your research is based in the health service. Many of our students undertaking research within the UK's National Health Service (NHS) have had to meet the requirements of their local NHS Trust's ethics committee (Box 6.11). Such requirements are often very time-consuming to meet.

Consideration of ethical issues is crucial throughout your research project and even beyond it. In Section 6.7 we explore ethical issues that arise at specific stages in the research process. Next consider general ethical principles that form the focus of codes of ethical conduct, followed by general issues are associated with Internet-mediated research.

Ethical principles

Codes of ethics are intended to avoid poor practice, malpractice and harm (**non-maleficence**) and promote ethical practice, integrity, respect and fairness, and private or public good (**beneficence**). Rather than write highly detailed and prescriptive regulations to anticipate and deal with ethical issues for each research approach, codes of ethics instead contain a set of principles for researchers to apply to their own research and to that of others (Table 6.2).

To avoid harm, or at the very least to minimise it, it is necessary to evaluate risk in terms of the likelihood of harm occurring and the extent or severity of the harm. Harm may take a number of forms and lead to a range of consequences (Table 6.3). Estimating risk is not straightforward and it may be affected by a number of contextual or cultural factors. However, it is important to anticipate risk to minimise the likelihood of causing harm. Box 6.12 provides a checklist for assessing risk in research.

Box 6.11 Focus on student research

Establishing whether research warrants ethical review

Rachel worked for a local hospital. At her first meeting with her project tutor, he had reminded her to check whether she would need to submit her research project to the hospital's research ethics committee (REC) for review. Subsequently, she discussed this with her line manager who suggested she use the UK NHS Health Research Authority's Decision Tool, available online to address this question (Health Research Authority 2020).

The initial web page of this tool told her that its aim is to help users decide whether their 'study is research as defined by the UK Policy Framework for Health and Social Care Research' (Health Research Authority 2020: 1). This tool also allowed Rachel to click through to a web page that provides clear definitions of what is meant by the terms 'research', 'service evaluation', 'clinical audit' and 'usual practice' in the context of the NHS.

> Research is 'the attempt to derive generalisable or transferable new knowledge to answer questions with scientifically sound methods including studies that aim to generate hypotheses as well as studies that aim to test them, in addition to simply descriptive studies'.
>
> Service evaluation is 'designed and conducted solely to define or judge current care'.
>
> Clinical audit is 'designed and conducted to produce information to inform delivery of best care'.
>
> Usual practice is 'designed to investigate the health issues in a population in order to improve population health'
>
> (Health Research Authority 2020)

Rachel used the decision-making tool by answering the questions on consecutive web pages. After clicking through these it became evident that her proposed project would be defined as a 'service evaluation'. The policy framework stated that service evaluation 'does not require REC review' (Health Research Authority 2020). After using the online tool she returned to discuss this decision with her line manager and later with her project tutor.

Table 6.3 Ethical principles and their rationale

Ethical principle(s)	Rationale
Integrity, fairness and open-mindedness of the researcher	Research quality depends in part on the integrity, fairness and open-mindedness of the researcher. This means acting openly, being truthful and promoting accuracy. Conversely, it also means avoiding deception, dishonesty, misrepresentation (of data and findings, etc.), partiality, reckless commitments or disingenuous promises. Where appropriate, any conflict of interest or commercial association should be declared.
Respect for others	A researcher's position is based on trust and respect. The conduct of research entails social responsibility and obligations to those who participate in or are affected by it. Rights of all persons should be recognised and their dignity respected.

Ethical principle(s)	Rationale
Avoidance of harm (non-maleficence)	Any harm to participants must be avoided. This may occur to emotional well-being, mental or physical health, or social or group cohesion. It can include embarrassment, stress, discomfort, pain or conflict. Harm may be caused by being intrusive or zealous involving mental or social pressure causing anxiety or stress. It may also be caused by violating assurances of confidentiality and anonymity, or through harassment or discrimination.
Privacy of those taking part	Ensuring privacy underpins respect for others, avoidance of harm, voluntary nature of participation, informed consent, ensuring confidentiality and maintaining anonymity, responsibility in the analysis of data and reporting of findings, and compliance in the management and storage of data.
Voluntary nature of participation and right to withdraw	The right to not participate in a research project is unchallengeable and is accompanied by the right not to be harassed to participate. It is also unacceptable to attempt to extend the scope of participation beyond that freely given. Participants continue to exercise the right to determine how they will participate throughout the research including modifying the nature of their consent; withdrawing from participation and withdrawing any data they have provided.
Informed consent of those taking part	Informed consent necessitates researchers providing sufficient information and assurances about taking part to allow individuals to understand the implications of participation and to reach a fully informed, considered and freely given decision about participating, without pressure or coercion. Participants have the right to expect the researcher to abide by the consent given and prolong the duration of an interview or observation; or widen the scope of the research without first seeking and obtaining permission.
Ensuring confidentiality of data and maintenance of anonymity of those taking part	Individuals, organisations and groups have the right to remain anonymous and assurances about anonymity and confidentiality should be maintained. Data provided should be made non-attributable, unless there is an explicit agreement to attribute comments. Harm can result from unauthorised attribution or identification.
Responsibility in analysis of data and reporting of findings	Assurances of privacy, anonymity and confidentiality must be upheld when analysing data and reporting findings. Data must not be made up or altered and results should not be falsified. Analysis and findings should be reported fully and accurately, irrespective of whether they contradict expected outcomes. Sources of secondary data should be made clear.
Compliance in management of data	Research is likely to involve collection of personal data. Many governments have passed legislation to regulate processing, secure storage and possible sharing of personal data and there is likely to be a statutory requirement to comply in both the country in which you are studying and in which you are collecting data.
Ensuring safety of researchers	Researchers' safety is crucial when planning and conducting research. The Social Research Association's Code of Practice for the Safety of Social Researchers identifies possible risks from social interactions including 'risk of physical threat or abuse; risk of psychological trauma . . . ; risk of being in a compromising situation . . . ; increased exposure to risks of everyday life' (Social Research Association 2001: 1).

Notes and sources: This table synthesises key points from many different approaches to writing ethical principles including those in Table 6.2. It does not provide comprehensive guidance. You will need to consult your university's code of ethics, alongside others appropriate to your research.

Box 6.12 Checklist

Assessing risk in research

- ✔ Is your proposed research likely to harm the well-being of those participating?
- ✔ Will others be harmed by the process or outcomes of your proposed research?
- ✔ How may this harm occur and what characteristics may make this more likely?
- ✔ How likely it is that harm might result?
- ✔ How severe would be any resulting harm?
- ✔ Which features or what aspects of your research may cause harm?
- ✔ How intrusive is your proposed research method or methods?
- ✔ How sensitive are your proposed questions, observations, searches or requests for data?
- ✔ Can you justify your choice of research method or methods and tactics; in particular, can you explain why alternatives that involve fewer potential risks cannot be used?
- ✔ Where anticipated risk cannot be reduced any further during the design of the research and ethical review is favourable, how will the implementation of your research seek to avoid the occurrence of risk in practice, or at the very least seek to minimise it?
- ✔ Does the information you provide to intended participants to facilitate informed consent also allow them to contact you to discuss potential concerns? How have you facilitated this while maintaining your own privacy (e.g. using a university email address, not your personal email or home address)?
- ✔ How will you commence a data collection activity to allow potential concerns to be raised first? How will you make yourself aware of themes that may be sensitive for particular participants?
- ✔ How will you reinforce the voluntary nature of participation to allow participants not to answer a particular question, set of questions or to decline any request for data?
- ✔ Other potential risks are likely to be evident within the context of your particular research project. What might these be and how will you manage them?

Research can benefit the researcher, participants, the group or organisation being researched and the community or society within which it occurs. It is important and ethical to be realistic about the benefits you claim for your research project and to honour any promises made about sharing findings, such as promising to send a summary to an organisation that provides access. Acting ethically is far more than just completing an ethical review form to get your research proposal approved! It means thinking about each aspect and each stage of your research from an ethical perspective and, on the basis of this, acting ethically throughout your research.

Ethical issues associated with Internet-mediated research

While the Internet helps facilitate access to some categories of participants and certain types of data, its use raises a number of issues and even dilemmas about the applicability of the ethical principles. Internet technologies change rapidly, and new ethical issues may well arise (British Psychological Society 2021). Not surprisingly, ethical guidance for Internet-mediated research therefore focuses upon general principles summarised in Table 6.3. In addition, guidance for ethical Internet-mediated research (Table 6.4) highlights specific issues and dilemmas raised by the use of online communications, special interest discussion forums and chat rooms, social networking sites, personal spaces and blogs, virtual worlds and online gaming spaces, commercial websites and databases and repositories. These include deception, lacking respect and causing harm, respecting privacy, nature of

Table 6.4 Internet addresses for ethical guidelines for the conduct of online research

Name	Internet address
Association of Internet Researchers' (AOIR) Internet Research: Ethical Guidelines	https://aoir.org
Association of Internet Researchers Ess, C. and AoIR ethics working committee (2002)	http://aoir.org
Markham. A., Buchanan, E. and AoIR Ethics Working Committee (2012) Ethical Decision-Making and Internet Research	http://aoir.org
British Psychological Society Ethics Guidelines for Internet-mediated Research (2021)	https://www.bps.org.uk

Please note these links are to the homepages of these organisations, you will need to search the website to find the appropriate document.

participation and scope to withdraw, informed consent, confidentiality and anonymity, analysis and reporting, data management, researcher safety and netiquette.

Deception

Researchers who join online communities with the intention of collecting data rather than participating or seeking consent (known as 'passive analysis' or 'lurking') are committing a form of deception. Declaring your real intention after a period of 'lurking' is seen by many online groups as unethical and will increase the chance of you being asked to leave.

Lacking respect and causing harm

Joining online communities and 'harvesting' data from them without their knowledge and permission is considered disrespectful and opposed to the principle of gaining trust. Such deception can cause distrust of you and other researchers and may cause damage to online communities and to their members.

Respecting privacy

Increasingly people have few, if any, expectations of privacy regarding materials they post to online forums that are accessible publicly without barriers. Yet, while it is possible to access online communities operating publicly accessible virtual space, content on these websites should be treated as private conversations, albeit 'publicly private' ones.

Nature of participation and scope to withdraw

Mass surveillance and potential (mis)use of personal data scandals have highlighted how potential misuse of personal data, including 'harvesting', can be perceived as violating the principles of voluntary participation. They have also drawn to potential participants attention difficulties associated with controlling how their personal data can be used or withdrawn (Box 6.13).

Informed consent

While most people know that their online posts and information can be read by members of the public, this does not mean that they are automatically granting their permission for these to be used as data by researchers (Kozinets 2020). Informed consent in a virtual setting can usually be obtained by contacting the online community's moderator or

Box 6.13 Focus on research in the news

Online privacy: a fraught philosophical debate

Problems over the societal impact of Big Tech and social media, and their effect on values such as privacy, have long been a source of public concern.

But companies and campaigners find that resolving them involves navigating the ethics of privacy – a concept that countries, nationalities and traditions approach in very different ways.

'Privacy is a nebulous concept generally and, over the years, we have seen misplaced narratives being framed around it,' says Vidushi Marda, digital programme officer at Article 19, an international freedom of expression campaign group.

One example is the claim often made by defenders of mass surveillance that it is no threat to privacy if people have 'nothing to hide'. 'We see some of that changing,' explains Marda, as policymakers develop a greater understanding of the importance of privacy. This was especially the case, she says, after whistleblower Edward Snowden revealed the scale of mass surveillance by US and other Western powers in 2013. Other developments that have shifted attitudes include the scandal over personal data and election influencing involving marketing group Cambridge Analytica; and an investigation by the UK's information regulator into Clearview AI, the controversial facial-recognition system.

At the Big Tech companies, the dominant ideas about what online privacy means tend to be Western-centric – perhaps unsurprisingly, given so many are American.

FT *Source:* Extracts from 'Online privacy a fraught philosophical debate', Siddharth Venkataramakrishnan (2021) *Financial Times,* 17 May. Copyright © 2021 The Financial Times Limited.

administrator or, in the case of a web questionnaire or online interview, asking participants explicitly. It may include agreed limits about the scope of participation and procedures to allow concerns to be raised or for withdrawal to take place. Such procedures are important as lack of face-to-face contact makes it difficult to anticipate participants' concerns and attitudes. Signed consent may be facilitated by emailing a consent form or series of questions in an online questionnaire (Box 11.16).

Confidentiality of data and anonymity of participants

Online community members discussions offer a permanent record. Even where this is a public forum and posts may have been made with the belief that no one will be 'harvesting' or analysing these materials. Crucially, online community members increasingly expect to be asked for consent before participating, including using their archived discussions. Doing so enables members to control data that is available to researchers (Franzke et al. 2020).

Analysis of data and reporting of findings

Issues of confidentiality, anonymity, privacy and copyright can occur when online data are collected, analysed and reported. Where data are 'harvested', the researcher is confronted with the dilemma of whether to use these data openly or anonymously. Although

obtaining ethical approval to harvest data without consent is increasingly unlikely, where this occurs, we recommend using pseudonyms and other changes to disguise the identities of those who created the material. Where you wish to quote from this material, there is the possibility that others could use Internet search engines to identify the author of a quotation. You therefore need to avoid using quotations that would be traceable without first obtaining consent (British Psychological Society 2021). In addition, blogs are protected by copyright laws and those who create them have exclusive rights in relation to their reproduction (Hookway 2008). Web pages and content on social network sites are also protected by copyright laws (British Psychological Society 2021) and, although often considered secondary data, it is important to be careful in using quotations and reference correctly (Appendix 1). Seeking informed consent should help to overcome the dilemmas associated with using materials from the Internet as both primary and secondary data (Section 8.1).

Data management

Data protection legislation has (or is likely to have, depending on country) implications for Internet-mediated research, including in the UK the need for notification and consent if personal data are to be processed and stored. Like all researchers, those using the Internet need to comply with current data protection legislation, as well as with any other legal requirements (Section 6.8). A further set of issues concerns the potential insecurity of data transmission and storage. This may be because of errors. For example, emails containing personal data may be sent to the wrong address. Questionnaire software may contain errors. Insecurity may also occur because others have access to a website and are able to alter data or to copy and direct it elsewhere. As researchers do not control websites or networks, risks associated with data transmission and storage need to be recognised and participants told about these in relation to confidentiality, anonymity and possible 'data hacking' or misuse as part of seeking informed consent.

Researcher safety

As a researcher you can help ensure your safety when conducting Internet-mediated research by using your university email address rather than your personal email. Similarly, you should not provide details of your home address. You also need to protect your own privacy when setting access rights to their own personal information on social media sites.

Netiquette

Netiquette refers to user standards to encourage courtesy, focussing principally on the use of email and messaging. Emails and messages may be poorly worded (Box 6.8), appearing unfriendly or unclear and therefore failing to interest those whom you approach. The ease of sending emails and messages may lead to 'spamming' potential and actual participants, sending large numbers of unwanted emails. Netiquette also involves respecting the intentions of other users, ensuring private messages are not subsequently be made public. We consider netiquette further in Sections 6.6, 10.10 and 11.8.

This review has highlighted several issues and dilemmas associated with the use of Internet-mediated research, although others will exist in practice. In addition, many aspects associated with these issues will need to be considered during the use of Internet-mediated research. The guidelines from the Association of Internet Researchers advocate, 'a process [which] is *reflective and dialogical* as it begins with reflection on one's own research practices and is continually discussed against the accumulated experience and ethical reflections of researchers in the field and ethical studies carried out' (Franzke et al.

2020: 4). This approach is also recommended by Whiting and Pritchard (2018), who see ethical considerations as a process that need to be anticipated and revisited at each stage of research, discussed in Section 6.6.

6.7 Ethical issues at specific research stages

Ethical issues will be important throughout your research (Figure 6.2). Each stage will require ethical integrity from you in relation to your role as the researcher, any organisational gatekeeper(s) and, where appropriate, your research sponsor. Where you are undertaking research for an organisation, you will need to find the middle ground between the organisation's expectation of useful research and your right not to be coerced into researching a topic in which you are not interested or that does not satisfy your university's assessment requirements.

Research topic formulation and clarification

Ethical issues need to be anticipated and considered from the start of your research project. Each potential research topic will be associated with a number of possible ethical concerns, which will need to be anticipated as you research with integrity. As you focus more attention on your chosen topic, you will start to formulate your overarching research question and objectives that will give direction to your research design. While doing this you should consider potential ethical concerns relating to:

- the research purpose;
- the type(s) of data will you need to collect;
- the methods you will use to collect these data;
- the implications for those whom you will ask to participate;
- how the research might be used and with what consequences.

These and other possible ethical considerations will be important as you generate your research ideas and clarify the topic, designing your research.

Research design and data access

Most ethical issues can be anticipated and considered (at least initially) during the design stage of any research project. You should plan your research in accordance with your university's code of ethics, adapting your research strategy and choice of methods where appropriate. Evidence that ethical issues have been considered and evaluated at this stage is likely to be one of the criteria against which your research proposal is judged.

Gaining access

Ethical issues can arise when you seek access. As noted earlier, you should not attempt to apply any pressure on intended participants to grant access. This is unlikely to be the case where you are approaching a member of an organisation's management to request access. However, where you are undertaking a research project as an internal researcher within your employing organisation (Section 6.3), there may be a temptation to apply pressure on others (colleagues or subordinates) to cooperate. Individuals have a right to privacy and to not participate. By not respecting this, you may well be causing harm.

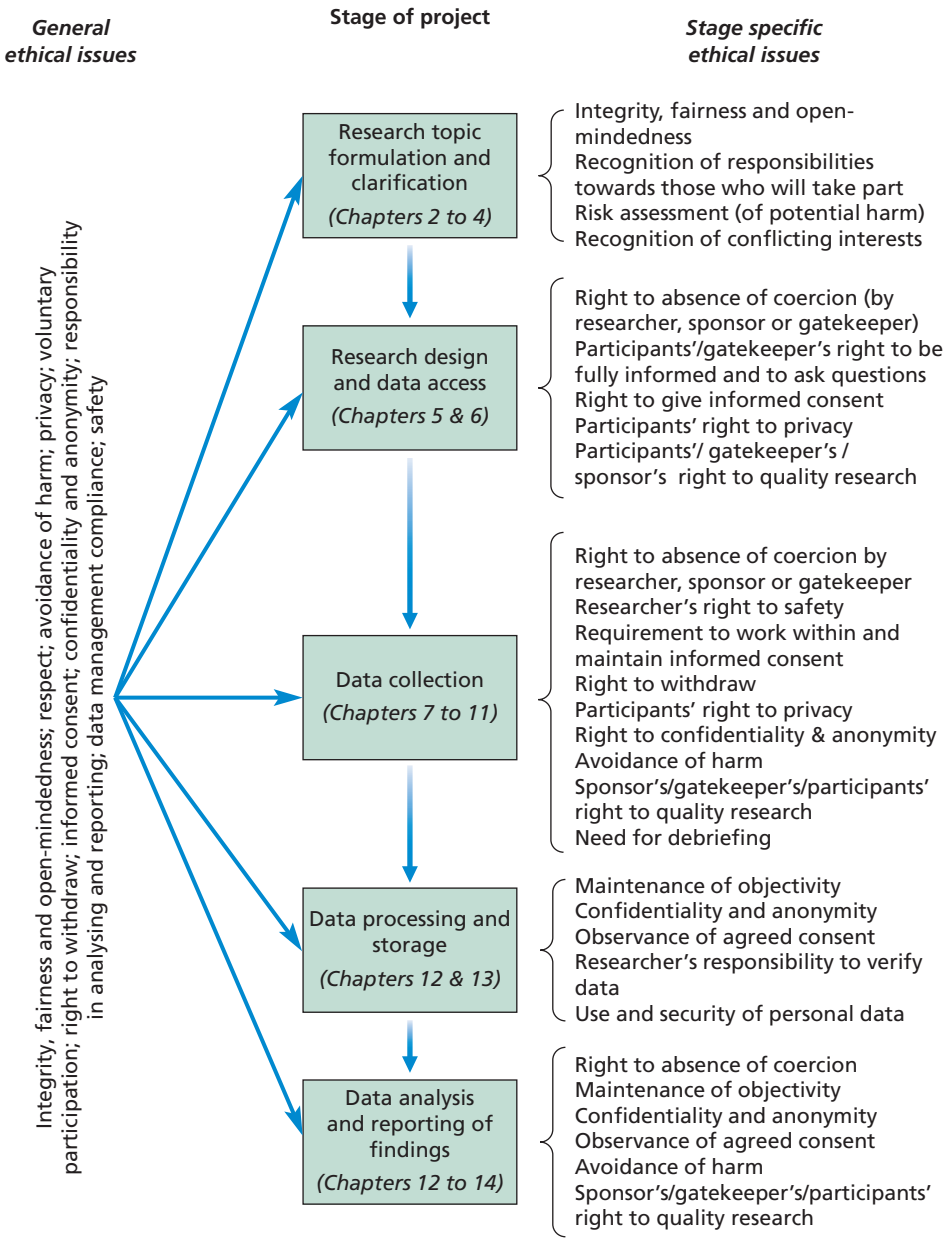


Figure 6.2 Ethical issues at specific research stages

Box 6.14 provides a checklist to help ensure you are not putting pressure on individuals to participate. You may also cause harm by the timing and nature of any approach that you make to intended participants – perhaps by telephoning at 'unsociable' times or by 'confronting' those from whom you would like to collect data. Access to secondary data may also raise ethical issues. Where you happen to obtain access to personal data about individuals who have not consented to let you have this (such as through personnel or client records), you will be obliged to anonymise these or to seek informed consent from those involved.

Box 6.14 Checklist

To help ensure you do not pressurise individuals to participate

- ✔ Have you ensured participants have not been coerced into participating?
- ✔ Are no inducements (e.g. financial payments), other than reimbursement for travel expenses and in some cases time, offered?
- ✔ Are any risks involved in participation likely to be acceptable to those participating?
- ✔ Are participants free to withdraw from the study at any time and have you informed them of this?

Gaining consent

Gaining participants' consent is not straightforward (Box 6.15). In general terms, a request to a potential participant or respondent to take part is an attempt to gain **consent**. However, this raises a question about the scope of consent given. Where someone agrees to participate in a particular data collection method, this does not necessarily imply consent about the way in which the data provided may be used. Assurances you provide about anonymity or confidentiality, and how the data will be used, can help; but even these may be inadequate to clarifying precisely the nature of that consent.

This suggests a continuum that ranges from a lack of consent, involving some form of deception, through **inferred consent**, where taking part leads the researcher to presume data may be analysed, used, stored and reported without clarifying this with the participant, to informed consent (Figure 6.3). **Informed consent** involves ensuring those involved are given sufficient information (discussed next), the opportunity to ask questions and time to consider without any pressure or coercion, and to be able to reach a freely given decision about whether or not to take part (Table 6.3).

Research where people have consented to participate can still involve deception. This may be related to deceit over the real purpose of the research, some undeclared sponsorship or an association with another organisation that will use any data gained for commercial advantage. Such deception can cause embarrassment or harm to those supporting your request for access, as well as to yourself.

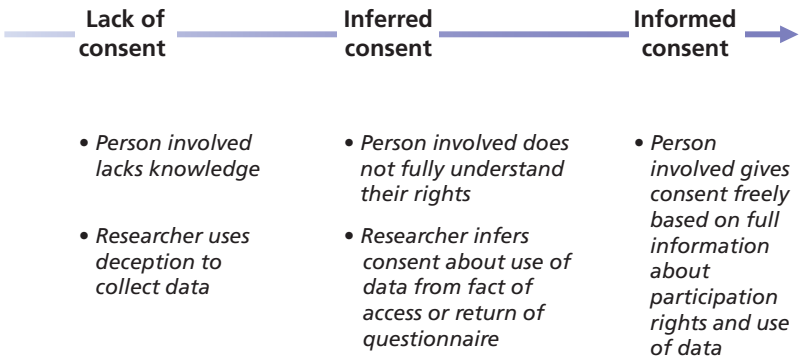


Figure 6.3 The nature of consent

Box 6.15 Focus on management research

Gaining informed consent

Rowlinson et al. (2016) undertook research that explored experiences of using 'payday lending' in the UK. This is a type of short-term but high-cost loan provided by private companies to people who are employed but who have low incomes, so that they can survive financially until their next payday, when the loan is due to be repaid.

Twenty-one in-depth, exploratory interviews were undertaken with participants who had taken loans from payday lending companies over the previous year. These participants had originally completed a questionnaire administered by a specialist research company in town centres and shopping areas and were recruited to participate in the researchers' interviews.

The researchers state they, 'took ethical concerns seriously', including gaining informed consent (Rowlinson et al. 2016: 533). At the start of each interview they explained the nature of the research they were undertaking and how the data participants provided would be used. They assured participants data and reporting would be anonymised and provided them with a research information sheet.

Rawlinson and colleagues acknowledge their research was intrusive, reporting that each interviewer was trained and experienced in conducting interviews that intruded into sensitive issues. Researcher safety as well as data quality were given as reasons for conducting interviews in pairs.

Participant information sheets

The information that is required for prospective participants or respondents to make informed decisions about whether or not to participate should be provided as a **participant information sheet** or **information sheet.** This may be emailed or made available online to intended participants or respondents or, in the case of face-to-face research, given personally. It should include information about the nature of the research, the requirements and implications of taking part, participants' or respondents' rights, how their data will be analysed, reported and stored and whom to contact in the case of concerns (Box 6.16).

Box 6.16 Checklist

Requirements for a participant information sheet

Organisational gatekeepers and intended participants need to be informed about the following aspects of a research project. This can be drawn together in a research information sheet or participant information sheet.

About the nature of the research

- ✔ What is the title of the research project?
- ✔ What is the purpose of the research?
- ✔ Who is or will be undertaking it – the name(s) of the researcher(s)?
- ✔ Where does the research originate from – the name of the researcher's university or employing organisation?
- ✔ Is the research being funded or sponsored – if so, by whom and why?
- ✔ Who is being asked to participate – i.e. broad details about the sampling frame, sample selection method and size?
- ✔ How far has the research project progressed?

About the requirements of taking part

- ✔ What type of data will be required from those who agree to take part?

Box 6.16 Checklist (*continued*)

Requirements for a participant information sheet

- ✔ How will these data be collected (e.g. interview, observation or questionnaire)?
- ✔ How much time will be required and on how many occasions?
- ✔ When will data collection take place (dates)?

About the implications of taking part

- ✔ What assurances will be provided about anonymity and confidentiality?
- ✔ What will be the consequences of participating – possible risks, depending on the nature of the approach, and expected benefits?
- ✔ When will any expected benefit, such as the promise of a summary report of the findings, be made available?
- ✔ Depending on the nature of the research, when and how will any debriefing be conducted?

About the rights of those taking part

- ✔ Recognition that participation is voluntary.
- ✔ Recognition that those taking part have the right to decline to answer a question or set of questions; or observed in particular circumstances.
- ✔ Recognition that those taking part have control over the recording of any of their responses where it is agreed that any type of photographic, video or voice recording may be made.
- ✔ Recognition that those taking part may withdraw at any time.

About the use of the data collected and the way in which it will be reported

- ✔ Who will have access to the data collected?
- ✔ How will the results of the research project be disseminated?
- ✔ How will assurances about anonymity and confidentiality be observed at this stage?
- ✔ What will happen to the data collected after the project is completed?
- ✔ Where data are to be destroyed, what is the date by which this will happen?
- ✔ Where data are to be preserved, where and how will these be stored securely, who might be given access to them and what safeguards will be established to ensure the continuing future confidentiality of these data and anonymity of those taking part?
- ✔ Whom to contact to raise any concerns and questions about the research, including their name, work address, email and contact telephone number.

The precise information required for informed consent will vary according to your research strategy, as will the way in which you seek to establish consent. If you are intending to use a questionnaire where personal data are not collected or where responses are entirely anonymised, its return completed is often taken to imply consent. Yet, as illustrated in Box 11.16, including a question in a questionnaire explicitly to request consent is straightforward. Either approach will require you to include an information sheet detailing how these data will be analysed and reported, for what purpose and what will then happen to them, as well as your identity (Corti et al. 2020). If you are intending to interview a senior manager, correspondence may be exchanged to establish informed consent (Section 6.5). When interviewing individuals, informed consent should be supplemented by a more detailed written agreement, such as a **consent form** (Box 6.17), which is signed by both parties. This helps to clarify the boundaries of consent and should help you to comply with your university's code of ethics as well as data protection legislation (Section 6.8, Corti et al. 2020). Depending on the nature of your research project you may need to seek consent to collect photographic or video-recorded data. As with audio-recording, consent needs to be obtained before the event and recorded on the consent form. Where you have established informed consent through prior written correspondence, it is worthwhile re-establishing

this with each intended participant immediately prior to collecting data (Box 10.9). This is particularly important where you are gaining access on an incremental basis (Section 6.5).

In Section 6.5 we discussed possible strategies to help you to gain access including highlighting possible benefits to an organisation of granting you access. You should be realistic about this and not offer more than is feasible. Offering to supply information arising from your work without intending to do this is unethical, and the effect of such action (or inaction) may result subsequently in a refusal to grant access to other researchers.

Data collection

Data collection is associated with a range of ethical issues (Figure 6.2). Some will apply however data are collected; others are related to particular data collection procedures. Finally, and of paramount importance, there are issues associated with ensuring your own safety while collecting your data.

Consent

After individuals or organisations have completed a consent form (Box 6.17), agreeing to take part in your research, they still maintain their right to withdraw or decline to take part in a particular aspect of your research. You should not ask them to participate in anything that will cause harm or intrude on their privacy. Once access has been granted, you should keep within the consent you agreed or renegotiate access. Not doing so is likely to cause upset and could result in further data collection being refused. There are, perhaps, some situations where deception may be accepted in relation to 'covert' research, which we discuss later in this subsection.

Avoiding falsification and fabrication

During the data-collection stage you need to make sure you collect your data accurately and fully, trying to minimise subjective selectivity in what you record. This relates to the validity and reliability, or credibility, transferability and dependability, of your work (Section 5.8). Without this, your ability to analyse and report your work accurately will be impaired. Obviously, **falsification** (distorting or misrepresenting) and **fabrication** (inventing) any data are totally unacceptable and unethical.

Confidentiality and anonymity

Confidentiality and anonymity may be important in gaining access to organisations and individuals (Section 6.5). Once such assurances have been given, they must be kept. Confidentiality is particularly important in relation to personal and sensitive personal data (see Section 6.8). Ways of ensuring anonymity are inevitably research-method specific. While the main concern is likely to be individuals or organisations being able to be identified, it is worth recognising that permission may be given for data to be attributed directly to them.

Anonymising quantitative data by aggregating or removing variables that may identify respondents is relatively straightforward. However, where qualitative data are being reported it may be less straightforward. New points of significance will emerge as the research progresses which you will wish to explore with others. Your key concern is to ensure that you do not cause harm. For example, within interviews, participants can often infer what earlier interviewees might have said from the questions being asked. This may lead to participants indirectly identifying who was responsible for making the point that you now wish to explore with them, with potential repercussions for the person. Where you wish to get others to discuss such an issue you can attempt to steer the discussion to see if they will raise it without in any way making clear that one of the other participants has already referred to it.

Box 6.17 Focus on student research

Consent form

Anna's research involved interviewing face-to-face a number of franchisees who had expanded their franchises to run multiple outlets, to understand the competences required to achieve this expansion successfully and how they had developed these. Prior to commencing each interview, Anna gave each participant an information sheet that summarised her research project, including the possible benefits and disadvantages of taking part. After carefully explaining her research, the reasons why (with the participant's permission) she wished to audio-record or video the interview and emphasising that individuals were not obliged to participate unless they wished, Anna asked them if they wished to participate. Those who did were asked to complete and sign the following consent form:

Anytown Business School

CONSENT FORM

Title of research project:
Successful franchise expansion

Name and position of researcher:
Anna Verhoeven, Final year student, Anytown Business School, University of Anytown

		please initial box
1.	I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving reason.	☐
3.	I agree to take part in the study.	☐

		please tick box *Yes*	*No*
4.	I agree to the interview being audio recorded.	☐	☐
5.	I agree to the interview being video recorded.	☐	☐
6.	I agree to the use of anonymised quotes in publications.	☐	☐

Name of participant: Date: Signature:

Anna Verhoeven (researcher) Date: Signature:

Use of the Internet and email during data collection can lead to the possibility of serious ethical and netiquette issues, related to confidentiality and anonymity. For example, it would be technically possible to forward a participant's email (or interview notes) to another participant in order to ask this second person to comment on the issues being raised. Such an action would infringe rights to confidentiality and anonymity, perhaps causing harm. It should definitely be avoided. It may also lead to data protection issues related to the use of personal data (Section 6.8).

Appropriate behaviour

The ability to explore and seek explanations through interview-based techniques offers opportunities for ethical and other issues to arise. Even with online interviews, personal interaction, scope to use non-standardised questions and, with video-conferencing software, to observe on a 'face-to-face' basis, mean you can exercise a greater level of control (Chapter 10) than with a quantitative approach based such as structured interviews or self-completed questionnaires (Chapter 11).

The relatively greater level of research control associated with interview-based techniques means you need to be careful your behaviour remains within appropriate and acceptable parameters. In face-to-face interviews, you should avoid overzealous questioning and pressing your participant for a response as this can be stressful. You should also make clear to your interview participants that they have the right to decline to respond to any question. The nature of questions to be asked also requires consideration. For example, you should avoid asking questions that are in any way demeaning to your participant (Sections 10.5–10.11). For all forms of synchronous (real-time) interviews it will be necessary to arrange a time that is convenient for your participant. For questionnaires (Chapter 11) participants may still be reluctant to answer questions of a personal or sensitive nature even where their responses are anonymous.

Reactivity and covert research

Use of observation techniques (Chapter 9) raises its own ethical concerns. The boundaries of what is permissible to observe need to be defined clearly. You should also avoid attempting to observe behaviour related to private life, such as personal telephone calls and so forth. Without this, the relationship between observer and observed will break down, with the latter finding the process to be an intrusion on their right to privacy. There is, however, a second problem related particularly to the use of this method, the issue of **reactivity**. This is the reaction on the part of those being investigated to the researcher and their research instruments (Bryman 1988: 112).

One solution to reactivity is a **covert** study, so those being observed are not aware. In such a situation, declaring your purpose at the outset of your work might lead to non-participation or to problems related to credibility and dependability (or validity and reliability) if those being observed altered their behaviour. The rationale for being deceitful in a benign way would be related to a question of whether 'the ends justify the means', provided other ethical aspects are considered (Wells 1994: 284). For others, deception should never be used. Fortunately, the problem of reactivity may decline as those being observed adapt to your presence as declared observer. Their adaptation is known as **habituation**.

Where access has been denied, you may consider you have no choice other than covert observation. We strongly advise against this. Covert observation, if discovered after access has been denied, will prove to be a considerable source of irritation. Many universities' ethical codes prohibit any form of research where access has been denied. In such situations, you will need to re-evaluate and revise your design.

If you are an internal or practitioner–researcher, you may consider initially adopting a covert approach. You may decide to interview subordinate colleagues, organise focus groups through your managerial status or observe interactions during meetings without declaring your research interest. However, we would urge considerable caution and to think carefully about the longer term impact. While this approach may be more likely to yield trustworthy data than declaring your real purpose and acting overtly, the impact on your work relationships may well be detrimental.

Irrespective of the reason why deception is used, it is widely accepted that after covert observation has taken place, those affected should be informed. This process is known as **debriefing** and is used to inform participants about the nature of the research, its outcomes and ascertain if there have been any adverse consequences from taking part; if so, to talk to the participant affected and arrange for assistance as required (British Psychological Society 2018). Debriefing also occurs after agreed participation in strategies such as a research experiment.

Personal safety

When thinking about avoiding harm, many researchers forget about themselves! The possibility of harm to you as the researcher is an important ethical issue that you should not ignore. You should not reveal personal information about yourself such as your home address or telephone number. Careful consideration needs to be given to a range of risk factors including the research purpose, location and timing of data collection and health and safety considerations. You need to consider risks to your safety and minimise these through strategies such as meeting participants in safe spaces, collecting data collection during the daytime and letting others know your arrangements, including where you will be.

In discussing researcher safety with our students, we have found the guidance sheets on working alone and dealing with aggression provided by the Suzy Lamplugh Trust (http://www.suzylamplugh.org/) extremely helpful. As the Trust's guidance sheets emphasise, you should never allow your working practices (research design and conduct) to put your own safety in danger. This, and 'Code of Practice for the Safety of Social Researchers' (Social Research Association 2001), offer a range of strategies to promote personal safety (Box 6.18).



Box 6.18 Checklist

Personal safety when collecting primary data

- ✔ Plan your meeting with a person in a busy public place or office where other people work nearby if at all possible.
- ✔ Consider carefully the location you are travelling to and your travel plans: what risks might you encounter; whether you will use public transport, a reputable taxi firm or a private car (if you use a private car ensure there is a safe place to leave it).
- ✔ Carry sufficient money to cover your expenses and any unexpected ones.
- ✔ Carry a mobile phone and make sure it is fully charged.
- ✔ Make a mental note of a safe way to leave the building or place where you meet.
- ✔ Make a telephone call to a friend before a particular meeting to tell them who you are meeting, where and how long you expect the meeting to last; call them again to tell them you have left and about your subsequent meeting plans and/or travel arrangements.
- ✔ Set up a system where you contact someone each day with a full list of whom you are meeting, where and at what times.
- ✔ In a meeting be aware of the use of body language, appearance, cultural norms, social distance and the gender dynamics of interactions.

- ✔ The considerable majority of meetings are helpful and non-threatening but in very rare cases someone may become aggressive or angry: be aware of any changes in behaviour; consider what questions you are asking and how you are asking them; remain calm; where necessary be assertive but not aggressive; if necessary end the meeting politely and leave quickly.
- ✔ Carry a personal (screech) alarm in case of an emergency.
- ✔ Consider carefully your safety if the location of your research means that you will be in a lone working situation; some researchers work in pairs in such situations to reduce safety risks.
- ✔ Always consider your safety and any risks to yourself and avoid any situation that might be difficult or dangerous.

Data processing and storage

Confidentiality and anonymity issues are crucial while processing and storing data. In particular, the use and security of personal data that either directly identifies individuals or makes them identifiable when used in combination must be managed in accordance with data protection legislation (Section 6.8). The ethical and legal management of data is often formalised in a **data management plan**. This outlines how your research data, both raw and processed, will be collected, organised, stored securely (including backup copies) and, where appropriate, shared. It also considers issues of ethics and legal compliance and, as a living document, should be kept up to date (Box 6.19).

Box 6.19 Checklist

Requirements for a data management plan

Data collection and documentation

- ✔ In overview, what data are being collected or sourced?
- ✔ How are these data being collected (e.g. 'observation', 'interview', 'questionnaire') or sourced and, for longitudinal research, over what time period?
- ✔ In what format are the data being stored (e.g. 'Word document', 'SPSS data file') and likely file size?
- ✔ How are details of data coding being noted (e.g. 'separate document')?

Data storage and backup

- ✔ How and where are the data being stored and password protected (e.g. 'university fileserver')?
- ✔ How are the data being backed up, how frequently and how are different versions be labelled (e.g. 'v1', 'v2')?
- ✔ How are non-digital data being stored securely (e.g. 'locked filing cabinet')?

Ethical and legal compliance

- ✔ How are the identities of participants being protected, where required (e.g. 'anonymised')?
- ✔ Does the processing and storing of personal data comply fully with data protection legislation?
- ✔ Who owns these data? (e.g. 'researcher')
- ✔ (If appropriate) Are there restrictions on the re-use of secondary data?

Data archiving

- ✔ What will happen to the data after the research project is completed (e.g. 'destroyed', 'stored on university fileserver')?
- ✔ How long will the data be kept after the research project (e.g. '10 years')?
- ✔ Who will have access to these data (e.g. 'researcher')?

Source: Developed from Digital Curation Centre (2013).

Files containing confidential or personal data need to be properly labelled and kept securely. This refers not only to your original notes or recordings but also to any subsequent drafts, transcriptions, re-recordings, backup and anonymised versions. For example, notes, recordings or questionnaires are likely to include personal identifiers such as names, job titles and workplace locations that identify the participant. Anonymised versions of data will have used pseudonyms, tactics such as aggregating data and higher levels of generalisation to remove personal identifiers. Nevertheless, if personal identifiers still exist, even in another document, they may be used to reveal the identities of participants or respondents. Particular care therefore needs to be exercised when storing both original versions of data that include personal identifiers and personal identifiers that provide the key to revealing the identities of anonymised individuals. Data that contain personal identifiers therefore need to be held securely and separately to anonymised versions of data to which they relate (Corti et al. 2020) to protect them from unauthorised access.

Non-digital data such as paper copies of interview or observation notes, signed consent forms, structured observation forms, questionnaires and other documents containing confidential or personal data need to be stored in a restricted, secure and safe place. Data held externally, such as on USB mass storage devices, also needs to be stored under the same conditions, encrypted and password protected. Although online file sharing and storage services enable you to keep an online copy of your data files, beware. Many universities explicitly prohibit the use of third-party cloud services.

When data are destroyed, paper documents should be shredded, not just placed in a bin, and digital materials permanently deleted (Corti et al. 2020). Ethical concerns of confidentiality and anonymity, participants' privacy and the need to ensure that harm is not caused to those who participated are likely to remain beyond the end of your research project.

Data analysis and reporting findings

Trying to maintain objectivity will be vital during the analysis stage to ensure you do not misrepresent the data collected. This will include not being selective about which data to report or, where appropriate, misrepresenting its statistical accuracy. A great deal of trust is placed in each researcher's integrity, and it would clearly be a major ethical issue were this to be open to question. Lack of honesty when analysing data and reporting findings will distort your conclusions and associated recommendations. Distorting or misrepresenting data, findings and conclusions are all examples of falsification, which is a totally unacceptable and unethical.

The ethical issues of confidentiality and anonymity also come to the fore during the reporting stage of your research. Wells (1994) recognises that it may be difficult to maintain the assurances that have been given. Allowing a participating organisation to be identified by those who can 'piece together' the characteristics that you reveal may result in embarrassment and access being refused to those who seek this subsequently. Great care therefore needs to be exercised to avoid this situation. You also have the option of requesting permission from the organisation to use their name. To gain this, you will almost certainly need to let them read your work to understand the context within which they would be named.

The same care needs to be exercised in maintaining individuals' anonymity. Embarrassment and harm might result from reporting data that are clearly attributable to an individual. Think carefully about collecting data that identify individuals, such as full names, unless necessary to do so. Always seek to anonymise the identities of those who take part by using a level of generalisation that ensures that others are not able to identify them.

For example, do not refer to specific ages, dates, locations, countries, real names, actual organisations' names or job positions or include photographs that will make it easy to identify participants or respondents, participating organisations, groups or communities (UK Data Archive 2017), unless there is express permission to identify any of these (Box 6.20).

A further ethical concern stems from the use made by others of your conclusions and any course of action that is explicitly referred to or implicitly suggested. Some argue it would be unethical to use the research data collected from a group of people to disadvantage. Others consider that while the identity of those taking part should not be revealed, they cannot be exempt from the way in which research findings are used subsequently to make decisions. This is clearly an ethical issue, requiring very careful evaluation.

Where you are aware that your findings could adversely affect the collective interests of those who took part, it would be ethical to refer to this possibility, even if it reduces the level of access you achieve. An alternative position is to develop your research question and objectives to avoid this possibility or so that decisions taken as a result of your research should have only positive consequences collectively for those who participate. You may find that this alternative is not open to you, perhaps because you are a part-time student in employment and your employing organisation directs your choice of research topic. In such situations it is more honest to explain that you are, in effect, acting as an internal consultant rather than a (dispassionate) researcher.

We now consider ethical issues that arise in relation to the analysis of secondary data derived from questionnaires. Where questionnaire data are subsequently used as secondary data, the original assurances provided to those who participated in the research can be inadvertently set aside, and participants may be disadvantaged through this use of data (Dale et al. 1988). Use of data for secondary purposes can therefore also lead to ethical concerns that need to be considered. Secondary analysis of qualitative data can also raise ethical concerns, although, as with quantitative data, these can be anticipated during data collection (Bishop and Kuula-Luumi 2017). In particular, they can be reduced by



Box 6.20 Focus on student research

Inadvertently revealing participants' identities

Over the years we have read a large number of student research projects. The following examples, drawn from some of these, highlight how easy it is to inadvertently reveal the identities of research participants in your research project:

- attributing a comment to a female accounts manager when there is only one such person;
- referring to a comment made by a member of the sales team, when only one salesperson would have had access to the information referred to in the comment;
- reporting data and comments related to a small section of staff, where you state the name or job title of the one person interviewed from that section elsewhere in your research report;
- referring to an 'anonymous' organisation by name on the copy of the questionnaire placed in an appendix;
- attributing comments to named employees;
- thanking those who participated in the research by name;
- using pseudonyms where the initials of the pseudonym are the same as those of the actual person interviewed or where the name is similar, e.g. using Emilia Morris for Emily Morrison;
- including a photograph of the interview site or interviewee in your project report.

Box 6.21 Checklist

To help anticipate and deal with ethical issues

- ✔ Recognise potential ethical issues that will affect your proposed research.
- ✔ Treat consideration of ethical issues as an active, continuous and reflexive process occurring throughout your research, from topic formulation to reporting, rather than just something you consider at the start of your project.
- ✔ Use your university's code of research ethics to guide the topic choice, design and conduct of your research.
- ✔ Anticipate potential ethical issues at topic formulation and clarification and anticipate how you would address these. Use this to help evaluate your choice of potential topics and decide which to research.
- ✔ Anticipate ethical issues at the research design and data access stage and outline how you will seek to address these in your research proposal.
- ✔ Seek informed consent being open and honest, rather than using deception.
- ✔ Do not exaggerate the likely benefits of your research for those participating.
- ✔ Respect others' rights to privacy at all stages of your research.
- ✔ Maintain integrity and quality in data collection.
- ✔ Recognise more intrusive research approaches have greater scope for ethical issues to arise and seek to avoid the particular problems related to interviews and observation.
- ✔ Avoid referring to data from a particular participant when talking to others, where this would allow the individual to be identified.
- ✔ Be wary of researching covertly even where reactivity is likely to be a significant issue and a covert presence is practicable.
- ✔ Maintain your objectivity during data analysis and reporting findings.
- ✔ Maintain assurances of confidentiality and anonymity in reporting findings.
- ✔ When using the Internet, recognise this may raise particular ethical issues and dilemmas. Anticipate these and determine how you will conduct your Internet-mediated research ethically.
- ✔ Avoid using the Internet or email to share data with others taking part.
- ✔ Consider how the collective interests of those involved may be affected adversely by the data collected and amend your research question and objectives where possible. Alternatively, declare this possibility to those whom you wish to participate in your proposed research.
- ✔ If using secondary data, consider how you will protect the identities of those who contributed to its collection or who are named within it.
- ✔ Unless necessary, base your research on genuinely anonymised data. Where it is necessary to process personal data, ensure that you comply fully with all current data protection legislation and your university's code of ethics.
- ✔ Protect the identities of those involved, ensuring their anonymity in your project report unless you have their explicit permission to do otherwise.

anonymising data as they are collected and recorded, ensuring real names and organisations are not part of the data set.

A final checklist to help you anticipate and deal with ethical issues is given in Box 6.21.

6.8 Data protection principles

This section offers an overview of the principles of data protection, which are crucial to managing your data ethically and lawfully. We first consider the use and protection of personal data, and then the use of anonymised data.

Use and protection of personal data

Data protection legislation refers specifically to protecting **personal data**. These are data that either directly identify individuals by, for example, naming them, showing their image or their IP address; or make individuals identifiable when used in combination with other information. Personal data are therefore different to truly **anonymised data**, from which individuals cannot be identified.

Data protection in the European Union (EU) has assumed even greater importance since the implementation of the General Data Protection Regulation EU 2016/679 (GDPR). This Regulation repealed and replaced Directive 95/46/EC on 25 May 2018 (Box 6.19). As a Regulation of the European Parliament and European Council, it is directly applicable and legally binding in all EU member states. The EU GDPR provides protection for living individuals in relation to the processing of personal data applying in full to the UK, along with the UK's Data Protection Act 2018 and UK GDPR until 31 December 2020. On 1 January 2021, when the UK left the EU, the EU GDPR ceased to apply to the UK. However, it effectively became part of UK domestic law, the European Union (Withdrawal) Act 2019, amending UK GDPR so it is directly applicable to the UK on a standalone basis.

Both EU and UK GDPR set out clear rules regarding the processing and free movement of personal data and rules regarding to the free movement of personal data (Information Commissioner's Office 2018; Official Journal of the European Union 2016: L119/32 EN). Personal data are defined as data about a living individual that allow them to be identified, perhaps in combination with other information known to the controller of the data. These data include a person's name, identification number, location, online presence or some other attribute. Anything you do with these data is termed 'processing', whether automated or manual, including collecting, recording, organising and storing. The 'controller' is the person (or legal entity) who decides how and why to collect, record, organise and store the personal data; while the 'processor' processes these data on behalf of the controller.

Both GDPRs establish seven principles regarding personal data, that it must be:

1. processed lawfully, fairly and transparently;
2. collected for specified, explicit and lawful purposes and not processed further in a manner incompatible with those purposes, while allowing data to be processed further for scientific, historical and statistical research purposes where this is not incompatible with the initial purposes;
3. adequate, relevant and limited to the purpose for which they are processed;
4. accurate and, where necessary, kept up to date;
5. kept in a form that allows identification of data subjects for no longer than is necessary in relation to the purpose for which they are processed, while allowing personal data to be stored for longer periods where this is solely for scientific, historical and statistical research purposes and subject to measures to safeguard the rights and freedoms of data subjects;
6. kept securely and protected from wrongful processing and accidental loss or damage;
7. held responsibly by the controller in compliance with the points listed above.

The GDPRs emphasise these data can only be processed if it is necessary for a specific purpose and providing the data subject has consented and that the data 'controller' will be able to demonstrate that this has been given. The processing of sensitive and personal data is prohibited, unless one of a number of conditions applies, including explicit consent given by the data subject. Such personal data includes racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic or biometric data, health and sex. Effective explicit consent is likely to mean clear and unambiguous written consent in this context.

EU and UK GDPRs deal with the rights of data subjects in relation to personal data collected from data subjects and obtained from other sources. Data subjects have rights to

access data held about them, to rectify errors, to be forgotten (the erasure of personal data) and to restrict processing under certain conditions. The GDPRs also regulate the roles of data controllers and processors; transfers of personal data to third countries or international organisations; mechanisms to supervise the implementation of this regulation; remedies, liabilities and penalties; and provision relating to specific processing situations. These include safeguards and derogations (exemptions) relating to scientific, historical and statistical research purposes that are designed to protect data subjects during the processing of personal data. Safeguarding measures include the use of pseudonyms where appropriate and other ways to process personal data that prevent the identification of data subjects.

Our brief summary of selected aspects of this legislation should only be treated as an introductory outline and not as providing any type of advice or guidance. Neither should this brief summary be interpreted as suggesting whether or not this or any other legislation is applicable to your research project. Where your research is covered by the scope of this or other legislation, you should seek advice that is appropriate to the particular circumstances of your research project where this involves the processing of personal data. Data protection legislation is likely to exist in countries outside the EU and UK, and you will need to be familiar with legislative requirements where you undertake your research project to understand how these may affect your research and the legal obligations that this places on you. Whether or not your research is affected by data protection legislation, you will also be aware of the need to conduct your research ethically and ensure you abide by your university's ethical code (Sections 6.6 and 6.7).

Use of anonymised data

The discussion of the legal protection of personal data has hopefully focused your mind on the implications of processing personal data. Unless there is a clear reason for processing these data, the best course of action is likely to be to ensure that your data are completely and genuinely anonymised and that any 'key' to identify data subjects is not retained by those who control these data. The EU and UK GDPRs do not apply to personal data that have been effectively anonymised so that data subjects are not, or no longer, identifiable. It therefore is not concerned with the processing of such anonymous information, including for research purposes.

There are various techniques to anonymise personal data. In relation to qualitative data these include removing data subjects' names and other personal identifiers from documents and records; using pseudonyms, especially in reporting; obscuring faces and other identifiers in visual images; blurring facial images and other identifiers in video recordings; and electronically altering voices in audio recordings. In relation to quantitative data these include data masking, where personal identifiers are removed; using pseudonyms, especially in reporting; data aggregation and reducing precision; and restricting upper and lower ranges to hide outliers (UK Data Service 2021).

6.9 Summary

- Access and ethics are critical aspects for the conduct of research.
- Access has three overlapping sets of characteristics:
  - type: traditional, Internet-mediated, intranet-mediated and hybrid access;
  - nature: single organisation, multiple organisation, individual person and elite person access;
  - level: physical, cognitive and continuing access.
- Suitability of access can be evaluated in terms of feasibility and sufficiency.
- Gaining access will depend to some extent on your status as either an external researcher or an internal or participant researcher.

- Internet-mediated access necessitates identifying an appropriate sample and negotiating virtual access. In doing this you should respect rights to privacy and copyright.
- There are a range of strategies that can be used in combination to support gaining access to organisations and intended participants or respondents dependent upon your research design.
- Research ethics refers to the standards of behaviour that guide your conduct in relation to the rights of those who become the subject of your research or are affected by it.
- There are two dominant but conflicting philosophical ethical positions: the deontological and the teleological.
- The conduct of your research will be guided by your university's or professional association's code of ethics or ethical guidelines that must be followed.
- Your research will almost certainly be subject to ethical review and you should not collect data until ethical approval has been given.
- Potential ethical issues should be recognised and considered from the outset of your research and are one of the criteria against which your research is judged. Issues may be anticipated by using codes of ethics, ethical guidelines and ethical principles.
- Ethical concerns can occur at all stages of your research project; during research topic formulation and clarification, research design and data access, data collection, data processing and storage, and data analysis and reporting of findings.
- Qualitative research is likely to lead to a greater range of ethical concerns in comparison with quantitative research, although all research methods have ethical issues associated with them.
- Gaining participants' or respondents' consent, although not always straightforward, is crucial. While covert research does not require consent, it is only likely to receive ethical approval in very specific cases.
- Assurances of confidentiality and anonymity are important in gaining access and, if given, must be kept.
- You need to consider your own safety very carefully when planning and conducting research.
- Further ethical and legal concerns are associated with data protection and data management, affecting the collection, processing, storage and use of personal and confidential data. You must comply carefully with data protection legislation when using personal data, to protect the privacy of their data subjects and to avoid the risk of any harm occurring.

Self-check questions

Help with these questions is available at the end of the chapter.

6.1 What are the characteristics of access and why is it important to differentiate between them?

6.2 What do you understand by the use of the terms 'feasibility' and 'sufficiency' when applied to the question of access?

6.3 Which strategies to help to gain access are likely to apply to the following scenarios:

- **a** an 'external' researcher seeking direct access to managers who will be the research participants;
- **b** an 'external' researcher seeking access through an organisational gatekeeper/broker to their intended participants or respondents;
- **c** an internal researcher planning to undertake a research project within their employing organisation?

6.4 What are the principal ethical issues you will need to consider irrespective of the particular research methods that you use?

6.5 What problems might you encounter in attempting to protect the interests of participating organisations and individuals despite the assurances that you provide?

Review and discussion questions

6.6 In relation to your proposed research project, evaluate your scope to use:
- **a** traditional access;
- **b** Internet- or intranet-mediated access;
- **c** hybrid access

to gain access to those you wish to take part. Make notes about the advantages and disadvantages of each access strategy.

6.7 With a friend, discuss your answers to Question 6.6. Now discuss how you intend to gain access to the data you need for your research project. In your discussion make a list of possible barriers to your gaining access and how these might be overcome. Make sure that the ways you consider for overcoming these barriers are ethical!

6.8 Agree with a friend to each obtain a copy of your university's or your own professional association's ethical code. Each of you should make a set of notes regarding those aspects in the ethical code that you feel are relevant to your own research proposal and a second set of notes of those aspects you feel are relevant to your friend's research proposal. Discuss your findings.

6.9 Visit the Suzy Lamplugh Trust website at http://www.suzylamplugh.org and the Social Research Association at https://the-sra.org.uk/common/Uploaded%20files/SRA-safety-code-of-practice.pdf. Browse the guidance leaflets/web pages and code of practice located at these websites. Make a list of the actions you should take to help ensure your own personal safety when undertaking your research project. Make sure you actually put these into practice.

6.10 Visit the Research Ethics Guidebook at www.ethicsguidebook.ac.uk and browse through the sections of this guide. In relation to the context of your proposed research project, make a note of points that provide additional guidance to help you to anticipate and deal with potential ethical concerns.



Progressing your research project

Negotiating access and addressing ethical issues

Consider the following aspects:

- Which types of data will you require in order to be able to answer your overarching research question and address your research objectives?
- Which research methods do you intend to use to obtain these data (including secondary data as appropriate)?
- What are the characteristics of the access you require in order to be able to collect data?
- What problems are you likely to encounter in gaining access?
- Which strategies to gain access will be useful to help you to overcome these problems?
- Depending on the of access envisaged and your status as an external researcher or internal/practitioner researcher, draft requests for organisational access and/or requests to individuals for their cooperation along with associated information sheets.
- Describe the ethical issues that are likely to affect your proposed research project, including your own personal safety. Discuss how you will seek to overcome or control these. This should be undertaken in relation to the various stages of your research project.
- Note down your answers. Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Buchanan, D., Boddy, D. and McCalman, J. (2013) 'Getting in, getting on, getting out and getting back', in A. Bryman (ed.) *Doing Research in Organisations.* London: Routledge Library Edition, pp. 53–67. This continues to provide a highly readable, relevant and very useful account of the negotiation of access.

Corti, L., Van den Eynden, V., Bishop, L. and Woollard, M. (2020) *Managing and Sharing Research Data: A Guide to Good Practice.* London: Sage. This good practice guide deals with both primary and secondary data and contains numerous checklists and templates.

Kozinets, R.V. (2020) *Netnography: The Essential Guide to Qualitative Social Media Research* (3rd edn). London: Sage. Chapter 6 provides a useful insight into the notions of ethical territory, research ethics and when data and people can be considered public or private. Issues of informed consent and harm are also discussed, along with concealment and fabrication.

Suzy Lamplugh Trust website at http://www.suzylamplugh.org and the Social Research Association website at http://the-sra.org.uk. These give useful tips, information and a code of practice to help improve your personal safety.

Case 6
Onboarding practices and employee retention



Source: Dean Drobot/Shutterstock

Lila is studying for an MSc in Human Resource Management. Throughout her undergraduate and postgraduate studies, she has worked for a variety of different organisations to finance her education. In Lila's experience, most of her past employers offered her little support as a new employee, and their onboarding strategy was deficient. The literature points in the same direction: despite the importance of properly welcoming new employees, organisations struggle to provide them with efficient onboarding programmes (Caldwell and Peters 2018; Snell 2006). For her research project, she had decided to investigate how poor onboarding practices affect employee retention. She now wants to conduct qualitative research with new employees from a selected organisation and answer the research question: '*To what extent does the quality of onboarding programmes influence employee retention?*'

In order to gain access to participants and to relevant material that could inform her research question, Lila contacted multiple managers working for various types of organisations

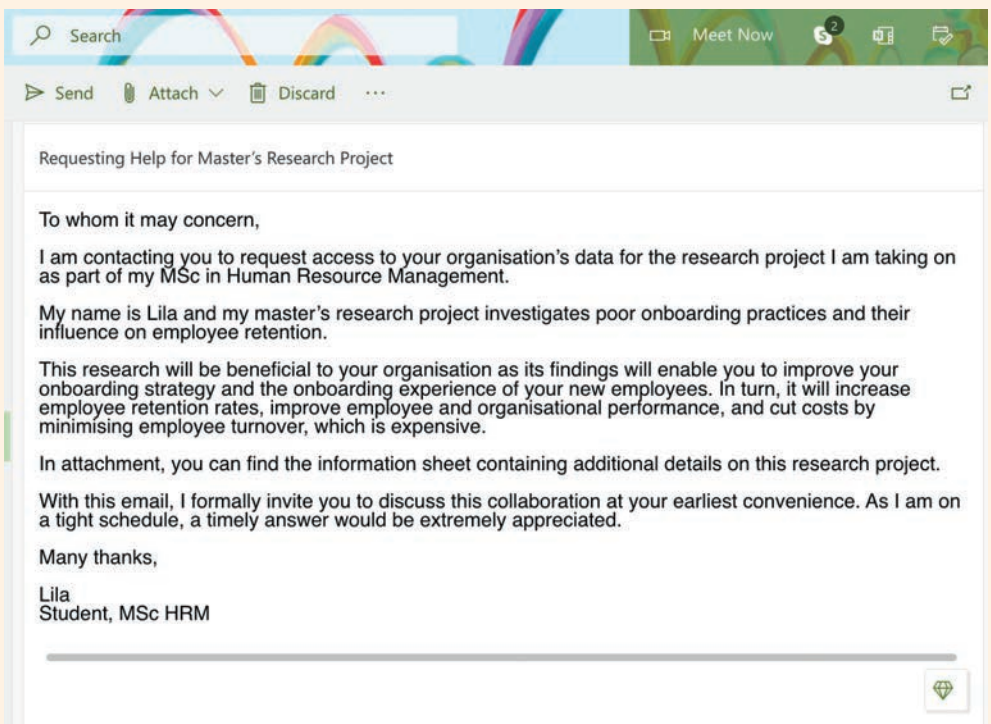


Figure C6.1 Lila's email request

in her city. She sent out email requests (Figure C6.1) with a detailed information sheet presenting her research project, the benefits associated with taking part, the requirements and general ethical considerations. She did not consult with her project tutor prior to sending out email requests. She felt confident that her email requesting access and the accompanying information sheet (Figure C6.2) were compelling enough to spark managers' interest. She considered they were clear, concise and very persuasive. Moreover, she was sure her offer of a detailed report of the research findings would constitute a strong incentive for organisations to accept her invitation to participate in her research project.

The effect of poor onboarding practices on employee retention

Research objective

This research project aims to uncover the impact of poor onboarding practices on employee retention. The goal of this study is to allow organisations to improve their onboarding programmes by aligning them to employees' expectations in order to maximise employee retention.

Benefits of this research project

By accepting to participate in this research project, you will get:

- A detailed report of the research findings,
- Information regarding employees' perceptions of the current onboarding programmes,
- A better understanding of your employees' expectations regarding onboarding programmes.

The findings of this research project will also allow your organisation to:

- Offer a better onboarding experience to new employees,
- Increase employee retention and reduce employee turnover,
- Improve onboarding programmes and suggest ways to design and manage them properly,
- Improve overall performance and competitiveness of your organisation.

Research requirements

- Data will be collected through semi-structured individual interviews conducted with new employees.
- Participants will be interviewed for 45 minutes to 1 hour.
- Access to relevant documentation will be mandatory (onboarding guidelines and procedures, data on employee retention, content of exit interviews conducted with recent hires, etc).

Ethical considerations

The participation of your organisation and its employees is confidential. By conforming to strict ethical guidelines, the confidentiality and anonymity of all participating parties involved in this research project are guaranteed.

Student researcher: Lila
Email: lila@business.anytown.edu
✆: 071234567890

Figure C6.2 Lila's information sheet

After weeks of sustained effort to gain access and multiple rounds of email communications, Lila's requests were left unanswered, simply being ignored. Lila felt defeated. Faced with this predicament of not being able to gain access, she wanted to understand why her attempts failed and why she was struggling to get any responses from the multiple managers she had messaged. After all, without gaining access to an organisation and its employees, she could not collect data as planned. She had to resolve this issue. Lila finally emailed her project tutor to discuss and address this significant problem.

The project tutor was not surprised that Lila had not heard back from the managers she had emailed. Her tutor identified major problems with the way Lila had presented her research project and approached organisations.

References

Caldwell, C. and Peters, R. (2018) 'New employee onboarding – psychological contracts and ethical perspectives', *Journal of Management Development,* Vol. 37, No. 1, pp. 27–39.

Snell, A. (2006) 'Researching onboarding best practice: Using research to connect onboarding processes with employee satisfaction', *Strategic HR Review,* Vol. 5, No. 6, pp. 32–5.

Questions

1 What key concerns do you consider Lila's project tutor will bring to her attention?
2 How might Lila address these concerns?
3 What other approaches to gain access could Lila consider?

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders.**

They are:

- The effects of a merger in a major UK building society (focussing on being an internal researcher in a placement organisation);
- The quality of service provided by the accounts department (focussing on gatekeeper power and influence when negotiating access and the associated ethical implications);
- Misreading issues related to access and ethics in a small-scale enterprise (focussing on access and ethics when researching a family member's organisation);
- Mystery customer research in restaurant chains (focussing on the ethics of using deception);
- Gaining access to business angels' networks (focussing on negotiating access to highly sought-after organisations);
- The impact of colour on children's brand choice (focussing on ethical and access issues when collecting data from children);
- Chinese students' interpretations of trust (focussing on preserving confidentiality, the participant information sheet and the consent form);
- Gaining and maintaining fieldwork access with management consultants (focussing on Gaining and maintaining traditional access as an external researcher).

Self-check answers

6.1 Characteristics of access are overlapping and comprise 'type', 'nature' and 'level'. Types of access are traditional, Internet- and intranet-mediated and hybrid. In contrast to traditional access, Internet- and intranet-mediated access involves using one or more computing technologies to gain access to participants. Hybrid access involves using a combination of traditional and Internet-mediated forms of access. Levels are physical or initial access; continuing access, which recognises that researchers often need to develop their access on an incremental basis; and cognitive access, where you will be concerned to gain the cooperation of individuals. We also referred to the nature of access, which can be with a single or multiple organisations, individual persons or elite persons. Access is strategically related to the success of your research project and needs to be carefully planned. In relation to many research designs, it will need to be thought of as a multifaceted aspect and not a single event.

6.2 Gaining access can be problematic for researchers for a number of reasons. Feasibility recognises this and suggests that in order to be able to conduct your research it will be necessary to design it with access clearly in mind. Sufficiency refers to two aspects related to access: first, whether you have fully realised the extent and nature of the access required to answer your research question and objectives fully. Second, whether you are able to gain sufficient access in practice in order to be able to answer your research question and objectives.

6.3 We consider the three particular scenarios outlined in the question in Table 6.5.

Table 6.5 Considering access

	Scenario A	Scenario B	Scenario C
Allowing sufficient time.	True for all scenarios. The practitioner–researcher will be going through a very similar process to those who wish to gain access from the outside in terms of contacting individuals and organisations, meeting to explain the research, providing assurances, etc. The only exception will be related to a covert approach, although sufficient time for planning, etc. will, of course, still be required.		
Using existing contacts.	Where possible.		Yes.
Developing new contacts.	Probably necessary.		This may still apply within large, complex organisations, depending on the nature of the research.
Providing a clear account of the research purpose and type of access required, with the intention of establishing credibility.	Definitely necessary.		Still necessary, although easier to achieve (verbally or internal memo) with familiar colleagues. Less easy with unfamiliar colleagues, which suggests just as much care as for external researchers.
Overcoming organisational concerns to granting access.	Definitely necessary.	Absolutely necessary. This may be the major problem since you are asking for access to a range of employees.	Should not be a problem unless you propose to undertake a topic that is highly sensitive! We know of students whose proposal has been refused within their organisation.

	Scenario A	Scenario B	Scenario C
Outlining possible benefits of granting access and any tangible outcome from doing so.	Probably useful.		Work-based research projects contain material of value to the organisation, although they may largely be theoretically based.
Using suitable language.	Definitely necessary.		Still necessary at the level of individuals in the organisation.
Facilitating replies when requesting access.	Definitely useful.		Might be useful to consider in relation to certain internal individuals.
Developing access on an incremental basis.	Should not be necessary, although you may wish to undertake subsequent work.	Definitely worth considering.	Might be useful depending on the nature of the research and the work setting.
Establishing credibility.	Access is not being sought at 'lower' levels within the organisation: however, there is still a need to achieve credibility in relation to those to whom you are applying.	Definitely necessary.	May still be necessary with unfamiliar individuals in the organisation.

6.4 The principal ethical issues you will need to consider irrespective of which research method you use are:

- maintaining your integrity and objectivity during the data collection, data analysis and reporting of findings;
- avoiding deception about why you are undertaking the research, its purpose and how the data collected will be used;
- respecting rights to privacy and not to be exposed to the risk of harm;
- emphasising that participation is voluntary and that participants retain the right to not answer questions that they do not wish to or not provide any data requested. Those involved also retain the right to withdraw;
- achieving consent that is fully informed, considered and freely given. Research without prior fully informed consent is unlikely to receive ethical approval other than in very specific circumstances;
- respecting assurances provided about the confidentiality of data and their anonymity;
- considering the collective interests of individuals and organisations in the way you analyse, use and report the data which they provide;
- complying with legislation and other legal requirements relating to the processing and management of personal and confidential data;
- considering your own personal safety and that of other researchers.

6.5 A number of ethical problems that might emerge are considered in turn, although you may have identified others. You may wish to explore a point made by one of your participants but to do so might lead to harmful consequences for this person where the point

was attributed to him or her. It may be possible for some people who read your work to identify a participating organisation, although you do not actually name it. This may cause embarrassment to the organisation. Individual participants may also be identified by the nature of the comments that you report, again leading to harmful consequences for them. Your report may also lead to action being taken within an organisation that adversely affects those who took part in your research. Finally, others may seek to reuse any survey data that you collect, and this might be used to disadvantage those who provided the data originally.

Get ahead using resources on the companion website at:
www.pearsoned.co.uk/saunders.



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- Test your progress using self-assessment questions.

Chapter 7

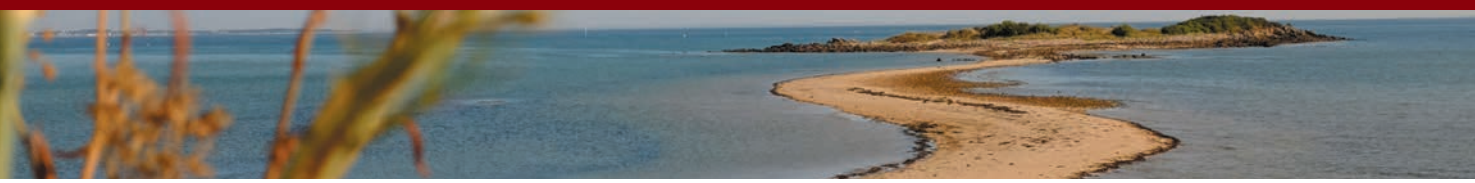


Selecting samples

Learning outcomes

By the end of this chapter you should be able to:

- explain why samples are necessary in business and management research;
- recognise the differences between and utility of probability and non-probability sampling procedures;
- select suitable sampling frames for a variety of research scenarios when using probability sampling;
- calculate actual sample sizes, response rates and levels of confidence when using probability sampling;
- justify your choices of probability sampling procedures for different research questions;
- be aware of a range of probability and non-probability sampling techniques and the possible need to combine techniques within a research project;
- assess the statistical representativeness of your sample when using probability sampling procedures;
- determine a suitable sample size for non-probability sampling;
- justify your choices of non-probability sampling procedures for different research questions;
- recognise the possible need to combine sampling procedures within a research project;
- apply the knowledge, skills and understanding gained to your own research project.



7.1 Introduction

Whatever your research question(s) and objectives, you will need to consider whether you need to select one or more samples. Occasionally, it may be possible to collect and analyse data from every possible case or group member; this is termed a **census**. However, for many research questions and objectives, it will be impossible for you either to collect or to analyse all the potential data available to you, owing to restrictions of time, money and often access. This means you will need to select data for a subgroup or **sample** of all possible cases. Sampling procedures enable you to reduce the amount of data you need to collect by considering only data from a subgroup rather than all possible cases or **elements**. Some research questions will require sample data that can allow you to generalise statistically about all the cases from which your sample has been selected. In the opening vignette you will see how advertisers are expected to be able to substantiate claims about consumers' views by selecting a robust and representative sample for their survey.

Other research questions may not involve such statistical generalisations. To gain an understanding of how people manage their careers, you may select a small sample of company chief executives. For such research your sample selection would be based on the premise that, as these people have reached executive level they have been very successful in managing their own careers, and so will be most likely to be able to offer insights from which you can build understanding. Alternatively, you may adopt a case study strategy using one large organisation and collect your data from a number of employees and managers using unstructured interviews. For this research you will still need to select your case study (sample) organisation and a group (sample) of employees and managers to interview. Consequently, whatever your research question, an understanding of techniques for selecting samples is likely to be very important.

The full set of cases or elements from which a sample is taken is called the **population**. In sampling, the term 'population' is not used in its normal sense, as the full set of cases need not necessarily be people. For research to discover the level of service at Indian restaurants throughout a country, the population from which you would select your sample would be all Indian restaurants in that country. Alternatively, you might need to establish the normal 'range' in miles that can be travelled by electric cars in everyday use produced by a particular manufacturer. Here the population would be all the electric cars in everyday use produced by that manufacturer.

When selecting a sample to study, it should represent the population from which it is taken in a way that is meaningful and which we can justify in relation to answering our research question and meeting our objectives (Becker 1998). If we are using our sample data to infer statistically something about a population, it is important that our sample is sufficiently large to allow such statistical inferences to be made with an acceptable margin of error. In the opening vignette we see how the requirement for advertisers to ensure the claims conveyed in their advertisements are reasonable and can be substantiated, necessitates careful consideration of sample size. We also see (in the UK) the expectation that qualifying text is included in the advertisements to allow claims made to be assessed where the findings may not be statistically significant due to the small sample size.

Interpreting advertisers' claims



milkos/123RF

Advertisers are expected to substantiate claims made in advertisements. If, for example, an advertiser claims 87 per cent of a sample of users of a skin cream said it reduced wrinkles, you might infer that 87 per cent of all that skin cream's users thought the same. Yet, whether the data on which this claim is based are sufficiently robust and representative to allow this (statistical) generalisation depends on the number of consumers from whom data were collected and how that sample of consumers had been selected.

Often, these claims are based on data collected from a sample of consumers using some form of questionnaire. When interpreting these claims, like most consumers, we usually assume the claim made from the sample is applicable to all consumers of that product or service. Not surprising advertisers are expected, often through self-regulation, to ensure there is a reasonable basis for these claims and that they are made on the basis of objective evidence. To support such self-regulation the associated industry bodies in many countries have developed codes of practice. These set out what is considered a reasonable basis and what is objective evidence, some offering guidance about sample requirements.

The UK's advertising self-regularity system is set out in two advertising codes: the *BCAP Code* for broadcast advertising and the *CAP Code* for non-broadcasting advertising (Committee of Advertising Practice 2010; 2014). These are administered by the Advertising Standards Authority and referred to as rules or regulations. Like many systems around the world, these two sets of 'rules' require that advertisers' claims, which are likely to be regarded by consumers as objective, can be substantiated. However, although there is no easily accessible advice on sample size or associated margin of error and level of certainty, a subsequent 'quick guide' (Committee of Advertising Practice 2021) offers useful advice regarding sample size. If the sample size is relatively small so that the findings may not be statistically significant, the guide suggests it is best to include details about the sample in the advertisement. As a consequence, advertisements in the UK containing claims based on a small sample size such as '87 per cent of consumers say it reduces wrinkles*' usually include a 'small print' statement such as '*59 out of 67 consumers surveyed, August 2021'.

In this chapter we start by considering whether there is a need to sample (Section 7.2). Next we offer an overview of the two forms of sampling procedures used: probability and non-probability (Section 7.3). Our discussion of probability sampling considers a range of aspects including the sampling frame suitability (Section 7.4), sample size (Section 7.5), sample selection procedures (Section 7.6) and representativeness (Section 7.7). This is followed by a discussion of non-probability sampling where we consider aspects including sample size (Section 7.8) and sample section procedures (Section 7.9). Although each procedure is discussed separately, for many research projects you will need to use a combination of sampling procedures, some projects involving both probability and non-probability sampling techniques. Where you use a combination of two or more discrete samples, each

selected using either probability or non-probability procedures, this is known as **mixed sampling**. This along with sampling designs that have two or more successive stages using either probability, non-probability or both types of sample selection techniques are known as **multi-stage sampling**, which is discussed in Section 7.10.

7.2 The need to sample

The utility of samples

For some research questions it is possible to collect data from an entire population as it is of a manageable size. However, you should not assume that a census would necessarily provide more useful results than collecting data from a sample. Sampling provides a valid alternative to a census when:

- it would be impracticable for you to survey the entire population due to large size or inaccessibility;
- the act of collecting the data destroys the element for its intended use (such as in crash testing a car);
- your budget constraints prevent you from surveying the entire population;
- your time constraints prevent you from surveying the entire population.

For all research questions where it would be impracticable for you to collect data from the entire population, you need to select a sample. This is equally important whether you are planning to use interviews, questionnaires, observation or some other data collection technique. You might be able to obtain permission to collect data from only two or three organisations. Alternatively, testing an entire population of products to destruction, such as to establish the actual duration of long-life batteries, would be impractical for any manufacturer.

With other research questions it might be theoretically possible for you to collect data from the entire population, but the overall cost would prevent it. It is obviously cheaper for you to collect, prepare for analysis and check data from 300 customers than from 3,000, even though the cost per case for your study (in this example, customer) is likely to be higher than with a census. Your costs will be made up of new costs such as sample selection and the fact that overhead costs such as the questionnaire, interview or observation schedule design and general preparation of data for analysis are spread over a smaller number of cases. Sampling also saves time, an important consideration when you have tight deadlines. The organisation of data collection is more manageable as fewer cases are involved. As you have less data to prepare for analysis or check and then to analyse, the results will be available more quickly.

Although some claim using sampling makes possible a higher overall accuracy than a census, this appears most likely to happen where a researcher using a population fails to consider the implications of non-response, dealing with difficult to reach respondents or their population has been poorly identified. When selecting a sample, such issues are more likely to be considered carefully and addressed. In addition, the smaller number of cases for which you need to collect data means that more time can be spent designing and piloting the means of collecting these data. Collecting data from fewer cases also means that you can collect information that is more detailed. If you are employing people to collect the data (perhaps as interviewers) you can afford higher-quality staff. You can also devote more time to trying to obtain data from more difficult to reach cases so that

bias caused by potential respondents' non-response bias is minimised. Once your data have been collected, proportionally more time can be devoted to checking and testing the data for accuracy prior to analysis. However, one point remains crucial when selecting a sample: it must enable you to answer your research question!

The importance of defining the research population clearly

The sample you select should be related to the population that is highlighted in your research question and objectives. This means that if a research question is about all owners of tablets, then the population is all owners of tablet computers, and the sample selected should be a subset of all those owners. This sample, providing it is selected carefully, will allow conclusions to be drawn about all tablet owners. However, such a population may be difficult to research as it is unlikely all elements or cases will be known to you or easy to access. Consequently, you may redefine the population as something more manageable. This is often a subset of the population and is called the **target population** (Figure 7.1) and is the actual focus or target of your research. For example, rather than defining your population as all owners of tablet computers, you may redefine your target population as all owners of tablets who are studying for a business and management degree at your university. However, business and management students at one university are unlikely to be the same as all tablet owners, and even students from other universities may differ! Consequently, using a sample drawn from this target population of students to find out about all owners of a brand of tablet computer may result in biased or incorrect conclusions. In selecting your sample from this target population, you have narrowed the focus of your research to business and management students at a particular university who own that brand of tablet computer. We discuss this further in subsequent sections.

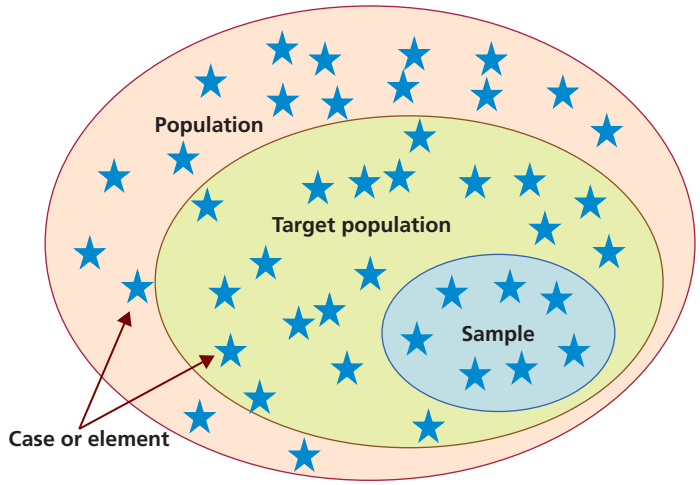


Figure 7.1 Population, target population, sample and individual cases

7.3 An overview of sampling procedures

Sampling techniques available to you can be divided into two types (Figure 7.2):

- probability or representative sampling;
- non-probability sampling.

You choice depends, in part, on how you wish to answer your research question. We illustrate this by looking at two questions that could be answered using either type of sample: 'What job attributes attract people to jobs?' or 'How are tourism companies adapting their services in response to the post-pandemic new norm?'. For either question, if you wish to offer statistical explanations, make statistical estimates or inferences about the target population from your sample or test a theory, you will choose probability sampling. However, if you wish to reveal understandings and insights by offering information rich rather than statistical explanations, where appropriate using reasoned judgements to generalise to theory, you will choose non-probability sampling (Saunders and Townsend 2018). This highlights how non-probability sampling can be used to develop theoretical generalisations based on analytic generalisability, while probability sampling can be used generalise statistically about a target population.

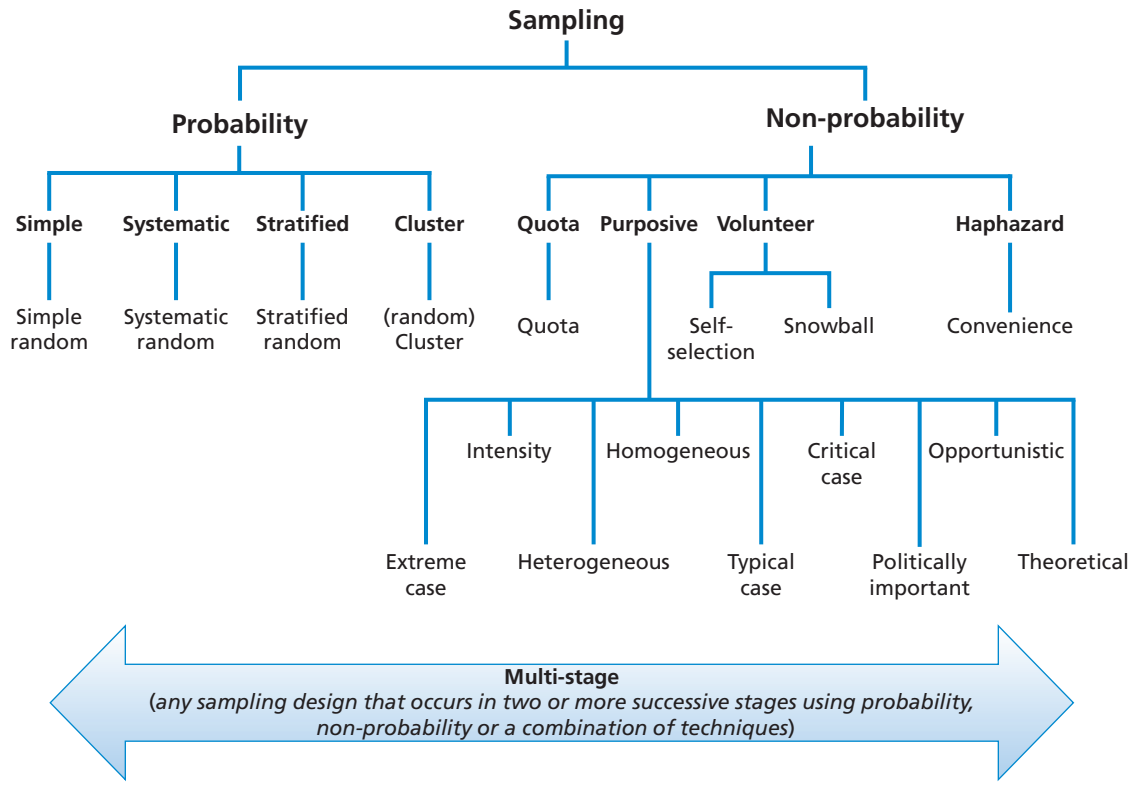


Figure 7.2 Sampling procedures

Probability samples

With **probability sampling** the chance, or probability, of each case being selected from the target population is known and is usually equal for all cases. This means it is possible to answer research questions and to achieve objectives that require you to estimate statistically the characteristics of the target population from the sample. Consequently, probability sampling is often associated with survey and experiment research strategies (Section 5.5).

Probability sampling requires a **sampling frame**, that is a complete list of all the cases in the target population from which your sample will be drawn. Without a sampling frame, you will not be able to select a probability sample and so will have to consider using non-probability sampling. If your research question or objective is concerned with members of a student society, your sampling frame will be the complete membership list for that society. If your research question or objective is concerned with registered childminders in a local area, your sampling frame will be the directory of all registered childminders in this area. Alternatively, if your research question is concerned with organisations in a particular sector, you might create a sampling frame from an existing database of companies available at your university, such as Fame or Amadeus. You would then select your sample from your list.

Probability sampling (or **representative sampling**) is associated most commonly with survey research strategies where you need to make statistical inferences from your sample about a population to answer your research question(s) and to meet your objectives. Once the decision has been taken to use probability sampling, the process can be divided into four stages:

1. Identify a suitable sampling frame (Section 7.4).
2. Decide on a suitable sample size (Section 7.5).
3. Select the most appropriate sampling procedure and select the sample (Section 7.6).
4. Assess the sample's representativeness of the target population. (Section 7.7)

However, for target populations of fewer than 50 cases, Henry (1990) advises against probability sampling. He argues that you should collect data on the entire target population, as the influence of a single extreme case on subsequent statistical analyses is more pronounced than for larger samples.

Non-probability samples

Where you do not have a sampling frame or probability sampling is not appropriate, non-probability sampling is used. With **non-probability sampling**, the probability of each case being selected from the target population is not known and it is impossible to answer research questions or to address objectives that require you to make statistical inferences about the characteristics of the population. You may still be able to generalise to other situations using non-probability samples but will need to make reasoned judgements about the transferability of the findings to other situations.

Non-probability sampling (or **non-random sampling**) provides a range of procedures to select samples, when you do not have a sampling frame or probability sampling may not be appropriate to answering your research question. It is therefore suitable to answering any research question where the focus is on gaining insights and understanding rather than statistical inference. The majority of non-probability sampling procedures (Figure 7.2) include an element of subjective judgement. In the exploratory stages of some research projects, such as a pilot testing a questionnaire, a non-probability sample may be the

most practical, although it will not allow the extent of the problem to be determined. Subsequent to this, probability sampling techniques may be used. Non-probability samples have become far more prevalent with the rapid growth of online questionnaires. For these a likely source of potential respondents is an online panel (Section 7.9) recruited in advance of the research (Baker et al. 2013). For other research projects your research question(s), objectives and choice of research strategy (Sections 2.4, 2.5 and 5.5) may dictate non-probability sampling. To answer your research question(s) and to meet your objectives you may need to undertake an in-depth study that focuses on a small number of cases, perhaps one, selected for a particular purpose. This sample would provide you with an information-rich case study in which you explore your research question and gain particular or theoretical insights.

Once a decision has been made to use non-probability sampling, the process can be divided into overlapping stages:

1. Consider a likely suitable sample size and review as data are collected and analysed (Section 7.8).
2. Select the most appropriate sampling procedure and select the sample (Section 7.9).

7.4 Probability sampling – sampling frame

Obtaining a sampling frame is essential if you are going to use probability sampling. However, as highlighted in research by Edwards et al. (2007), and more recently by Mark and colleagues (Saunders et al. 2017), you need to be aware of the possible problems of using existing databases for your sampling frame. In their work on multinationals in Britain, they found that:

- individual databases are often incomplete;
- the information held about organisations in databases is sometimes inaccurate;
- the information held in databases soon becomes out of date.

This emphasises the importance of ensuring your sampling frame is as complete, accurate and up to date as possible. An incomplete or inaccurate list means that some cases will have been excluded and so it will be impossible for every case in the target population to have a chance of selection. If this is the case you need to state it clearly.

Compiling your own sampling frame

Where no suitable list exists, and you wish to use probability sampling, you will have to compile your own sampling frame (perhaps drawing upon existing lists). It is important to ensure that your sampling frame is valid. You might decide to combine a number of online business directory to create your sampling frame from which to select a sample of typical businesses. However, each business directory will cover only subscribers who pay to be listed, often in one geographical area. Each directory will therefore be biased towards businesses that have chosen to subscribe and not a valid representation of all businesses. If any of your chosen directories are only updated annually, they will be increasingly out of date ('non-current') as the year progresses. In addition, you will need to remove duplicates caused by businesses subscribing to multiple lists! Your final sampling frame will comprise businesses that choose to subscribe when the directories were compiled.

The way you define your sampling frame also has implications regarding the extent to which you can generalise from your sample. As we have already discussed, sampling is

used when it is impracticable or unnecessary to collect data from the entire population. Within probability sampling, by defining the sampling frame you are defining the target population about which you want to generalise. This means that if your sampling frame is a list of all customers of an organisation, strictly speaking you can only generalise, that is, apply statistically the findings based upon your sample, to that target population. Similarly, if your sampling frame is all employees of an organisation (the list being the organisation's payroll) you can only generalise statistically to employees of that organisation. This can create problems, as often we hope that our findings have wider applicability than the target population from which our sample was selected. However, even if your probability sample has been selected from one large multinational organisation, you should not claim that what you have found would also occur in similar organisations. In other words, you should not generalise statistically beyond your sampling frame. Despite this, researchers often do make such claims, rather than placing clear limits on the generalisability of the findings.

Using purchased 'database' lists

An increasing number of organisations specialise in selling databases comprising electronic lists of names, addresses and email addresses. These databases list a wide range of people such as company directors, chief executives, marketing managers, production managers and human resource managers, for public, private and non-profit-making organisations, and can be merged into standard email letters such as those requesting completion of online questionnaires (Section 11.4). Because you pay for the list by the case (named individual), the organisations that provide them usually select your sample. It is therefore important to establish precisely how they will select your sample as well as obtaining an indication of the database's completeness, accuracy and currency (Saunders et al. 2017). For example, when obtaining a list of email addresses don't forget that some people change their Internet service provider and their email address regularly. This means the sampling frame is likely to under-represent this group. More generally, you need to ensure your intended sampling frame is relevant to your target population. Box 7.1 provides a checklist against which to check your sampling frame.



Box 7.1 Checklist

Selecting your sampling frame

- ✔ Are cases listed in the sampling frame relevant to your research topic, in other words does your target population enable you to answer your research question and meet your objectives?
- ✔ How recently was the sampling frame compiled; is it up to date?
- ✔ Does the sampling frame include all cases in the target population; is it complete?
- ✔ Does the sampling frame contain the correct information; is it accurate?
- ✔ Does the sampling frame exclude irrelevant cases; is it precise?
- ✔ For purchased database lists, can you establish and control precisely how the sample will be selected?

7.5 Probability sampling – sample size

Generalisations about target populations from data collected using any probability samples are based on statistical probability. The larger your sample's size the lower the likely error in generalising to the target population. Probability sampling is therefore a compromise between the accuracy of your findings and the amount of time and money you invest in collecting, checking and analysing the data. Your choice of sample size within this compromise is governed by:

- the confidence you need to have in your data – that is, the level of certainty that the characteristics of the data collected will represent the characteristics of the target population;
- the margin of error that you can tolerate – that is, the accuracy you require for any estimates made from your sample;
- the size of the target population from which your sample is being drawn;
- the (statistical) analyses you are going to undertake – in particular, the number of categories into which you wish to subdivide your data, as many statistical techniques have a minimum threshold of data cases (e.g. chi square, Section 12.5).

Given these competing influences, it is not surprising that the final sample size is almost always a matter of judgement as well as of calculation. This is particularly so for cross-national comparative research where samples selection needs to be contextually feasible in different countries and yet still yield usable, valid and comparable data (Parry et al. 2021). In addition, as we discuss in Section 12.5, if your sample is extremely large you may find that while relationships are statistically significant, the practical implications (effect size) of this difference are small (Ellis 2010).

Statistical inference – confidence and margin of error

It is likely that, if you are undertaking statistical analyses on your sample, you will be drawing conclusions from these analyses about the target population from which your sample was selected. This process of coming up with conclusions about a population on the basis of data describing the sample is called **statistical inference** and allows you to calculate how probable it is that your result, given your sample size, could have been obtained by chance. Such probabilities are usually calculated automatically by statistical analysis software. However, it is worth remembering that, providing they are not biased, samples of larger absolute size are more likely to be representative of the target population from which they are drawn than smaller samples and, in particular, the mean (average) calculated for the sample is more likely to equal the mean for the target population. This is known as the **law of large numbers**.

Researchers normally work to a 95 per cent level of certainty. This means that if your sample was selected 100 times, at least 95 of these samples would be certain to represent the characteristics of the target population. The confidence level states the precision of your estimates of the target population as the percentage that is within a certain range or margin of error (Box 7.2). Table 7.1 provides a guide to the different minimum sample sizes required from different sizes of target population given a 95 per cent confidence

Table 7.1 Sample sizes for different sizes of target population at a 95 per cent confidence level (assuming data are collected from all cases in the sample)

Target population size	Sample size for margin of error of . . .			
	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475
750	254	440	571	696
1000	278	516	706	906
2000	322	696	1091	1655
5000	357	879	1622	3288
10 000	370	964	1936	4899
100 000	383	1056	2345	8762
1 000 000	384	1066	2395	9513
10 000 000	384	1067	2400	9595

level for different margins of error. It assumes that data are collected from all cases in the sample (details of the calculation for minimum sample size and adjusted minimum sample size are given in Appendix 2). For most business and management research, researchers are content to estimate the target population's characteristics at 95 per cent certainty to within plus or minus 3 to 5 per cent of its true values. This means that if 45 per cent of your sample are in a particular category then you will be 95 per cent certain that your estimate for the target population, within the same category, will be 45 per cent plus or minus the margin of error – somewhere between 42 and 48 per cent for a 3 per cent margin of error.

As you can see from Table 7.1, the smaller the absolute size of the sample and, to a far lesser extent, the smaller the relative proportion of the target population sampled, the greater the margin of error. Within this, the impact of absolute sample size on the margin of error decreases for larger sample sizes. De Vaus (2014) argues that it is for this reason that many market research companies limit their samples' sizes to approximately 2,000. Unfortunately, from many samples, a 100 per cent response rate is unlikely and so your sample will need to be larger to ensure sufficient responses for the margin of error you require.

Statistical analyses

For many research questions and objectives, the specific statistical analyses (Section 12.5) you need to undertake will determine the threshold sample size for individual categories. In particular, an examination of virtually any statistics textbook (or Sections 12.3 and 12.5) will highlight that, in order to ensure spurious results do not occur, the data analysed

Box 7.2 Focus on research in the news

Coronavirus infection survey to be expanded across UK

ONS to increase testing in England from 28,000 people a fortnight to 150,000 by October

By Clive Cookson and Laura Hughes

England's largest coronavirus infection survey will expand more than fivefold in the next two months to test 150,000 people every fortnight as health experts prepare for a surge of cases with the onset of autumn.

The Office for National Statistics said on Wednesday the initial boost to the sample size from the current level of 28,000 would be in place by October but it planned eventually to involve 400,000 people in England. The statistical agency, which runs the survey with Oxford University, will also extend the project to Scotland, Wales and Northern Ireland.

So far, the ONS survey has been too small to give strong statistical confidence in its findings, beyond a general trend downward in infections from April to June, followed by a slight increase during July and a levelling off so far in August.

Last week the agency said the number of people who had the virus in England was in a range of 19,000 to 40,700 with 95 per cent confidence. This estimate was based on just 58 people in the ONS sample testing positive for the virus over the previous six weeks.

The survey is designed to establish community infection levels, outside care homes and hospitals, and the ONS said the expansion would enable it to make far more accurate estimates, particularly at local level when flare-ups occur.

'Vigilance is key to containing this pandemic and the extra data on the spread of infections and antibodies at local level will be invaluable to the planning of effective local responses,' said Ian Diamond, the UK's national statistician.

Letters are being sent to tens of thousands of households inviting their participation, with north-west England a particular regional priority. 'If you've been approached to take part then please do so,' Sir Ian said. 'You will be helping us all to contain this terrible virus and get on with our lives.'

Participants provide samples from self-administered nose and throat swabs and answer a few short questions during a home visit by a health worker. The swab tests show whether or not people have the virus.

In addition, 20 per cent of participants aged 16 and over provide a blood sample. These tests help determine what proportion of the population has developed antibodies to the virus. Participants will be asked to give further blood monthly for the next year.

If the survey carries on for two years at the planned scale, it will cost around £750m, said Katherine Kent, ONS lead analyst. But the study will be assessed periodically and will be discontinued if it is found no longer to be useful.

FT *Source:* Extract from Cookson, C. and Hughes, L. (2020) 'Coronavirus infection survey to be expanded across UK', FT.com, 19 August. Copyright © 2020 The Financial Times.

must be normally distributed. While the normal distribution is discussed in Chapter 12, its implications for sample size need to be considered here. Statisticians have proved that the larger the absolute size of a sample, the closer its distribution will be to the normal distribution and thus the more robust it will be. This relationship, known as the **central limit theorem**, occurs even if the population from which the sample is drawn is not normally distributed. Statisticians have also shown that a sample size of 30 or more will usually result in a sampling distribution for the mean that is very close to a normal distribution. For this reason, Stutely's (2014) advice of a minimum number of 30 for statistical analyses provides a useful rule of thumb for the smallest number of cases in each category within your overall sample. Where the population in the category is less than 30, and you wish to undertake your analysis at this level of detail, you should normally collect data from all cases in that category.

Response rates

The most important aspect of a probability sample is that it represents the target population. A perfect **representative sample** is one that exactly represents the target population from which it is taken. If 60 per cent of your sample were small service sector companies then, provided the sample was representative, you would expect 60 per cent of the target population to be small service sector companies. You therefore need to obtain as high a response rate as possible to reduce the risk of non-response bias and ensure your sample is representative (Groves and Peytcheva 2008). This is not to say that a low response rate will necessarily result in your sample being biased, just that it is more likely!

In reality, you are likely to have non-responses. Non-respondents are different from the rest of the target population because they are unable or unwilling to be involved in your research for whatever reason. Consequently, your respondents will not be representative of the target population and the data you collect may be biased. Bias resulting from respondents differing in meaningful ways from non-respondents is known as **non-response bias**. In addition, each non-response will necessitate an extra respondent being found to reach the required sample size, increasing the cost of your data collection.

You should therefore collect data on refusals to respond to both individual questions and entire questionnaires or interview schedules to check for non-response bias (Section 12.2) and report this briefly in your project report. For returned questionnaires or structured interviews, four levels of non-response can be reported with regard to the proportion of applicable questions that have been answered (American Association for Public Opinion Research 2016):

- **complete refusal**: none of the questions answered;
- **break-off**: less than 50 per cent of all questions answered other than by a refusal or no answer (this therefore includes complete refusal);
- **partial response**: 50 per cent to 80 per cent of all questions answered other than by a refusal or no answer;
- **complete response**: over 80 per cent of all questions answered other than by a refusal or no answer.

Non-response is due to four interrelated problems:

- refusal to respond;
- ineligibility to respond;
- inability to locate respondent;
- respondent located but unable to make contact.

The most common reason for non-response is your respondent refuses to answer all the questions or be involved in your research but does not give a reason. Such non-response can be minimised by paying careful attention to the methods used to collect your data (Chapters 9, 10 and 11). Alternatively, some selected respondents may not meet your research requirements and so will be **ineligible** to respond. Non-location and non-contact create further problems; the fact that these respondents are **unreachable** means they will not be represented in the data you collect.

As part of your research report, you will need to include your **response rate**. Neuman (2014) suggests that when you calculate this you should include all eligible respondents:

$$\text{total response rate} = \frac{\text{total number of responses}}{\text{total number in sample} - \text{ineligible}}$$

This he calls the **total response rate**. A more common way of doing this excludes ineligible respondents and those who, despite repeated attempts (Sections 10.7 and 11.8), were unreachable. This is known as the **active response rate**:

$$\text{active response rate} = \frac{\text{total number of responses}}{\text{total number in sample} - (\text{ineligible} + \text{unreachable})}$$

Examples of calculations of the total response rate and the active response rate are given in Box 7.3.

Even after ineligible and unreachable respondents have been excluded, it is probable that you will still have some non-responses. You therefore need to be able to assess how representative your data are and to allow for the impact of non-response in your calculations of sample size. These issues are explored in subsequent sections.



Box 7.3
Focus on student research

Calculation of total and active response rates

Ming had decided to collect data from people who had left his company's employment over the past five years by using a web questionnaire. He obtained a list of the 1,034 people who had left over this period (the total population) and selected a 50 per cent sample. Unfortunately, he could obtain current email addresses for only 311 of the 517 ex-employees who made up his total sample. Of these 311 people who were potentially reachable, he obtained a response from 147. In addition, his list of people who had left his company was inaccurate, and nine of those he contacted were ineligible to respond, having left the company over five years earlier.

$$\text{His total response rate} = \frac{147}{517 - 9} = \frac{147}{508} = 28.9\%$$

$$\text{His active response rate} = \frac{147}{311 - 9} = \frac{147}{302} = 48.7\%$$

Estimating response rates and sample size

With all probability samples, it is important that your sample size is large enough to provide you with the necessary confidence in your data. The margin of error must be within acceptable limits, and you must ensure that you will be able to undertake your analysis at the level of detail required. You therefore need to estimate the likely response rate – that is, the proportion of cases from your sample who will respond or from which data will be collected – and increase the sample size accordingly. Once you have an estimate of the likely response rate and the minimum or the adjusted minimum sample size, the actual sample size you require can be calculated using the following formula:

$$n^{a} = \frac{n \times 100}{re\%}$$

where n^{a} is the actual sample size required,
n is the minimum (or adjusted minimum) sample size (see Table 7.1 or Appendix 2),
$re\%$ is the estimated response rate expressed as a percentage.

This calculation is shown in Box 7.4.

If you are collecting your sample data from a secondary source (Section 8.2) within an organisation that has already granted you access, for example a database recording customer complaints, your response rate should be virtually 100 per cent. Your actual sample size will therefore be the same as your minimum sample size.

In contrast, estimating the likely response rate from a sample to which you will be sending a questionnaire or interviewing is more difficult. One way of obtaining this estimate is to consider the response rates achieved for similar surveys already undertaken, basing your estimate on these. Alternatively, you can err on the side of caution. For general business and management studies involving individuals or organisations' representatives, response rates of approximately 50 per cent and 35 to 40 per cent respectively are reasonable (Baruch and Holtom 2008). However more recent research suggests that overall response rates are declining (Chidlow et al. 2015).



Box 7.4 Focus on student research

Calculation of actual sample size

Jan was a part-time student employed by a large manufacturing company. He had decided to email a questionnaire to the company's customers and calculated that an adjusted minimum sample size of 439 was required. From previous questionnaires that his company had used to collect data from customers, Jan knew the likely response rate would be approximately 30 per cent. Using these data he could calculate his actual sample size:

$$n^{a} = \frac{439 \times 100}{30}$$

$$= \frac{43900}{30}$$

$$= 1463$$

Jan's actual sample, therefore, needed to be 1,463 customers. The likelihood of 70 per cent non-response meant that Jan needed to include a means of checking his sample was representative when he designed his questionnaire.

Response rates can vary considerably when collecting primary data. Reviewing literature on response rates for questionnaires, Mellahi and Harris (2016) noted wide variation and no consensus as to what was acceptable. Noting response rates of between 1 per cent and 100 per cent in published Business and Management research they offer general guidelines dependent upon discipline suggesting mean response rates of 35 per cent for International Business and Marketing, while Human Resource Management and General Management typically achieve 50 per cent. More recent work by Pielsticker and Hiebl (2020) reveals that for family businesses survey research response rates are, at approximately 20 per cent, even lower.

Looking at mode of questionnaire delivery, Neuman (2014) suggests response rates of between 10 and 50 per cent for postal questionnaire surveys and up to 90 per cent for face-to-face interviews. Our examination of response rates to recent business surveys reveals rates as low as 10–20 per cent for web and postal questionnaires, an implication being that respondents' questionnaire fatigue was a contributory factor! With regard to telephone questionnaires, response rates have fallen from 36 per cent to less than 9 per cent, due in part to people using answering services to screen calls (Dillman et al. 2014). Fortunately, a number of different interventions, depending on your data collection method, can be used to enhance your response rate. These are discussed with the data collection method in the appropriate sections (Sections 10.3 and 11.5).

Reporting sample selection and response rates

General suggestions regarding reporting sample selection in your project report are offered in the checklist in Box 14.7. When reporting response rates it is helpful to state whether the questionnaire or structured interview was administered to respondents (answered as part of their job, role or studies) or truly voluntary, as well as providing sufficient detail regarding how the sample were selected and the questionnaire distributed and returned. The aspects to include when reporting questionnaire response rates are summarised in Box 7.5 as a checklist.



Box 7.5 Checklist

Reporting questionnaire response rates

- ✔ Was the questionnaire administered or truly voluntary?
- ✔ How many respondents were sent the questionnaire?
- ✔ How was the questionnaire distributed?
- ✔ How was the questionnaire returned?
- ✔ Was prior consent obtained from respondents?
- ✔ How many questionnaires were returned?
- ✔ Of those returned, how many were complete responses, and how many were partial responses?
- ✔ What were the reasons (if known) for non-response?
- ✔ Where different populations received a questionnaire, what were there differences (if any) in response rates?
- ✔ What interventions (if any) were used to increase response rates?
- ✔ Where response rates differ from likely norms, what are possible reasons for this?

Sources: Baruch and Holtom (2008); American Association for Public Opinion Research 2016.

7.6 Probability sampling – procedures

Having chosen a suitable sampling frame and established the actual sample size required, you need to select the most appropriate sampling procedure to obtain a representative sample. Four main procedures can be used when selecting a probability sample (Figure 7.3):

- simple random;
- systematic random;
- stratified random;
- cluster.

Your choice of probability sampling procedure depends on your research question(s) and your objectives. Subsequently, your need for face-to-face contact with respondents, and the geographical area over which the population is spread, further influence your choice of probability sampling procedure (Figure 7.3). The structure of the sampling frame, the size of sample you need and, if you are using a research assistant, the ease with which the procedure may be explained will also influence your decision. The impact of each of these is summarised for probability sampling procedures in Table 7.2.

Simple random sampling

Simple random sampling (often called just **random sampling**) involves you selecting the sample at random from the sampling frame using a spreadsheet's random number generator function or random number tables. To do this you:

1. Number each of the cases in your sampling frame with a unique number. The first case is numbered 1, the second 2 and so on.
2. Select cases using random numbers such as those generated by a spreadsheet (Table 7.3) until your actual sample size is reached.

Starting with your first random number, you use this and subsequent random numbers in the order they were generated to select the cases (elements) until your sample size is reached. If the same random number is generated more than once it must be disregarded as you need different cases. This means that you are not putting each case's number back into the sampling frame after it has been selected and is termed 'sampling without replacement'. If a number is selected that is outside the range of those in your sampling frame, you simply ignore it and continue reading off numbers until your sample size is reached (Box 7.6).

Random numbers allow you to select your sample without bias. The sample selected, therefore, can be said to be representative of the target population. However, it is not a perfect miniature replica of this population, since it still possesses sampling error. In addition, the selection that simple random sampling provides is more evenly dispersed throughout the target population for samples of more than a few hundred cases. The first few hundred cases selected using simple random sampling normally consist of groups of cases whose numbers are close together followed by a gap and then a further grouping. For more than a few hundred cases, this pattern occurs far less frequently. Because of the technique's random nature it is possible that a chance occurrence of such patterns will result in certain parts of a population being over- or under-represented.

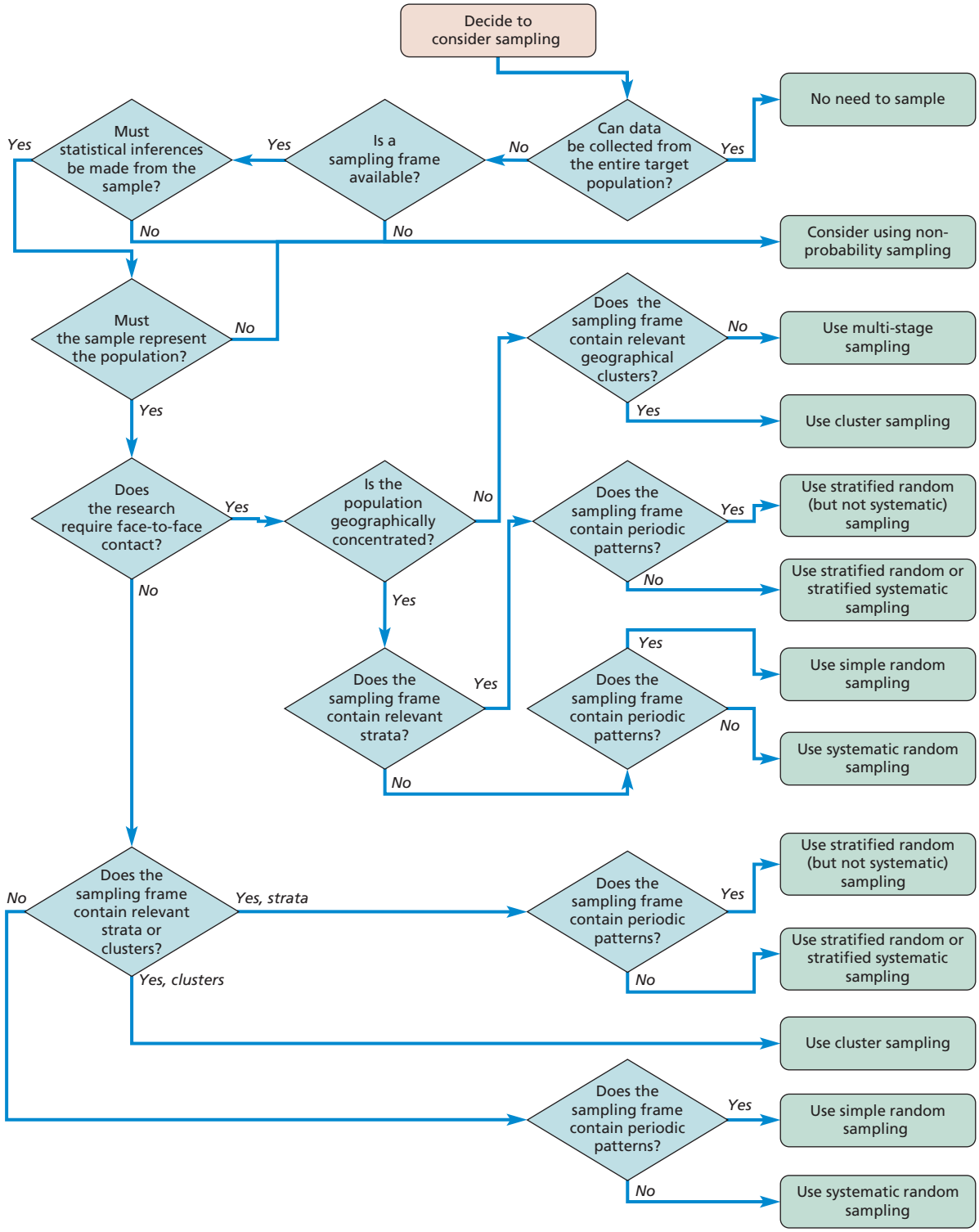


Figure 7.3 Selecting a probability sampling procedure

Note: Simple random sampling ideally requires a sample size of over a few hundred

Table 7.2 Impact of various factors on choice of probability sampling procedures

	Factor					
Sample technique	**Sampling frame required**	**Size of sample needed**	**Geographical area to which suited**	**Relative cost**	**Easy to explain to support workers?**	**Advantages compared with simple random**
Simple random	Accurate and easily accessible	Better with over a few hundred	Concentrated if face-to-face contact required, otherwise does not matter	High if large sample size or sampling frame not computerised	Relatively difficult to explain	
Systematic random	Accurate, easily accessible and not containing periodic patterns. Actual list not always needed	Suitable for all sizes	Concentrated if face-to-face contact required, otherwise does not matter	Low	Relatively easy to explain	Normally no difference
Stratified random	Accurate, easily accessible, divisible into relevant strata (see comments for simple random and systematic random as appropriate)	See comments for simple random and systematic random as appropriate	Concentrated if face-to-face contact required, otherwise does not matter	Low, provided that lists of relevant strata available	Relatively difficult to explain (once strata decided, see comments for simple random and systematic random as appropriate)	Better comparison and hence representation across strata. Differential response rates may necessitate reweighting
Cluster	Accurate, easily accessible, relates to relevant clusters, not individual population members	As large as practicable	Dispersed if face-to-face contact required and geographically based clusters used	Low, provided that lists of relevant clusters available	Relatively difficult to explain until clusters selected	Quick but reduced precision

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2021

Table 7.3 Extract of spreadsheet generated random numbers between 1 and 5011

4306	1966	1878	4428	3571	62	838	4881	3045	4192
4582	4543	457	4151	1208	2014	3891	111	4197	1455
1303	2463	151	1236	2822	4539	1970	3788	3070	967
1547	139	3175	3773	3883	2161	209	2364	2324	3849
2009	4352	4685	4820	1386	4990	786	4516	2851	2571
3589	539	2809	2065	1548	661	4506	788	4082	1450
4311	4827	3137	3000	69	1925	393	42	1032	3450
1605	1105	4949	1791	2761	879	709	221	2894	3232

Simple random sampling is best used when you have an accurate and easily accessible sampling frame that lists the target population, preferably in electronic format. While you can often obtain these for employees within organisations or members of clubs or societies, adequate lists are less likely to be available for organisations. If your population covers a large geographical area, random selection means that selected cases are likely to be dispersed throughout the area. Consequently, this form of sampling is not suitable if collecting data over a large geographical area using a method that requires face-to-face contact, owing to the associated high travel costs. Simple random sampling would still be suitable for a geographically dispersed area if you used an alternative procedure of collecting data such as Internet or postal questionnaires or telephone or Internet mediated interviewing (Chapter 11).



Box 7.6 Focus on student research

Simple random sampling

Jemma was undertaking her work placement at a large supermarket, where 5,011 of the supermarket's customers used the supermarket's online shopping and home delivery scheme. She was asked to interview customers and find out what aspects they liked and disliked. As there was insufficient time to interview all of them she decided to us a structured telephone interview. Her calculations revealed that to obtain acceptable levels of confidence and accuracy she needed an actual sample size of approximately 360 customers. Assuming a response rate of 30 per cent, this meant she needed to contact 1,200 Internet customers. She decided to select them using simple random sampling.

Having obtained a list of Internet customers and their telephone numbers, Jemma gave each of the cases (customers) in this sampling frame a unique number starting with 1 through to 5,011.

Using her spreadsheet's random number generator function, Jemma generated a series of random numbers between 1 and 5,011. The first random number generated was 4,306 (shown in bold and shaded in Table 7.3). Starting with this number she used the random numbers in the order they were generated (in this example continuing along the line) to select her cases:

4306 1966 1878 4428 3571 62 838 4881 3045 . . .

She continued in this manner until 1,200 different cases had been selected, ensuring that where a random number was repeated, the associated case was disregarded and the cases selected therefore all different. These 1,200 cases selected formed her random sample, of whom she expected 360 to participate.

Sampling frames used for computer-aided telephone interviewing (CATI) have, in the main, been replaced by random digital dialling. Although selecting particular within-country area dialling codes for land-line telephone numbers provides a chance to reach any household within that area represented by that code that has a landline telephone, regardless of whether or not the number is ex-directory, care must be taken. Such a sample excludes households who use only mobile telephones as their dialling codes are network operator rather than geographical area specific (Tucker and Lepkowski 2008).

Systematic random sampling

Systematic random sampling (often called just **systematic sampling**) involves you selecting the sample at regular intervals from the sampling frame. To do this you:

1. Number each of the cases in your sampling frame with a unique number. The first case is numbered 1, the second 2 and so on.
2. Select the first case using a random number.
3. Calculate the sampling fraction.
4. Select subsequent cases systematically using the sampling fraction to determine the frequency of selection.

To calculate the **sampling fraction** – that is, the proportion of the target population that you need to select – you use the formula:

$$\text{Sampling fraction} = \frac{\text{actual sample size}}{\text{total population}}$$

If your sampling fraction is 1/3 you need to select one in every three cases – that is, every third case from the sampling frame. Unfortunately, your calculation will usually result in a more complicated fraction. In these instances it is normally acceptable to round your population down to the nearest 10 (or 100) and to increase your minimum sample size until a simpler sampling fraction can be calculated.

On its own, selecting one in every three would not be random as every third case would be bound to be selected, whereas those between would have no chance of selection. To overcome this, a random number is used to decide where to start on the sampling frame. If your sampling fraction is 1/3 the starting point must be one of the first three cases. You therefore generate a random number (in this example a one-digit random number between 1 and 3) as described earlier and use this as the starting point. Once you have selected your first case at random you then select, in this example, every third case until you have gone right through your sampling frame (Box 7.7).

In some instances it is not necessary to actually construct a list for your sampling frame. For Internet questionnaires, such as pop-up questionnaires that appear in a window on the computer screen, there is no need to create an actual list if an invitation to participate is triggered at random. For systematic random sampling, a random selection could be triggered by a mechanism such as every tenth visitor to the website over a specified time period (Bradley 1999).

Despite the advantages, you must be careful when using existing lists as sampling frames. You need to ensure that the lists do not contain periodic patterns. Let us assume a high street bank needs you to administer a questionnaire to a sample of customers with joint bank accounts. A sampling fraction of 1/2 means that you will need to select every second customer on the list. The names on the customer lists, which you intend to use



Box 7.7 Focus on student research

Systematic random sampling

Stefan worked as a receptionist in a dental surgery with approximately 1,500 patients. He wished to find out their attitudes to the new automated appointments scheme. As there was insufficient time and money to collect data from all patients using a questionnaire he decided to email a hyperlink for the web questionnaire to a sample. The calculation of sample size revealed that to obtain acceptable levels of confidence and accuracy he needed an actual sample size of approximately 300 patients. Having obtained ethical approval he generated an alphabetical list of all registered patients from the patient record system for his sampling frame and selected his sample systematically.

First, he calculated the sampling fraction:

$$\frac{300}{1500} = \frac{1}{5}$$

This meant that he needed to select every fifth patient from the sampling frame. Next, he used a random number to decide where to start on his sampling frame. As the sampling fraction was 1/5, the starting point had to be one of the first five patients. He therefore selected a one-digit random number between 1 and 5.

Once he had selected his first patient at random he continued to select every fifth patient until he had gone right through his sampling frame (the list of patients). As the random number Stefan selected was 2, the selected the following patient numbers:

2 7 12 17 22 27 32 37 . . .

and so on until 300 patients had been selected.

as the sampling frame, are arranged alphabetically by joint account, with predominantly males followed by females (Table 7.4). If you start with a male customer, the majority of those in your sample will be male. Conversely, if you start with a female customer, the majority of those in your sample will be female. Consequently, your sample will be biased (Table 7.4). Systematic random sampling is therefore not suitable without reordering or stratifying the sampling frame (discussed later).

Unlike simple random sampling, systematic random sampling works equally well with a small or large number of cases. However, if your target population covers a large geographical area, the random selection means sample cases are likely to be dispersed throughout the area. Consequently, systematic random sampling is suitable for geographically dispersed cases only if you do not require face-to-face contact when collecting your data.

Table 7.4 The impact of periodic patterns on systematic random sampling

Number	Customer	Sample	Number	Customer	Sample
1	Mr J. Lewis	✓	7	Mr J. Smith	✓
2	Mrs P. Lewis	*	8	Mrs K. Smith	*
3	Mr T. Penny	✓	9	Mr R. Thompson	✓
4	Mrs J. Penny	*	10	Ms M. Wroot	*
5	Mr A. Saunders	✓	11	Mr J. Whalley	✓
6	Mrs C. Saunders	*	12	Mr C. Simon	*

✓ Sample selected if you start with 1. * Sample selected if you start with 2.

Stratified random sampling

Stratified random sampling is a modification of random sampling in which you divide the target population into two or more relevant and significant strata based on one or a number of attributes relevant to your research question and objectives. In effect, your sampling frame is divided into a number of subsets. A random sample (simple or systematic) is then drawn from each of the strata. Consequently, stratified random sampling shares many of the advantages and disadvantages of simple random or systematic random sampling.

Dividing the population into a series of relevant strata means that the sample is more likely to be representative, as you can ensure that each of the strata is represented proportionally within your sample. However, it is only possible to do this if you are aware of, and can easily distinguish, significant strata in your sampling frame. In addition, the extra stage in the sampling procedure means that it is likely to take longer, to be more expensive and to be more difficult to explain than simple random or systematic random sampling.

In some instances, as pointed out by De Vaus (2014), your sampling frame will already be divided into strata. A sampling frame of employee names that is in alphabetical order will automatically ensure that, if systematic random sampling is used (discussed earlier), employees will be sampled in the correct proportion to the letter with which their name begins. Similarly, membership lists that are ordered by date of joining will automatically result in stratification by length of membership if systematic random sampling is used. However, if you are using simple random sampling or your sampling frame contains periodic patterns, you will need to stratify it. To do this you:

1. Choose the stratification variable or variables.
2. Divide the sampling frame into the discrete strata.
3. Number each of the cases within each stratum with a unique number, as outlined earlier.
4. Select your sample using either simple random or systematic random sampling, as outlined earlier.

The stratification variable (or variables) chosen should represent the discrete characteristic (or characteristics) for which you want to ensure correct representation within the sample (Box 7.8).

Samples can be stratified using more than one characteristic. You may wish to stratify a sample of an organisation's employees by both department and salary grade. To do this you would:

1. Divide the sampling frame into the discrete departments.
2. Within each department divide the sampling frame into discrete salary grades.
3. Number each of the cases within each salary grade within each department with a unique number, as outlined earlier.
4. Select your sample using either simple random or systematic random sampling, as outlined earlier.

In some instances the relative sizes of different strata mean that, in order to have sufficient data for analysis, you need to select larger samples from the strata with smaller target populations. Here the different sample sizes must be taken into account when aggregating data from each of the strata to obtain an overall picture. More sophisticated statistical analysis software packages enable you to do this by differentially weighting the responses for each stratum (Section 12.2).

Box 7.8 Focus on student research

Stratified random sampling

Dilek worked for a major supplier of office supplies to public and private organisations. As part of her research into her organisation's customers, she needed to ensure that both public- and private-sector organisations were represented correctly. An important stratum was, therefore, the sector of the organisation. Her sampling frame was therefore divided into two discrete strata: public sector and private sector. Within each stratum, the individual cases were then numbered (see below).

She decided to select a systematic random sample. A sampling fraction of 1/4 meant that she needed to select every fourth customer on the list. As indicated by the ticks (✓), random numbers were generated to select the first case in the public sector (2) and private sector (4) strata. Subsequently, every fourth customer in each stratum was selected.

Public sector stratum			Private sector stratum		
Number	**Customer**	**Selected**	**Number**	**Customer**	**Selected**
1	Anyshire County Council		1	ABC Automotive manufacturer	
2	Anyshire Hospital Trust	✓	2	Anytown printers and bookbinders	
3	Newshire Army Training Barracks		3	Ben Toy Company	
4	Newshire Police Force		4	Jane's Internet Flower Shop	✓
5	Newshire Housing		5	Multimedia Productions	
6	St Peter's Secondary School	✓	6	Roger's Consulting	
7	University of Anytown		7	The Paperless Office	
8	West Anyshire Council		8	U-need-us Ltd	✓

Cluster sampling

Cluster sampling (sometimes known as **one-stage cluster sampling**) is, on the surface, similar to stratified random sampling as you need to divide the target population into discrete groups prior to sampling (Latpate et al. 2021). The groups are termed clusters in this form of sampling and can be based on any naturally occurring grouping. For example, you could group your data by type of manufacturing firm or geographical area (Box 7.9).

For cluster sampling, your sampling frame is the complete list of clusters rather than a complete list of individual cases within the population. You then select a few clusters, normally using simple random sampling. In one-stage cluster sampling, data are collected from every case within the selected clusters. For two-stage cluster sampling, some other form of sampling is used to select cases from those clusters selected at stage one. One-stage cluster-sampling has three main steps:



Box 7.9 Focus on student research

Cluster sampling

Ceri needed to select a sample of firms from which to collect data using an interviewer completed face-to-face questionnaire about the workspace adaptations to protect workers due to the pandemic. As she had limited resources with which to pay for travel and other associated data collection costs, she decided to collect data from firms in four geographical areas selected from a cluster grouping of local administrative areas. A list of all local administrative areas formed her sampling frame. Each of the local administrative areas (clusters) was given a unique number, the first being 1, the second 2 and so on. The four sample clusters were selected from this sampling frame of local administrative areas using simple random sampling.

Ceri's sample was all firms within the selected clusters. She decided that the appropriate directories could probably provide a suitable list of all firms in each cluster.

1. Choose the cluster grouping for your sampling frame.
2. Number each of the clusters with a unique number. The first cluster is numbered 1, the second 2 and so on.
3. Select your sample of clusters using some form of random sampling, as discussed earlier.

Selecting clusters randomly makes cluster sampling a probability sampling technique. Despite this, the technique normally results in a sample that represents the target population less accurately than stratified random sampling. Restricting the sample to a few relatively compact geographical sub-areas (clusters) maximises the amount of data you can collect using face-to-face methods within the resources available. However, it may also reduce the representativeness of your sample. For this reason you need to maximise the number of sub-areas to allow for variations in the target population within the available resources. Your choice is between a large sample from a few discrete subgroups and a smaller sample distributed over the whole group. It is a trade-off between the amount of precision lost by using a few subgroups and the amount gained from a larger sample size.

7.7 Probability sampling – representativeness

It is often possible to compare data you collect from your sample with data from another source for the population, such as data contained in an 'archival' database. For example, you can compare data on the age and socioeconomic characteristics of respondents in a marketing survey with these characteristics for the population in that country as recorded by the latest national census of population. If there is no statistically significant difference, then the sample is representative with respect to these characteristics.

When working within an organisation, comparisons can also be made. In a questionnaire Mark sent to a sample of employees in a large UK organisation, he asked closed questions about salary grade, gender, length of service and main place of work. Possible responses to each question were designed to provide sufficient detail to compare the characteristics of the sample with the characteristics of the entire population of employees as recorded by the organisation's Human Resources (HR) database. At the same time he kept the categories sufficiently broad to preserve, and to be seen to preserve, the anonymity of individual respondents. The two questions on length of service and salary grade from a questionnaire he developed illustrate this:

37 How long have you worked for **organisation's name?**

less than 1 year ❑ 1 year to less than 3 years ❑ 3 or more years ❑

38 Which one of the following best describes your salary grade?

Clerical (grades 1–3)	❑	Management (grades 9–11)	❑
Supervisory (grades 4–5)	❑	Senior management (grades 12–14)	❑
Professional (grades 6–8)	❑	Other (please say)	❑

Using the Kolmogorov test (Section 12.5), Mark found there was no statistically significant difference between the proportions of respondents in each of the length of service groups and the data obtained from the organisation's HR database for all employees. This meant that the sample of respondents was representative of all employees with respect to length of service. However, those responding were (statistically) significantly more likely to be in professional and managerial salary grades than in technical, administrative or supervisory salary grades. It is therefore important to discuss the representativeness of your findings when reporting how the sample was selected (Box 14.7).

Representativeness of samples can be assessed in a variety of other ways (Rogelberg and Stanton 2007). Those our students have used most often, in order of quality of assessment of possible bias, include:

- replicating your findings using a new sample selected using different sampling techniques, referred to as 'demonstrate generalisability';
- resurveying non-respondents, the 'follow-up approach';
- analysing whether non-response was due to refusal, ineligibility or some other reason through interviews with non-respondents, known as 'active non-response analysis';
- comparing late respondents' responses with those from early respondents, known as 'wave analysis'.

In relation to this list, the quality of the assessment of bias provided by archival analysis, as outlined earlier, is similar to that provided by the follow-up approach and active non-response analysis.

7.8 Non-probability sampling – sample size

For all non-probability sampling procedures, other than for quota samples (which we discuss later), the issue of sample size is not so much about how many cases need to be selected as which cases need to be selected (Hammersley 2015). Crucial is the logical relationship between your sample selection procedure and the purpose and focus of your research (Figure 7.4); the sample selected being used, for example, to illustrate a particular aspect or to make generalisations to theory rather than about a population (Box 7.10).

Often a case study strategy uses a sample of one or two case studies to explore a particular phenomenon or institution in depth (Lee and Saunders 2017). Data are then collected from all participants or from some form of sample of participants for these case studies. Your sample size is therefore dependent on your research question(s) and objectives – in particular, what you need to find out, what will be useful, what will have credibility and what can be done within your available resources (Patton 2015). This is particularly so where you are intending to collect qualitative data using participant observation, semi-structured or unstructured interviews (Chapters 9 and 10). The understanding and insights that you will gain from your data will be more to do with whether it enables you to develop



Box 7.10 Focus on management research

Volunteer sampling

In their 2019 *Journal of Industrial Relations* article Goods and Colleagues (Goods et al. 2019) used a qualitative industry case study design to explore job quality in the food-delivery sector of the Australian gig economy. Within this their aim was to make sense of workers' experiences in the wider debates concerning the future of work, rather than identifying the size and scale of such work. A sampling decision was made to interview riders operating on the Deliveroo and UberEATS platforms in Melbourne and Perth, these sites being the two locations where the research team were located.

Fifty-eight participants were recruited using a combination of methods including street intercepts, riders were 'on-call' and available for work but not actively engaged being interviewed while they waited for work; online recruitment initiatives, through which participants self-selected; and snowball sampling, for example those recruited through street intercepts providing further referrals.

Drawing on these workers' accounts of economic security, autonomy and enjoyment to assess job quality they Goods et al. (2019: 502) argue 'the gig economy is a new juncture in capitalist production, the consequences of which need to be taken seriously'.

a fruitful analytic argument (Hammersley 2015), and your data collection and analysis skills than with the size of your sample (Patton 2015).

In addressing 'how many are likely to be needed', many research textbooks simply recommend continuing to collect qualitative data, such as by conducting additional interviews, until **data saturation** is reached: in other words, until the additional data collected provide little, if any, new information or suggest new themes. In relation to this, Francis et al.(2010), suggest continuing to collect data to for three more interviews to ensure saturation has definitely been reached. However, while some consider saturation to be crucial (Guest et al. 2006) to establishing how many interviews or observations are required; others note that not reaching saturation only means the phenomenon has still to be fully explored and that the findings are still valid (O'Reilly and Parker 2013). Saturation is also inappropriate for some research questions such as, for example, where research is to establish whether something is possible. Not surprisingly Sim et al. (2018) note determining the sample size for interpretative qualitative research is problematic.

Despite this, we believe it is possible to offer guidance regarding likely sample sizes to help in planning your data collection when using observations or interviews. Mark (Saunders 2012) summarises the limited guidance available as between four and 12 participants for a homogenous and 12 and 30 participants for a heterogeneous group. This he notes differs between groups, research strategies and complexities and is dependent upon the research question. His more recent research on practices in published organisation and workplace research (Saunders and Townsend 2016), while recognising that for some research purposes a sample of one can be sufficient, offers guidance on credible sample sizes when planning qualitative interviews. This is summarised in Table 7.5.

Reporting data saturation

Few of the academic research papers you read will mention data saturation and, of those that do, few actually provide evidence of when data saturation was reached. One way of providing evidence is to record for each additional case or element from which data were

Table 7.5 Non-probability sample size norms when using qualitative interviews

Purpose	Sample size norm
Planning research where participants are from a single organisation or will be analysed as a single group	30
Planning research where participants are from multiple organisations or will be analysed in multiple groups	50
Overall number likely to be considered sufficient	15–60

Source: Developed from Saunders and Townsend (2016)

Table 7.6 Demonstrating data saturation

Case number	Number of new themes coded
1	10
2	13
3	1
4	0
5	2
:	:
27	1
28	0
29	0
30	0

collected, whether any new information was provided or new themes or insights suggested. To show this you can create a table listing for each case how many new themes were generated when the data were coded. In Table 7.6 data collected from the first interviewee (Case 1) revealed 10 new themes. An additional 13 new themes were revealed by the second interviewee (Case 2). Subsequent interviewees revealed either one, two or no new themes. However, it was not until the 30th interview that there had been three interviews in a row from which no new themes were suggested.

Reporting sample selection

General suggestions regarding reporting sample selection in your project report are offered in the Checklist in Box 14.7. However, when discussing the final non-probability sample from which your data were collected, it can be helpful to provide details about the sample and outline how their characteristics relate to your research question and objectives. Increasingly such details are supported by a table or appendix in the project report, listing each case or element in the sample and providing sufficient detail to show how they relate to the research question while still preserving participants' anonymity (Box 7.11).

Box 7.11 Focus on student research

Reporting non-probability sample selection

Idris's research project was concerned with the development of collaborative relationships between university business schools and small and medium-sized enterprises. In his project report methodology he outlined his sample selection:

> After obtaining ethical approval I selected purposively a maximum variation sample comprising three small and three medium-sized service sector enterprises involved in collaborative research projects with the university. Subsequently 10 SME and 10 university knowledgeable participants were selected from those involved in these collaborations to provide diverse perspectives, 8 SME and all university participants agreeing to take part. In table 1 (below) informants are identified by an alphanumeric code. For SMEs this comprises the letter S (e.g. S1 for the first SME) followed by whether their involvement was as a director (d) or manager (m). University participants involved in these and other collaborative projects are identified by an alphanumeric code comprising the letter U and whether the involvement was as a student (s), academic (a) or professional (p) staff member; and where needed a number distinguished between them.

Table 1 Research participants*

Code	No. of employees	SME's engagement with university/Informant's engagement with SMEs	Informant's role
S1d	220	Student consultancy projects	Managing Director
S1m	220	Student consultancy projects	Operations Director
S2d	30	Product development	Managing Director
:	:	:	:
Ua	n/a	Consultancy project module leader, supervise projects	Lecturer
Us	n/a	Group consultancy project member	Undergraduate student
Us	n/a	Group consultancy project member	Master's student
:	:	:	:

*In Idris's actual project report all participants were listed in this table

7.9 Non-probability sampling – procedures

Alongside considering the likely sample size, you also need to select the most appropriate sampling procedure to enable you to answer your research question from the range of non-probability sampling procedures available (Figure 7.4). At one end of this range is quota sampling, which, like probability samples, tries to represent the total population. At the other end of this range is haphazard sampling, based on the need to obtain a sample as

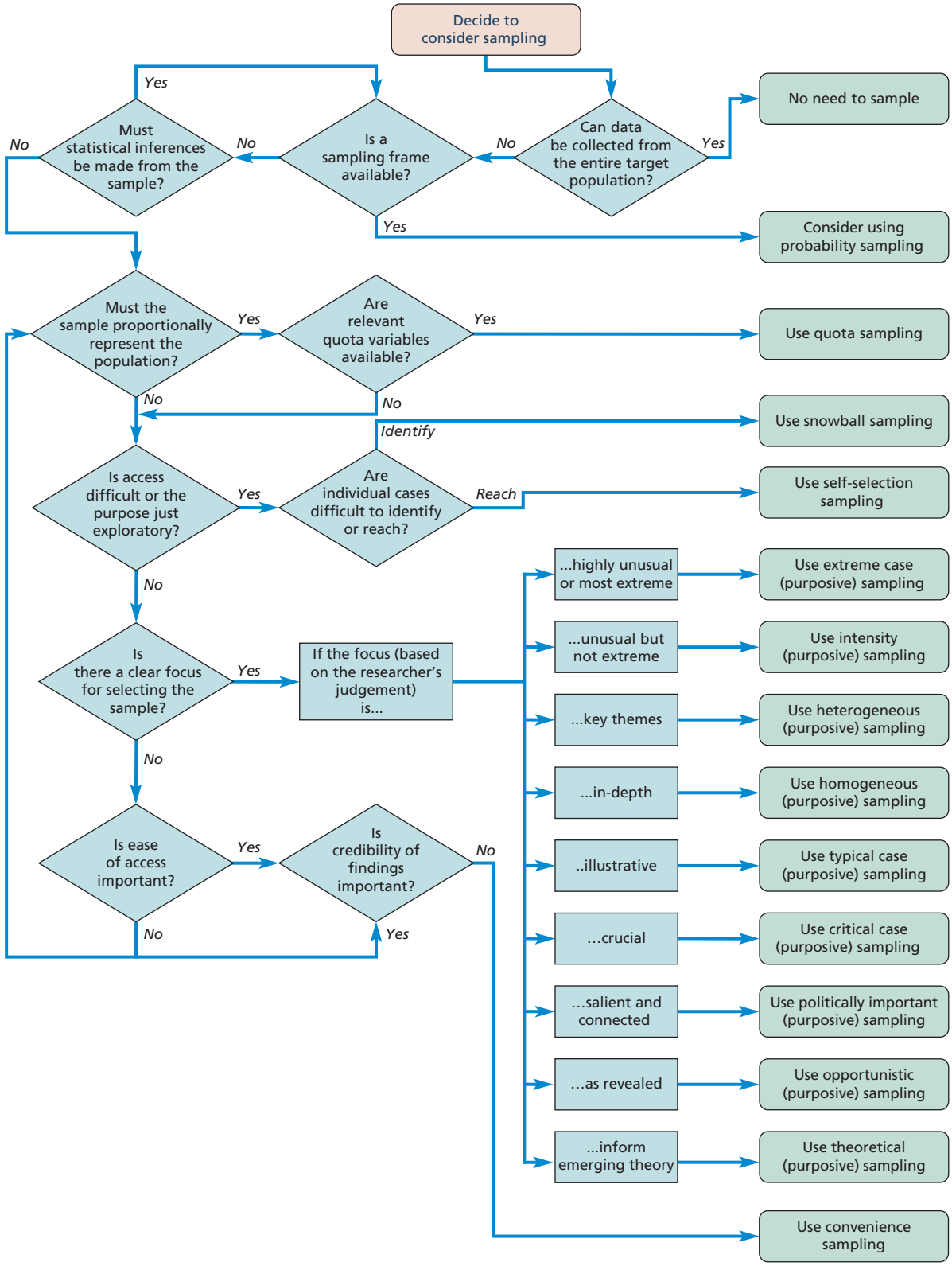


Figure 7.4 Selecting a non-probability sampling procedure

quickly as possible. With this technique you have virtually no control over the cases that will be included in your sample. Purposive sampling and volunteer sampling techniques lie between these extremes (Table 7.7). Where your research question has been derived from the literature and is reasonably well defined, the characteristics of potentially suitable participants are likely to be relatively easy to establish. However, where your research question is more emergent the sample characteristics will, at least in the early stages of data collection, be more broadly defined (Saunders and Townsend 2018).

Quota sampling

Quota sampling is entirely non-random and is often used as an alternative to probability sampling for Internet and interviewer completed questionnaires as part of a survey strategy where there is no sampling frame available. It is based on the premise that your sample will represent the target population as the variability in your sample for various quota variables is the same as that in the target population. However, this depends on the appropriateness of the assumptions on which the quota are based and having high quality data (Baker et al. 2013). Quota sampling has similar requirements for sample size as probabilistic sampling techniques (Section 7.5). To select a quota sample you:

1. Divide the population into specific groups.
2. Calculate a quota for each group based on relevant and available data.
3. Either:

Table 7.7 Impact of various factors on choice of non-probability sampling procedures

Group	Procedure	Likelihood of sample being representative	Types of research in which useful	Relative costs	Control over sample contents
Quota	Quota	Reasonable to high, although dependent on selection of quota variables	Where costs constrained or data needed very quickly so an alternative to probability sampling needed	Moderately high to reasonable	Specifies quota criteria
Purposive	Extreme case	Low	Unusual or special to offer more revealing insights to explain the more typical	Reasonable	Specifies what is unusual or extreme
	Intensity	Low	Manifest phenomenon unusual but not highly unusual	Reasonable	Specifies what is unusual but not extreme
	Heterogeneous	Low, although dependent on researcher's choices	Reveal/illuminate key themes	Reasonable	Specifies criteria for maximum diversity

Group	Procedure	Likelihood of sample being representative	Types of research in which useful	Relative costs	Control over sample contents
	Homogeneous	Low	In-depth exploration and reveal minor differences	Reasonable	Specifies criteria to identify particular group
	Typical case	Low, although dependent on researcher's choices	Illustrative	Reasonable	Specifies what is 'normal'
	Critical case	Low	Where focus is on importance	Reasonable	Specifies criteria as to what is important
	Politically important	Low	Where focus is on salience and connections	Reasonable	Specifies criteria re political importance
	Opportunistic	Low	Where unexpected occurs during research	Reasonable	Recognises and decides whether to take opportunity
	Theoretical	Low	Inform emerging theory	Reasonable	Specifies where to select initial participants and subsequent choice to inform emerging theory
Volunteer	Snowball	Low, but cases likely to have characteristics desired	Where cases difficult to identify	Reasonable	Selects only initial participant
	Self-selection	Low, as cases self-selected	Where access difficult, research exploratory	Reasonable	Offers general invitation
Haphazard	Convenience	Very low (often lacks credibility)	Ease of access	Low	Haphazard

Sources: Developed from Patton (2015); Saunders and Townsend (2018)

a (for Internet questionnaires) contract an online panel company specifying the number of cases in each quota from which completed questionnaires must be obtained; or
b (for interviewer-completed questionnaires) ensure that where multiple interviewers are used each interviewer has an 'assignment', which states the number of cases in each quota from which they must collect data.

4 Where necessary, combine the data collected to provide the full sample.

Quota sampling has a number of advantages over the probability sampling techniques. In particular, it is less costly and can be set up very quickly and does not require a sampling frame. If, as with television audience research surveys or opinion polls, your data collection needs to be undertaken very quickly then quota sampling may be the only possibility. In addition, it is relatively straightforward to specify quotas if collecting data using a panel company's pre-screened volunteer panel. Quota sampling is normally used for large target populations. Decisions on sample size are governed by the need to have sufficient responses in each quota to enable subsequent statistical analyses to be undertaken. This often necessitates a sample size of between 2,000 and 5,000.

Calculations of quotas are based on relevant and available data and are usually relative to the proportions in which they occur in the population (Box 7.12). Without sensible and relevant quotas, data collected may be biased. For many market research projects, quotas are derived from census data. Your choice of quota is dependent on two main factors:

- usefulness as a means of stratifying the data;
- ability to overcome likely variations between groups in their availability for interview.

Where people who are retired are likely to have different opinions from those in work, a quota that does not ensure that these differences are captured may result in the data being biased as it would probably be easier to collect the data from those people who are



Box 7.12 Focus on student research

Devising a quota sample

Paolo was undertaking the data collection for his project as part of his full-time employment. For his research his employer had agreed to pay an online panel company to distribute his web questionnaire to a sample of people representing those aged 16–74 who were either economically active or inactive. No sampling frame was available. Once the data had been collected, he was going to disaggregate his findings into subgroups dependent on gender and whether they were economically active or economically inactive. Previous research had suggested that whether or not people were retired would also have an impact on responses and so he needed to make sure that those surveyed in each group also reflected these people. Fortunately, his country's national census of population contained a breakdown of the number of people who were economically active and inactive, their employment status and gender. These formed the basis of the categories for his quotas:

Gender male, female	×	economic activity active, inactive	×	employment status part-time employee, full-time employee, self-employed, unemployed, full-time student, retired, student, looking after home or family, long-term sick or disabled, other

As he was going to analyse the data for economic activity and gender, it was important that each of these four groups (male and economically active, male and economically inactive, female and economically active, female and economically inactive) had sufficient respondents (at least 30) to enable meaningful statistical analyses. Paolo calculated that a 0.00001 per cent quota (1 in 100,000) would provide sufficient numbers in each of these four groups. This gave him the following quotas:

Gender	Economic activity	Employment status	Population	Quota
Male	Active	Part-time employee	1 175 518	12
		Full-time employee	9 013 615	90
		Self-employed	2 670 662	27
		Unemployed	1 015 551	10
		Full-time student	619 267	6
	Inactive	Retired	2 270 916	22
		Student	1 148 356	11
		Looking after home or family	156 757	2
		Long-term sick or disabled	823 553	8
		Other	385 357	4
Female	Active	Part-time employee	4 158 750	42
		Full-time employee	6 002 949	60
		Self-employed	1 122 970	11
		Unemployed	687 296	7
		Full-time student	717 556	7
	Inactive	Retired	3 049 775	30
		Student	1 107 475	11
		Looking after home or family	1 538 377	15
		Long-term sick or disabled	750 581	8
		Other	467 093	5
Total			38 882 374	388

These were specified to the online panel company who were paid for each completed questionnaire received up to the number in each quota group.

retired. Quotas used in market research and opinion polls usually include measures of age, gender and economic activity or social class. These may be supplemented by additional quotas, dictated by the research question(s) and objectives (Box 7.12).

When you provide an online panel company the quota specification, they deliver your questionnaire to a 'volunteer panel' of potential respondents they have selected to meet your quota criteria. For online panel company data it is important to establish whether or not the online panel company offers panel members an incentive to encourage response and the likely implications of this for the characteristics of the respondents and, consequently, their responses (Section 11.2). Despite this being a non-probability sample, the number invited to complete a particular questionnaire and the number who do so are both

known. It is therefore possible to calculate a **participation rate** (American Association for Public Opinion Research, 2016):

$$\text{Participation rate} = \frac{\text{Number of respondents providing a usable response}}{\text{Number of respondents invited to participate}}$$

For data collected using more than one interviewer, assignments (completed questionnaires) from each interviewer are combined to provide the full sample. Because the interviewer can choose within quota boundaries whom they interview, your quota sample may be subject to bias. Interviewers tend to choose respondents who are easily accessible and who appear willing to answer the questions. Clear controls may therefore be needed. In addition, it has been known for interviewers to fill in quotas incorrectly. This is not to say that your quota sample will not produce good results; they can and often do! However, you cannot measure the level of certainty or margins of error as the sample is not probability based.

Purposive sampling

With **purposive sampling** you need to use your judgement to select cases that will best enable you to answer your research question(s) and to meet your objectives. For this reason it is sometimes known as **judgemental sampling**. You therefore need to think carefully about the impact of your decision to include or exclude cases on the research when selecting a sample in this way. Purposive sampling is often used when working with very small samples such as in case study research and when you wish to select cases that are particularly informative. A particular form of purposive sampling, theoretical sampling, is used by researchers adopting the grounded theory strategy (Section 5.5).

Purposive samples cannot be considered to be statistically representative of the target population. The logic on which you base your strategy for selecting cases for a purposive sample should be dependent on your research question(s) and objectives. Patton (2015) emphasises this point by contrasting the need to select information-rich cases in purposive sampling with the need to be statistically representative in probability sampling. The more common purposive sampling strategies were outlined in Table 7.7.

Extreme case sampling

Extreme case or **deviant sampling** focuses on highly unusual or special cases on the basis that the data collected about these highly unusual or extreme outcomes will enable you to learn the most and to answer your research question(s) and meet your objectives most effectively. This is often based on the premise that findings from extreme cases will be relevant in understanding or explaining more typical cases (Patton 2015).

Intensity sampling

Intensity sampling uses a similar justification to extreme case sampling; more can be learned from the unusual than from the normal. The sample contains those cases that richly reveal the phenomenon of interest but are not the most extreme or highly unusual. You might, for example, having explored the variation in sales staff performance, select those who have consistently performed well, rather than those with the best overall performance.

Heterogeneous sampling

Heterogeneous or **maximum variation sampling** uses your judgement to choose participants with sufficiently diverse characteristics to provide the maximum variation possible in the data collected. It enables you to collect data to describe and explain the key themes that

can be observed. Although this might appear a contradiction, as a small sample may contain cases that are completely different, Patton (2015) argues that this is in fact a strength. Any patterns that do emerge are likely to be of particular interest and value and represent the key themes. In addition, the data collected should enable you to document uniqueness. To ensure maximum variation within a sample, Patton (2015) suggests you identify your diverse characteristics (sample selection criteria) prior to selecting your sample.

Homogenous sampling

In direct contrast to heterogeneous sampling, **homogeneous sampling** focuses on one particular subgroup in which all the sample members are similar, such as a particular occupation or level in an organisation's hierarchy. Characteristics of the selected participants are similar, allowing them to be explored in greater depth and minor differences to be more apparent.

Typical case sampling

Typical case sampling is usually used as part of a research project to provide an illustrative profile using a representative case. Such a sample enables you to provide an illustration of what is 'typical' to those who will be reading your research report and may be unfamiliar with the subject matter. It is not intended to be definitive.

Critical case sampling

In contrast, **critical case sampling** selects critical cases on the basis that they can make a point dramatically or because they are important. The focus of data collection is to understand what is happening in each critical case so that logical generalisations can be made. Patton (2015) outlines a number of clues that suggest critical cases. These can be summarised by the questions such as:

- If it happens there, will it happen everywhere?
- If they are having problems, can you be sure that everyone will have problems?
- If they cannot understand the process, is it likely that no one will be able to understand the process?

Politically important sampling

Politically important sampling relies on your judgement regarding anticipated politically sensitive issues and associated outcomes when deciding whether to include one or a number of prominent potential participants. Consequently, you choose to include (or exclude) participants on the basis of their connections with politically sensitive issues (Miles et al. 2019).

Opportunistic sampling

Opportunistic sampling acknowledges how, particularly within qualitative research involving inductive theory building, unforeseen opportunities can occur. For example, new potential research participants may emerge requiring an on-the-spot decision about their fit with the research and their inclusion. As such it relies on you using your judgment as to recognise such opportunities and assess whether or not to take them (Miles et al. 2019).

Theoretical sampling

Theoretical sampling is a special case of purposive sampling, being particularly associated with grounded theory and analytic induction (Morse and Clark 2019) (Sections 13.9 and 13.8). Initially, you need to have some idea of where to sample, although not

necessarily what to sample for, participants being chosen as they are needed. Subsequent sample selection is dictated by the needs of the emerging theory and the evolving storyline, your participants being chosen purposively to inform this. A theoretical sample is therefore cumulatively chosen according to developing categories and emerging theory based upon your simultaneous collecting, coding and analysis of the data.

Volunteer sampling

Snowball sampling

Snowball sampling is the first of two procedures we look at where participants volunteer to be part of the research rather than being chosen. It is used commonly when it is difficult to identify members of the desired population (Box 7.10); for example, people who are working while claiming unemployment benefit. You, therefore, need to:

1. Make contact with one or two cases.
2. Ask these cases to identify further cases.
3. Ask these new cases to identify further new cases (and so on).
4. Stop when either no new cases are given or the sample is as large as is manageable or data saturation has been reached.

The main problem is making initial contact. Once you have done this, these cases identify further members of the population, who then identify further members, and so the sample grows like a snowball being rolled in snow. For such samples the problems of bias are huge, as respondents are most likely to identify other potential respondents who are similar to themselves, resulting in a homogeneous sample (Lee 2000). The next problem is to find these new cases. However, for populations that are difficult to identify, snowball sampling may provide the only possibility.

A development of snowball sampling is **respondent driven sampling (RDS)**. This combines snowball sampling with the use of coupons or some other method to track the identification of further cases and statistical modelling to compensate for the sample being collected in a non-random way. This can enable researchers to make unbiased estimates of their target population (Baker et al. 2013).

Self-selection sampling

Self-selection sampling is the second of the volunteer sampling procedures we look at. It occurs when you allow each case, usually individuals, to identify their desire to take part in the research (Box 5.6, 7.10). You therefore:

1. Publicise your need for cases, either by advertising through appropriate media or by asking them to take part.
2. Collect data from those who respond.

Publicity for volunteer samples can take many forms. These include articles and advertisements in magazines that the population are likely to read, postings on appropriate online newsgroups and discussion groups, hyperlinks from other websites as well as letters, emails or tweets of invitation to colleagues and friends (Box 7.13). Cases that self-select often do so because of their strong feelings or opinions about the research question(s) or stated objectives. In some instances, this is exactly what the researcher requires to answer her or his research question and meet the objectives.



Box 7.13 Focus on student research

Self-selection sampling

Siân's research was concerned with the impact of student loans on studying habits. She had decided to distribute her questionnaire using the Internet. She publicised her research on Facebook in a number of groups' pages, using the associated description to invite people to self-select and click on the link to the questionnaire. Those who self-selected by clicking on the hyperlink were automatically taken to the web questionnaire she had developed using the SurveyMonkey.com online survey software.

Haphazard sampling

Haphazard sampling occurs when sample cases are selected without any obvious principles of organisation in relation to your research question, the most common form being **convenience sampling** (also known as **availability sampling**). This involves selecting cases haphazardly only because they are easily available (or most convenient) to obtain for your sample, such as the person interviewed at random in a shopping centre for a television programme 'vox pop'. Although convenience sampling is used widely (for example, Facebook polls or questions), it is prone to many sources of bias and influences that are beyond your control. Cases appear in the sample only because of the ease of obtaining them; consequently, all you can do is make some statement about the people who felt strongly enough about the subject of your question to answer it (and were using Facebook) during the period your poll was available!

Not surprisingly, as emphasised in Table 7.7, findings from convenience samples may be given very little credibility. Despite this, samples ostensibly chosen for convenience often meet purposive sample selection criteria that are relevant to the research aim (Saunders and Townsend 2018). It may be that an organisation you intend to use as a case study is 'convenient' because you have been able to negotiate access through existing contacts. Where this organisation also represents an 'extreme' case, it can also offer insights about the unusual or extreme, providing justification regarding its purpose when addressing the research aim. Alternatively, while a sample of operatives in another division of an organisation for which you work might be easy to obtain and consequently 'convenient', the fact that such participants allow you to address a research aim necessitating an in-depth focus on a particular homogenous group is more crucial.

Where the reasons for using a convenience sample have little, if any, relevance to the research aim, participants appear in the sample only because of the ease of obtaining them. While this may not be problematic if there is little variation in the target population, where the target population is more varied it can result in participants that are of limited use in relation to the research question. Often a sample is intended to represent more than the target population, for example, managers taking a part-time MBA course as a surrogate for all managers. In such instances the selection of individual cases may introduce bias to the sample, meaning that subsequent interpretations must be treated with caution.

7.10 Mixed and multi-stage sampling designs

Both mixed and multi-stage sampling designs use different sampling procedures within a research project.



Box 7.14 Focus on management research

Mixing different sampling procedures

Rinken and colleagues (Rinken et al. 2020) undertook a web survey to collect data on the COVID pandemic's social dimensions using mixed sampling. Their paper in *Survey Research Methods* focuses on the two complementary sampling procedures adopted.

The first sample was generated by sending random number text-messaging (SMS) invitations to potential Spanish respondents' mobile phones. This sampling frame comprised a possible number of over 93 million, of which 47.1 per cent were active at the time of the research and they argue emulates probability sampling (using simple random sampling). A total of 51,046 SMS messages were sent resulting in a response rate of 5.6 per cent, nearly double that expected, and a sample size of 1,379. Within this there was under-representation in some age groups and of people with low levels of formal education.

The second sample was recruited subsequently using paid advertisements on Facebook and Instagram, focusing entirely on people with basic education (low levels of formal education) and aged either under 30 years or over 65 years. This was a non-probability volunteer sample in which respondents self-selected. The advertisement was displayed 1,337,856 times to 1,187,580 people being clicked on by 3,752 different individuals, 944 who completed the questionnaire. Although the overall response rate was ultra-low (0.08 per cent) the click to response rate was 26 per cent.

Rinken et al. (2020) note their two-pronged sampling procedure provided less biased data than either of the two components would have done on a standalone basis.

Mixed sampling

In a **mixed sampling** design, data are collected from two or more discrete samples, each discrete collection using either probability or non-probability sample selection procedures. You might, for example, combine data in a single research project from two different samples; one generated using probability sampling procedure such as random sampling, and the other being a non-probability procedure such as volunteer sampling (Box 7.14). Alternatively, you might use two data collected from two discrete probability samples from different organisations suppliers, both collected using systematic random sampling.

Multi-stage sampling

In contrast, **multi-stage sampling** refers to any sampling design that occurs in two or more successive stages using either probability, non-probability or both types of sample selection procedures. In the first stage you might select two organisations using critical case purposive sampling. Subsequently, in the second stage, you might select a sample of employees from each organisation using stratified random sampling, thereby combining non-probability with probability sampling. Alternatively, you may first select a large sample of customers or organisations using quota sampling. Subsequently, based on analysis of the data collected from these customers or organisations, you may select a smaller heterogeneous purposive sample to illustrate the key themes. Multi-stage sampling can also use cluster sampling to overcome problems associated with a geographically dispersed population when face-to-face contact is needed, or when it is expensive and time consuming to construct a sampling frame for a large geographical area (Box 7.15).



Box 7.15 Focus on student research

Multi-stage sampling

Laura worked for a market research organisation that needed her to interview a sample of 400 households in England and Wales face-to-face. She decided to use the electoral register as a sampling frame. Laura knew that selecting 400 households using either systematic or simple random sampling was likely to result in these 400 households being dispersed throughout England and Wales, resulting in considerable amounts of time spent travelling between interviewees as well as high travel costs. By using multi-stage sampling Laura felt these problems could be overcome.

In her first stage the geographical area (England and Wales) was split into discrete sub-areas (counties). These formed her sampling frame. After numbering all the counties, Laura selected a small number of counties at random using cluster sampling. Since each case (household) was located in a county, each had an equal chance of being selected for the final sample.

As the counties selected were still too geographically large, each was subdivided into smaller geographically discrete areas (electoral wards). These formed the next sampling frame (stage 2). Laura selected another sample at random. This time she selected a larger number of wards using simple random sampling to allow for likely important variations in the nature of households between wards.

A sampling frame of the households in each of these wards was then generated. Laura purchased copies of the edited electoral register from the relevant local authorities. These contained the names and addresses of people who had registered to vote and had not 'opted out' of allowing their details to be made widely available for others to use. Laura finally selected the actual cases (households) that she would interview using systematic random sampling.

Where multi-stage sampling uses one or more probability sampling procedures, you need to ensure that the sampling frames are appropriate and available. In order to minimise the impact of selecting smaller and smaller subgroups on the representativeness of your sample, you can apply stratified random sampling procedures (Section 7.6). This can be further refined to take account of the relative size of the subgroups by adjusting the sample size for each subgroup. As you have selected your sub-areas using different sampling frames, you only need a sampling frame that lists all the members of the population for those subgroups you finally select (Box 7.15). This provides considerable savings in time and money.

7.11 Summary

- Sampling is used when it is not feasible or sensible to collect data from every possible case or group member to answer your research question(s) and to address your objectives.
- Choice of sampling procedure or procedures is dependent on your research question(s) and objectives:
  - Research question(s) and objectives that need you to estimate statistically the characteristics of the target population from a sample nearly always require probability samples. (When considering probability sampling for a population of 50 or fewer, it is usually sensible to collect data from the entire population.)
  - Research question(s) and objectives that do not require such statistical generalisations can, alternatively, make use of non-probability sampling procedures.

- Probability sampling procedures all necessitate some form of sampling frame.
- Where it is not possible to obtain or devise a sampling frame you will need to use non-probability sampling procedures.
- Non-probability sampling procedures provide the opportunity to select your sample purposively and to also reach difficult-to-identify members of the target population.
- The size of probability samples selected to address research questions that require statistical estimation should be calculated. It is dependent upon the target population and the margin of error and confidence level required. Statistical analyses usually require a minimum sample size of 30.
- The size for non-probability samples selected to address research questions that do not require statistical estimation is dependent upon the research question and objectives, what will allow you to develop a fruitful analytic argument and what will be credible. While guidance suggests between 15 and 60 interviews is likely to be sufficient to reach saturation and be credible, for some research purposes a sample of one can be sufficient and credible.
- Sample size and the procedure used are also influenced by the availability of resources, in particular financial support and time available to select the sample and to collect, input and analyse the data.
- For some research projects you will need to combine multiple discrete samples or use multi-stage sampling, perhaps combining probability and non-probability procedures.
- Your sampling choices will, for some research questions, be dependent on your ability to gain access to organisations or groups. The considerations summarised earlier must therefore be tempered with an understanding of what is practically possible.

Self-check questions

Help with these questions is available at the end of the chapter.

7.1 Identify a suitable sampling frame for each of the following research questions.

a How do company directors of manufacturing firms of over 500 employees think a specified piece of legislation will affect their companies?

b Which factors are important in accountants' decisions regarding working overseas?

c How do employees at Best Plumbing Ltd feel about the company's proposal to make a current Covid-19 vaccination certificate compulsory for all employees?

7.2 Lisa has emailed her tutor with the following query regarding sampling and dealing with non-response. Imagine you are Lisa's tutor. Draft a reply to answer her query.

HELP!!!! Sampling non-response

Hi,

I hope you are well.

I interviewed someone yesterday and I (almost) failed to get him to say anything useful for my research project. This was strange as he had appeared to have really useful background. I was unable to get him to reflect on the issue of inhibitors of spin out companies in the *light of his own experiences* or *provide actual examples.* He clearly wanted to talk about what he wanted to and had decided this before the interview and I asked my questions 😥 He obviously though there were right and wrong answers and he was telling me what he thought he should say rather than giving me the actual examples I asked for. This meant he did not talk about feedback loops, linkages or ideas, which you know is what my research is about. My attempts to get the conversation onto my research were gently, but firmly, put aside.

My question is: **Can I just exclude this interview from my sample?** He was a great person and I really enjoyed meeting him. However, because I could not get him to answer my questions, the interview did not yield any insights. What should I do?

With best wishes

Lisa

7.3 You have been asked to select a sample of manufacturing firms using the sampling frame below. This also lists the value of their annual output in tens of thousands of pounds over the past year. To help you in selecting your sample the firms have been numbered from 1 to 100.

- **a** Select two simple random samples, each of 20 firms, and mark those firms selected for each sample on the sampling frame.
- **b** Describe and compare the pattern on the sampling frame of each of the samples selected.
- **c** Calculate the average (mean) annual output in tens of thousands of pounds over the past year for each of the samples selected.
- **d** Given that the true average annual output is £6,608,900, is there any bias in either of the samples selected?

	Output		Output		Output		Output		Output
1	10	21	7	41	29	61	39	81	55
2	57	22	92	42	84	62	73	82	66
3	149	23	105	43	97	63	161	83	165
4	205	24	157	44	265	64	275	84	301
5	163	25	214	45	187	65	170	85	161
6	1359	26	1440	46	1872	66	1598	86	1341
7	330	27	390	47	454	67	378	87	431
8	2097	28	1935	48	1822	68	1634	88	1756
9	1059	29	998	49	1091	69	1101	89	907
10	1037	30	1298	50	1251	70	1070	90	1158
11	59	31	10	51	9	71	37	91	27
12	68	32	70	52	93	72	88	92	66
13	166	33	159	53	103	73	102	93	147
14	302	34	276	54	264	74	157	94	203
15	161	35	215	55	189	75	168	95	163
16	1298	36	1450	56	1862	76	1602	96	1339
17	329	37	387	57	449	77	381	97	429
18	2103	38	1934	58	1799	78	1598	98	1760
19	1061	39	1000	59	1089	79	1099	99	898
20	1163	40	1072	60	1257	80	1300	100	1034

7.4 You have been asked to select a 10 per cent sample of firms from the sampling frame used for self-check question 7.3.

- **a** Select a 10 per cent systematic random sample and mark those firms selected for the sample on the sampling frame.
- **b** Calculate the average (mean) annual output in tens of thousands of pounds over the past year for your sample.
- **c** Given that the true average annual output is £6,608,900, why does systematic random sampling provide such a poor estimate of the annual output in this case?

7.5 You decide to collect data using a web questionnaire from managing directors of small- to medium-sized organisations. From the data you collect you need to be able to generalise about the attitude of such managing directors to recent changes in government policy towards these firms. Your generalisations need to be accurate to within plus or minus 5 per cent.

- **a** How many managing directors will you need to collect data from?
- **b** Assuming a response rate of 5 per cent, how many questionnaires will you need to distribute?

7.6 You have been asked to use face-to-face questionnaires to collect data from local residents about their opinions regarding the siting of a new supermarket in an inner-city suburb (estimated catchment population 111,376 at the last census). The age and gender distribution of the catchment population at the last census is listed below.

	Age group							
Gender	**0–4**	**5–15**	**16–19**	**20–29**	**30–44**	**45–59 /64***	**60/65#–74**	**75 +**
Males	3498	7106	4884	7656	9812	12892	4972	2684
Females	3461	6923	6952	9460	8152	9152	9284	4488

*59 females, 64 males; 60 females, 65 males.

a Devise a quota for a quota sample using these data.
b What other data would you like to include to overcome likely variations between groups in their availability for interview and replicate the target population more precisely? Give reasons for your answer.
c What problems might you encounter in using interviewers?

7.7 For each of the following research questions it has not been possible for you to obtain a sampling frame. Suggest the most suitable non-probability sampling technique to obtain the necessary data, giving reasons for your choice.

a What support do people sleeping rough believe they require from social services?
b Which television advertisements do people remember watching last weekend?
c How do employers' opinions vary regarding the presence of institutional racism in the organisations in which they work?
d How are manufacturing companies planning to respond to the introduction of road tolls?
e Would users of the squash club be prepared to pay a 10 per cent increase in subscriptions to help fund two extra courts (answer needed by tomorrow morning!)?

Review and discussion questions

7.8 With a friend or colleague choose one of the following research questions (or one of your own) in which you are interested.

- What attributes attract people to jobs?
- How are exporting organisations adapting their processes following the United Kingdom leaving the European Union?

Use the flow charts for both probability sampling (Figure 7.3) and non-probability sampling (Figure 7.4) to decide how you could use each type of sampling independently to answer the research question.

7.9 Agree with a colleague to watch a particular documentary or consumer rights programme on the television or a streaming service. If possible, choose a documentary with a business or management focus. During the documentary, pay special attention to the samples from which the data for the documentary are drawn. Where possible, note down details of the sample such as who were interviewed or who responded to questionnaires and the reasons why these people were chosen. Where this is not possible, make a note of the information you would have liked to have been given. Discuss your findings with your colleague and come to a conclusion regarding the nature of the sample used, its representativeness and the extent to which it was possible for the programme maker to generalise from that sample.

7.10 Access online or obtain a copy of a quality daily newspaper and, within the newspaper, find an article that discusses a 'survey' or 'poll'. Share the article with a friend. Make notes of the process used to select the sample for the 'survey' or 'poll'. As you make your notes, note down any areas where you feel there is insufficient information to fully understand the sampling process. Aspects for which information may be lacking include the target population, size of sample, how the sample was selected, representativeness and so on. Discuss your findings with your friend.



Progressing your research project

Using sampling as part of your research

- Consider your research question(s) and objectives. You need to decide whether you will be able to collect data on the entire population or will need to collect data from a sample.
- If you decide that you need to sample, establish whether your research question(s) and objectives require probability sampling. If they do, make sure that a suitable sampling frame is available or can be devised, and calculate the actual sample size required, taking into account likely response rates.
- If your research question(s) and objectives do not require probability sampling, or you are unable to obtain a suitable sampling frame, you will need to use non-probability sampling. Where appropriate, estimate the sample size you are likely to need to develop a fruitful analytic argument.
- Select the most appropriate sampling procedure or procedures after considering the advantages and disadvantages of all suitable procedures and undertaking further reading as necessary.
- Select your sample or samples following the procedure or procedures as outlined in this chapter.
- Remember to note down your choices and the reasons for these as you make them, as you will need to justify your choices when you write about your research method (Boxes 7.5 and 7.11 may be helpful here).
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Baruch, Y. and Holtom, B.C. (2008) 'Survey response rate levels and trends in organizational research', *Human Relations,* Vol. 61, pp. 1139–60. This examines 490 academic studies using surveys published in 2000 and 2005 covering 100,000 organisations and over 400,000 individual respondents. The paper suggests likely response rates for different types of study and offers useful advice for reporting response rates.

Latpate, R., Kshirsagar, J., Gupta, V.K. and Chandra, G. (2021) *Advanced sampling methods.* Singapore: Springer. This provides a detailed discussion of probability sampling procedures as well as non-sampling errors.

Patton, M.Q. (2015) *Qualitative Research and Evaluation Methods: Integrating Theory and Practice* (4th edn). Thousand Oaks, CA: Sage. Chapter 5, 'Qualitative designs and data collection', contains a useful discussion of non-probability sampling techniques, with examples.

Saunders, M.N.K. and Townsend, K. (2016) 'Reporting and justifying the number of participants in organisation and workplace research', *British Journal of Management,* Vol. 27, pp. 837–52. In addition to summarising the literature on sample size for interviewing, this examines sample selection practice and reporting for 248 academic studies using interviews published in 2003 and 2013. The paper suggests likely sample sizes for different types of interview study and offers useful advice for justifying sample size.

Case 7
Female ride share app drivers' careers in Tehran



Kaveh Kazemi /Getty Images News/GettyImages

Having missed the 6:30 a.m. alarm, I jumped out of bed worrying about my 8:00 Organizational Behaviour lecture delivered by a very time-sensitive professor. I had received a warning the week before, reminding me that being late yet again would lead to my exclusion from the module. Running around to find my clothes and headscarf, I asked my brother to give me a lift. He rolled his eyes and used hand gestures to remind me of his recent car crash and that the car was still in the garage for repair. Observing my desperation, he offered to book an app-based taxi for me while I was getting ready, handing me three 10,000 toman notes. I asked him to use the service with female-only drivers because I wanted to feel comfortable applying my make-up on the way.

The driver must have been very close to our house as my phone rang immediately and I heard a woman on the phone telling me the taxi was waiting outside. I waved goodbye to my brother and ran to the taxi. Hesitating between sitting in the back or front seat, I noticed a huge handbag put on the front seat, so I climbed into the back. Although we had 40 minutes to get to the university, I was nervous about Tehran's heavy morning traffic. After catching my breath and estimating that I would make it to my lecture on time, I remembered that I was supposed to write a paragraph on my initial idea for my research project for my 10:00 a.m. Research Methods module. I knew I was interested in non-professional workers from my Organizational Behaviour class, where I learned that management research so far has mainly focused on professional workers. Trying to fix my headscarf in the front mirror, the driver told me she was sorry about her bag, but the idea was to prevent male passengers from sitting in the front. I stared at her for a while, made up my mind and asked: 'Can I call you in a couple of months to interview you for my research project?'

My research idea was well received by my project tutor, and I proceeded to explore female Internet taxi drivers' career contingencies as non-professional contract workers. I was also interested in examining the impact of institutional forces on how female drivers navigated their work. Upon receiving ethical approval, I started my project feeling very optimistic.

In my proposal, I mentioned that I had access to a few female taxi drivers, and that I would use snowball sampling to secure more participants. Unfortunately, this was much more difficult than I had anticipated. The driver I had asked earlier did not answer her phone. I decided to ask my acquaintances for advice and help. My mother's friend, whose husband was an app-based driver, shared with me details of a channel on the Telegram phone app that housed more than 500 drivers and was open to the public. I considered joining the channel and uploading my information sheet with a request for participants but decided against it because I had to use my personal phone number, and I did not feel comfortable about that. I sent a LinkedIn message to the app-based internet company's communication officer but did not hear back from them.

Being concerned about my access to participants, I debated shifting the focus of my research from female to male taxi drivers, because my friends and family had introduced five male drivers to me. Yet, one of the key motivations for my research was that female app-based taxi drivers were a new phenomenon in an occupation dominated by males worldwide. It was the recent increase of female taxi drivers in a Muslim-dominant country that had inspired me to explore their career trajectory. Although Iranian women had been granted the right to drive for almost 80 years, formal taxi driving was dominated by male drivers until the emergence of Internet taxi companies.

In a final attempt to save myself from missing the data collection deadline, I picked up a notebook and decided to map the logistics of the taxi drivers' job, hoping that it would guide me in some way, and it did! Midway through my messy mapping activity, I remembered that when I climbed in the car, the drivers always double-checked with me to see if I was OK with them initiating the trip on their mobile device, which connected the drivers, passengers and internet taxi company. I came up with a plan that helped me secure participants quickly. First, I booked a taxi through the app whose drivers were women-only. Once the taxi arrived, I introduced myself to the driver and showed her my university ID card to assure her my request was genuine. Then, I asked the driver not to initiate the ride, shared an overview of my research project and asked her if she was willing to participate. I had bought gift cards to give to the drivers as tokens of appreciation. I conducted the interviews in the drivers' cars after briefing them on the project and obtaining their consent.

I kept interviewing drivers, and with each interview, I learned something new about the female drivers' experiences, why they chose to do this job, how they worked and with whom they interacted. One afternoon, when I was talking to the fifteenth person, I had an aha moment! Everything this driver was telling me; I had already heard in other interviews. I knew from reading the textbook that this meant my data had reached saturation. It was time to stop interviewing. Although I would miss talking to the drivers, it was time to write my project report before the module deadline!

Note

If you are interested in reading about female Internet taxi drivers' career experiences refer to the following publication: Beigi, M., Nayyeri, S. and Shirmohammadi, M. (2020) 'Driving a career in Tehran: Experiences of female internet taxi drivers', *Journal of Vocational Behavior,* Vol. 116, pp. 1033–47.

Questions

1. What purposive sampling strategy was used?
2. How was the sampling strategy used and what was its outcome?
3. What lessons can be learned about the sampling process in qualitative research?
4. Why did the student decide to stop the data collection?

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders.**



They are:

- Change management at Hattersley Electronics (focussing on the use of multi-stage (probability) sampling).
- Employment networking in the Hollywood film industry (focussing on the use of snowball (non-probability) sampling).
- Auditor independence and integrity in accounting firms (focussing on the implications for probability sampling of small sample size).
- Implementing strategic change initiatives (focussing on choice of sampling procedures and associated implication when using a survey strategy).
- Comparing UK and French perceptions and expectations of online supermarket shopping (focussing on the implications of using social networking sites for sample selection).
- Understanding and assessing economic inactivity among Maltese female homemakers (focussing on the use of random (probability) sampling).
- Starting up, not slowing down: social entrepreneurs in an aging society (focussing on purposive (non-probability) sampling and data saturation).

Self-check answers

7.1 **a** A complete list of all directors of large manufacturing firms could be purchased from an online database company to use as the sampling frame. Alternatively, a list containing only those selected for the sample could be purchased to reduce costs. These electronic data could be mail-merged into standard emails requesting participation by completing a questionnaire.

b A complete list of accountants, or one that contained only those selected for the sample, could be purchased from an online database company to use as the sampling frame. Care would need to be taken regarding the precise composition of the list to ensure that it included those in private practice as well as those working for organisations. Alternatively, if the research was interested only in qualified accountants then it might (subject to ethical approval) be possible to work with a professional accountancy body to select a sample of their members from their membership records.

c Subject to ethical approval, the personnel records or payroll of Best Plumbing Ltd could be used. Either would provide an up-to-date list of all employees with their email addresses.

7.2 Your draft of Lisa's tutor's reply is unlikely to be worded the same way as the one below. However, it should contain the same key points:

'tutor's name' <lisas.tutor@anytown.ac.uk>
To: <lisa@anytown.ac.uk>
Sent: today's date 7:06
Subject: Re: Help!!! Sampling non-response?

Hi Lisa
Many thanks for the email. This is not in the least unusual. I reckon to get about 1 in 20 interviews which go this way and you just have to say 'c'est la vie'. This is not a problem from a methods perspective as, in sampling terms, it can be treated as a non-response due to the person refusing to respond to your questions. This would mean you could not use the material. However, if he answered some other questions then you should treat this respondent as a partial non-response and just not use those answers.
Hope this helps.
'Tutor's name'

7.3 a Your answer will depend on the random numbers you selected. However, the process you follow to select the samples is likely to be similar to that outlined. You will need to generate two separate sets of 20 random numbers between 1 and 100 using a spreadsheet. If a random number is generated two or more times it can only be used once. Two possible sets are:

Sample 1: 38 41 14 59 53 03 52 86 21 88 55 87 85 90 74 18 89 40 84 71
Sample 2: 28 100 06 70 81 76 36 65 30 27 92 73 20 87 58 15 69 22 77 31

These are then marked on the sampling frame (sample 1 is shaded in blue, sample 2 is shaded in orange) as shown below:

1	10	*21*	7	*41*	29	*61*	39	*81*	55
2	57	*22*	92	*42*	84	*62*	73	*82*	66
3	149	*23*	105	*43*	97	*63*	161	*83*	165
4	205	*24*	157	*44*	265	*64*	275	*84*	301
5	163	*25*	214	*45*	187	*65*	170	*85*	161
6	1359	*26*	1440	*46*	1872	*66*	1598	*86*	1341
7	330	*27*	390	*47*	454	*67*	378	*87*	431
8	2097	*28*	1935	*48*	1822	*68*	1634	*88*	1756
9	1059	*29*	998	*49*	1091	*69*	1101	*89*	907
10	1037	*30*	1298	*50*	1251	*70*	1070	*90*	1158
11	59	*31*	10	*51*	9	*71*	37	*91*	27
12	68	*32*	70	*52*	93	*72*	88	*92*	66
13	166	*33*	159	*53*	103	*73*	102	*93*	147
14	302	*34*	276	*54*	264	*74*	157	*94*	203

15	161	*35*	215	*55*	189	*75*	168	*95*	163
16	1298	*36*	1450	*56*	1862	*76*	1602	*96*	1339
17	329	*37*	387	*57*	449	*77*	381	*97*	429
18	2103	*38*	1934	*58*	1799	*78*	1598	*98*	1760
19	1061	*39*	1000	*59*	1089	*79*	1099	*99*	898
20	1163	*40*	1072	*60*	1257	*80*	1300	*100*	1034

b Your samples will probably produce patterns that cluster around certain numbers in the sampling frame, although the amount of clustering may differ, as illustrated by samples 1 and 2 above.

c The average (mean) annual output in tens of thousands of pounds will depend entirely upon your sample. For the two samples selected the averages are:

Sample 1 (blue): £6,659,500
Sample 2 (orange): £7,834,500

d There is no bias in either of the samples, as both have been selected at random. However, the average annual output calculated from sample 1 represents the target population more closely than that calculated from sample 2, although this has occurred entirely at random.

7.4 a Your answer will depend on the random number you select as the starting point for your systematic sample. However, the process you followed to select your sample is likely to be similar to that outlined. As a 10 per cent sample has been requested, the sampling fraction is 1/10. Your starting point is selected using a random number between 1 and 10, in this case 2. Once the firm numbered 2 has been selected, every tenth firm is selected:

2 12 22 32 42 52 62 72 82 92

These are marked with orange shading on the sampling frame and will result in a regular pattern whatever the starting point:

1	10	*21*	7	*41*	29	*61*	39	*81*	55
2	57	*22*	92	*42*	84	*62*	73	*82*	66
3	149	*23*	105	*43*	97	*63*	161	*83*	165
4	205	*24*	157	*44*	265	*64*	275	*84*	301
5	163	*25*	214	*45*	187	*65*	170	*85*	161
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10	1037	*30*	1298	*50*	1251	*70*	1070	*90*	1158
11	59	*31*	10	*51*	9	*71*	37	*91*	27
12	68	*32*	70	*52*	93	*72*	88	*92*	66
13	166	*33*	159	*53*	103	*73*	102	*93*	147
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19	1061	*39*	1000	*59*	1089	*79*	1099	*99*	898
20	1163	*40*	1072	*60*	1257	*80*	1300	*100*	1034

b The average (mean) annual output of firms for your sample will depend upon where you started your systematic sample. For the sample selected above it is £757,000.

c Systematic sampling has provided a poor estimate of the annual output because there is an underlying pattern in the data, which has resulted in firms with similar levels of output being selected.

7.5 **a** If you assume that there are at least 100,000 managing directors of small- to medium-sized organisations from which to select your sample, you will need to interview approximately 380 to make generalisations that are accurate to within plus or minus 5 per cent (Table 7.1).

b A response rate of 5 per cent equates to only one in 20 of the questionnaires being returned. You will therefore need to distribute a sample 20 times larger than the number of returns you need – 7,600.

7.6 **a** Prior to deciding on your quota you will need to consider the possible inclusion of residents who are aged under 16 in your quota. Often in such research projects residents aged under 5 (and those aged 5–15) are excluded. You would need a quota of between 2,000 and 5,000 residents to obtain a reasonable accuracy. These should be divided proportionally between the groupings as illustrated in the possible quota below:

	Age group					
Gender	**16–19**	**20–29**	**30–44**	**45–59/64**	**60/65–74**	**75+**
Males	108	169	217	285	110	59
Females	154	209	180	203	205	99

b Data on social class, employment status, socioeconomic status or car ownership could also be used as further quotas. These data are often available from your national census and are likely to affect shopping habits.

c Interviewers might choose respondents who were easily accessible or appeared willing to answer the questions. In addition, they might fill in their quota incorrectly or make up the data.

7.7 **a** Either snowball sampling as it would be difficult to identify members of the target population or, possibly, convenience sampling because of initial difficulties in finding members of the target population.

b Quota sampling to ensure that the variability in the target population as a whole is represented.

c Heterogeneous purposive sampling to ensure that the full variety of responses are obtained from a range of respondents from the target population.

d Self-selection sampling as it requires people who are interested in the topic.

e Convenience sampling owing to the very short timescales available and the need to have at least some idea of members' opinions.

Get ahead using resources on the companion website at: **www.pearsoned.co.uk/saunders.**



- Improve your IBM SPSS Statistics, Qualtrics and NVivo research analysis with practice tutorials.
- Save time researching on the Internet with the Smarter Online Searching Guide.
- Test your progress using self-assessment questions.
- Follow live links to useful websites.

Chapter 8



Obtaining and evaluating secondary data

Learning outcomes

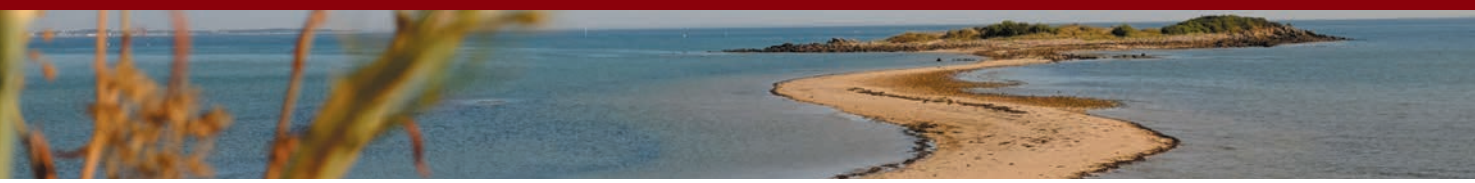
By the end of this chapter you should be able to:

- identify the variety of types of secondary data that are available;
- recognise the advantages and disadvantages of using secondary data in research projects;
- utilise a range of techniques to search for and locate secondary data;
- evaluate the suitability of, and select, secondary data for answering your research question(s) and meeting your objectives;
- progress your research project by assessing the utility of, selecting and incorporating secondary data.

8.1 Introduction

When thinking about how to obtain data to answer their research question(s) or meet their objectives, students are often expected to consider undertaking further analyses of data that were collected initially for some other purpose. Such data are known as **secondary data** and include both raw data and published summaries. Once obtained, and if evaluated as suitable to help answer the research question, these data can be further analysed to provide additional or different knowledge, interpretations or conclusions (Bishop and Kuula-Luumi 2017; Bulmer et al. 2009). Yet, despite the potential of secondary data, many students automatically think in terms of collecting new **(primary) data** specifically for their research project.

Throughout the world government departments undertake surveys and publish official statistics covering social, demographic and economic topics alongside reports summarising these; an increasing number allowing access and downloading of such data from online databases as part of freedom of information legislation. Consumer research organisations collect data that are used subsequently by a variety of clients, as well as being summarised for wider use as market reports. Trade organisations collect data from their members on topics such as sales that are subsequently aggregated, presented and published. Media organisations undertake and broadcast documentaries including interviews with businesspeople and politicians, many of which



are subsequently archived and available on demand. Quality daily newspapers, past copies of which are available from online databases and digital archives through most university libraries, contain a wealth of data. These include reports about takeover bids, interviews with business leaders, photographs of events, graphs and infographics and listings of companies' share prices.

Most organisations collect and store a wide variety and large volume of data continuously to support their day-to-day operations: for example, financial records, pay roll, organisation charts, copies of letters, minutes of meetings and business transactions including sales queries and purchases. Search engines such as Google collect data on the billions of searches undertaken daily, and social networking sites (such as Facebook) host web pages for particular interest groups, including those set up by organisations, storing them alongside other data including group members' posts, photographs, videos and demographic and geographic location data, creating a digital trail of their users.

Governments' survey data, such as censuses of population, are widely available without charge to download in aggregated form. Such survey data are also often deposited in, and available digitally from, online data archives. Web pages on social networking sites can range from being 'open' to everyone to view, to being 'restricted' only to group members. Academics increasingly deposit their research data in digital archives and repositories and, occasionally, peer-reviewed journal articles include links such as QR (Quick Response) codes to these and online data supplements. Online databases containing company information, such as Amadeus and Datastream, can often be accessed via your university library web pages (Table 8.2). In addition, companies and professional organisations websites may contain a wide variety of data that could be reanalysed for your research project. However, some secondary data, in particular documents such as company minutes, are available only from the organisations that produce them and so access will need to be negotiated (Sections 6.2 to 6.5). Other secondary data, particularly historical documents, such as photographs, illustrations and the like, may be only available from archives or museums in their original form, although these are also increasingly available digitally.

Secondary data therefore offer you potential access to a far wider variety of data from a far larger sample over a longer time period than you could ever collect yourself. Fortunately, over the past decade the numbers of sources of potential secondary data have, alongside the ease of gaining access, continued to expand rapidly.

For certain research questions, such as those requiring national or international comparisons, data from numerous or high profile people or a historical or longitudinal study, secondary data will probably provide the main source to answer your research question(s) and to address your objectives. How you might use these data depends on your research question and your research philosophy. A positivist is likely to consider secondary data (often numerical and obtained originally using a survey strategy) to be an objective representation of an external reality. In contrast, a critical realist would see secondary data, either qualitative or quantitative, as providing partial, but not necessarily accurate, representations from which insights could be drawn.

Crucially, if you are undertaking your research project as part of a course of study, we recommend that you check your course's assessment regulations before deciding whether you are going to use primary or secondary or a combination of both types of data. Some

Your digital data trail



Source: © Mark N.K. Saunders 2018

When you awoke this morning you probably checked your emails and skimmed the news using an app on your mobile phone or tablet. The sites you visited would have probably recorded your IP (Internet Protocol) address, identifying your Internet service provider and your approximate geographic location. If you used a search engine, your search history may well have been saved, as would any material you intentionally submitted online. You will have already started to leave your digital data trail for the day.

For the remainder of the day, you will continue to be traced and tracked through the apps you access and the technology you use. As you answer your emails, responses you send will be saved. If you use your university identity card to swipe into the library, security will be informed automatically and, later, your swipe to leave will be recorded. Your university's virtual learning environment (VLE) will record when you log in, the amount of time you spend on different pages for different modules, whether you access recommended online reading – extending your trail still further. If you withdraw cash from an ATM, your digital trail will be extended and your location logged and time and date stamped. This tracking occurs wherever you are in the world allowing you to be located in the vicinity of events taking place, such as Sydney's Mardi Gras.

Every day each of us creates vast amounts of digital data. When we search online our searches are recorded. When we tweet, comment on or reply to other tweets, these are stored by Twitter. When updating our status, commenting or liking on Facebook or other social media platforms, we are generating data about ourselves, which is stored. Every time we pay by 'tapping' our phone or bank card, we give the retailer, and our bank, information about where we are and how much we have just spent. When we post feedback or consumer reviews we are, again, generating data that are stored.

Our digital data trail or digital footprint is a set of traceable digital activities, actions and communications. Such data, although often collected for an immediate purpose (for example, stock control, payment, enabling access) can, and are, re-used by companies such as Facebook, Amazon and Google to, for example, target advertising. Others including researchers increasingly re-use these data, often in combination with other data such as official statistics. Re-using such 'secondary' data can reveal new insights into trends and patterns as well as infer personal information such as demographic traits, religious and political views and purchasing preferences.

universities explicitly require students to collect primary data for their research projects. Most research questions are answered using some combination of secondary and primary data. Invariably, where limited appropriate secondary data are available, you will have to rely mainly on data you collect yourself.

In this chapter we examine the different types of secondary data that are likely to be available to help you to answer your research question(s) and meet your objectives, and how you might use them (Section 8.2). We then outline the advantages (Section 8.3) and disadvantages (Section 8.4) of using secondary data and consider a range of methods to search for and locate these data (Section 8.5). Crucially we discuss ways of evaluating and selecting those that are suitable for your specific research question (Section 8.6), emphasising the importance of assessing the quality of research design and the methods used originally to collect these data. We therefore recommend that, even if you are only using secondary data, you read Section 5.8, which is concerned with assessing the quality of research design; and Chapters 9, 10 and 11, which are concerned with collecting primary data. Analysis techniques for both quantitative and qualitative secondary data are considered in Chapters 12 and 13, respectively. Throughout the chapter we offer insights into the wide variety of potential sources recognising that, as these continue to grow rapidly, providing a comprehensive list is an impossible task.

8.2 Types of secondary data and uses in research

Secondary data include both quantitative (numeric) and qualitative (non-numeric) data (Section 5.3), being used principally in both descriptive and explanatory research. The secondary data you analyse further may be **raw data**, where there has been little if any processing or **compiled data** that have already been selected or summarised. Although, overwhelmingly available digitally, they may be **structured data**, that is organised in a clearly defined format that is easy to process and stored in a relational database or spreadsheet; or **unstructured data**, which are not as easy to search or process as they do not follow a predefined structure. Structured data often comprise numerical data and now account for less than 20 per cent of all stored data (Taylor 2021). In contrast, unstructured data comprise everything else including text, audio, visual and audio-visual data, although they may also include dates and other numerical data. Many secondary data sets available digitally comprise data that have been re-combined with other data to create larger multiple-source data sets. Some, as highlighted in the opening vignette, comprise continually updated data from a variety of sources and may be considered big data.

Within business and management research projects, secondary data are used most frequently in case study and survey research strategies. However, there is no reason not to use secondary data in other research strategies, including archival, action and experimental research. We find it useful to group the different forms of secondary data into three broad types:

- survey, including census, continuous, regular and ad-hoc surveys;
- document, be they text, audio or visual/audio-visual media;
- multiple source, compiled to create a snapshot, longitudinal data or being continually updated.

These are summarised along with examples in Figure 8.1.

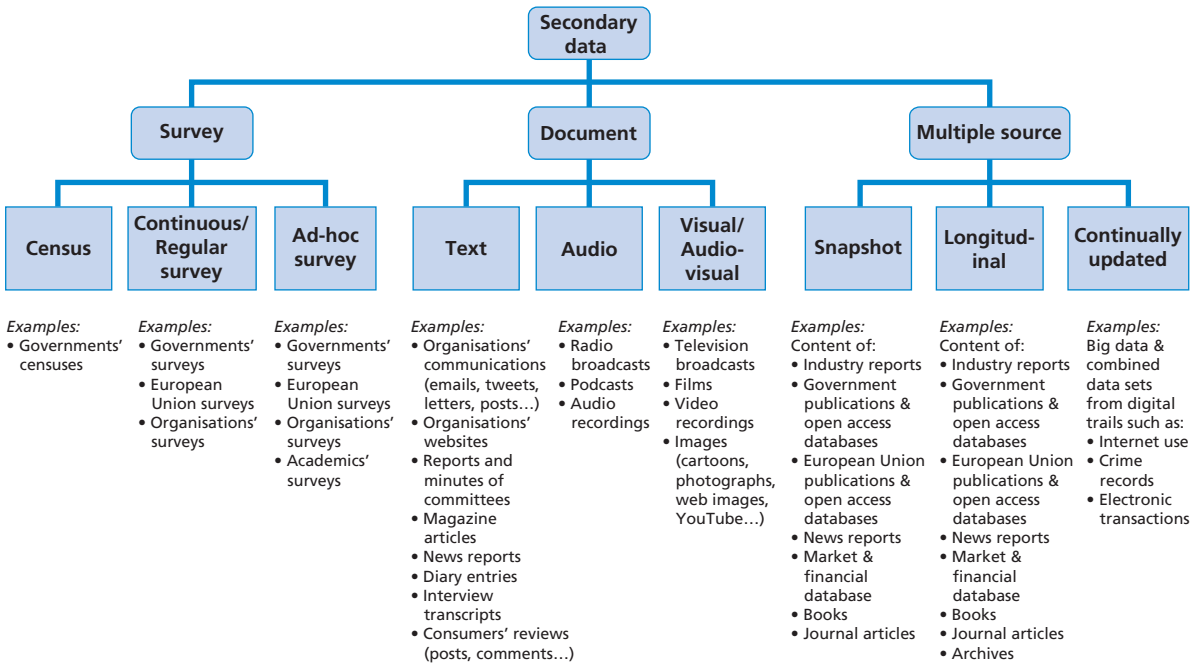


Figure 8.1 Types and examples of secondary data

Survey secondary data

Survey secondary data refers to existing data originally collected for some other purpose within a survey strategy, usually questionnaires (Chapter 11), and are normally quantitative and structured. Such data usually refer to organisations, people or households. They are made available for secondary analysis either in structured form as a matrix of data, downloadable from a larger online database (Section 12.3, Box 8.1) or as compiled data.

Survey secondary data will have been collected through one of three distinct subtypes of survey strategy: census, continuous or regular survey or ad-hoc survey (Figure 8.1). Censuses are usually carried out by governments and are unique because, unlike other surveys, participation is obligatory. Consequently, they provide very good coverage of the population from who data are collected. They include censuses of populations, which have been carried out in many countries since the eighteenth century and in the UK since 1801 (Office for National Statistics 2016a, b). Published tabulations are available via the Internet for more recent UK censuses, and the raw data can be accessed via the Internet 100 years after each census was conducted. Data from censuses conducted by many governments are intended to meet the needs of government departments as well as of local government. As a consequence, they are usually clearly defined, well documented and of a high quality. Such data are easily accessible via data gateways and archives (Section 8.5) in compiled form and are widely used by other organisations and individual researchers.



Box 8.1 Focus on management research

How the UK Household Longitudinal Study adapted to the Covid-19 pandemic

Prior to the COVID-19 pandemic about half of the data for the UK's Household Longitudinal Study 'Understanding Society', had been collected throughout the year using face-to-face interviews, the remaining data being collected using an online questionnaire. UK government self-isolation measures introduced in March 2020 meant all non-essential contact with others and unnecessary travel were stopped. Face-to-face interviewing was suspended, and all subsequent data collection was undertaken using web questionnaires. Those who could not complete the questionnaire online being telephone by an interviewer.

Initial assessment of the transition to this new data collection protocol indicates it was a success (Burton et al. 2020), in terms of avoiding a hiatus in data collection. There were, however, concerns about the impact on respondents' answers caused by people completing the questionnaire online who would not normally have done so, as well as the increased number of people responding by telephone. The authors note this 'mode effect' is being investigated more generally and users of the survey data will be advised when data are released.

Continuous and regular surveys are those, excluding censuses, which are repeated over time (Hakim 1982). They include surveys where data are collected throughout the year, such as the UK's *Living Costs and Food Survey* (Office for National Statistics 2021c) and those repeated at regular intervals. The latter include the EU Labour Force Survey (European Commission 2021a), which since 1998 has been undertaken quarterly using a core set of questions by member states throughout the European Union. This means that some comparative data are available for member states, although access to these data is limited by European and individual countries' legislation (Eurostat 2021b). Non-governmental bodies also carry out regular surveys. These include general-purpose market research surveys such as Kantar Media's Target Group Index Consumer Data. Because of the commercial nature of such market research surveys, the data are likely to be costly to obtain. Many large organisations also undertake regular surveys, a common example being the employee attitude survey. However, because of the sensitive nature of such information, it is often difficult to gain access to such survey data, especially in its raw form.

Census and continuous and regular survey data provide a useful resource with which to compare or set in context your own research findings from primary data. When using these data, you need to check both when and how they were collected, as there can be over a year between collection and publication and methods change (Box 8.1) If you are undertaking research in one UK organisation, you could use these data to place your case study organisation within the context of its industry group or division using the *Annual Business Survey* (Office for National Statistics 2021a). Aggregated results of the Annual Business Survey can be found via the UK government's statistics information gateway, the *Office for National Statistics* (Table 8.1). Alternatively, you might explore issues already highlighted by undertaking further analysis of data provided by an earlier organisation survey through in-depth interviews.

Table 8.1 Selected Internet secondary data gateways and archives

Name	Internet address	Comment
General focus		
RBA Business Information Sources	rba.co.uk	Gateway with links to business, statistical, government and country sites
UK Data Archive	data-archive.ac.uk	Archive of UK social and economic digital data
UK Data Service (UKDS)	ukdataservice.ac.uk	Gateway to and support for social, economic and population data, both quantitative and qualitative for both the UK and other countries
Wharton Research Data Service (WRDS)	whartonwrds.com	Gateway to databases in finance, accounting, banking, finance, economics, management, marketing and public policy
Mendeley data	data.mendeley.com/	Over 24 million data sets from domain-specific and cross-domain repositories including open access repositories.
Morningstar	morningstar.co.uk	Financial information, guide to companies and investment trusts, report service and market activity analysis
Country focus		
Australia: Australian Data Archive	ada.edu.au/	Archive of Australian digital research data including census. Includes data from other Asia-Pacific countries. Links to other secondary data sites
Canada: Statistics Canada	statcan.gc.ca/en/start	Gateway to statistics on economy, society and culture (including census) of Canada
China: National Bureau of Statistics	www.stats.gov.cn/english/	Gateway to China's statistics national bureau
Czech Republic: Czech Social Science Data Archive	archiv.soc.cas.cz/en	Archive of social science data about the Czech Republic
European Union: Europa	europa.eu/	Gateway to information (including press releases, legislation, fact sheets) published by the European Union
Eurostat	ec.europa	EU statistics information gateway
France: National Institute for Statistics	insee.fr/en/accueil	France's National Institute for Statistics gateway for both statistics and government publications. Much of this website is available in English

Table 8.1 (*Continued*)

Name	Internet address	Comment
Germany: Federal Statistics Office	destatis.de/EN/Homepage.html	Germany's Federal Statistical Office providing a gateway to data. Much of this website is available in English
Ireland (Eire): Central Statistics Office	cso.ie	Irish Central Statistical Office (CSO), the government body providing a gateway to Irish official statistics
Japan: Social Science Japan Data Archive	csrda.iss.u-tokyo.ac.jp/english/	Archive of social science data sets available providing details in both Japanese and English. Data sets in Japanese only
Korea: Korean Social Science Data Archive	https://kossda.snu.ac.kr/	Archive of social science statistical data including census available in Korean, English and Japanese
The Netherlands: Statistics Netherlands	cbs.nl/en-gb	Site of the Netherlands' Central Bureau of Statistics (CBS). Much of this website is available in English. Provides gateway to Statline, which contains statistical data that can be downloaded free of charge
North America: Compustat	spglobal.com/marketintelligence/en/	Financial data and supplementary items for North American Companies from S&P Global
Norway: Norwegian Social Science Data Services	nsd.uib.no/nsd/english/	Archive of social science data on Norway
South Africa: South African Data Archive	sada.nrf.ac.za	Archive of social science data such as the census on South Africa
United Kingdom: GOV.UK	gov.uk	UK government information service providing a gateway to government departments, official statistics, etc.
United Kingdom: Office for National Statistics	ons.gov.uk/ons	The official UK statistics gateway containing official UK statistics and information about statistics, which can be accessed and downloaded free of charge
United States: Census Bureau	www.census.gov	US government data about the economy and people living in the United States
World Bank	data.worldbank.org/	Global development data including sustainable development goals

Please note these links are to the homepages of these organisations, you will need to search the website to find the appropriate document.

Survey secondary data may be available in sufficient detail to provide the main data set from which to answer your research question(s) and to meet your objectives. They may be the only way in which you can obtain the required data. If your research question is concerned with national variations in consumer spending it is unlikely that you will be able to collect sufficient data of your own. You will therefore need to rely on secondary data such as those contained in the report *Family Spending Workbook* (Office for National Statistics 2021b). For some research questions and objectives, suitable data will be available in published form. For others, you may need more disaggregated data. This is likely to be available via information gateways or data archives (Table 8.1, Section 8.5). We have found that for most business and management research requiring secondary data you are unlikely to find all the data you require from one source. Rather, your research project is likely to involve time-consuming detective work in which you build your own multiple-source data set using different data items from a variety of secondary data sources (Box 8.2).

Ad-hoc surveys are usually one-off surveys and are far more specific in their subject matter. They include data from questionnaires that have been undertaken by independent researchers as well as interviews undertaken by organisations and governments. Because of their ad-hoc nature, you will probably find it more difficult to discover relevant surveys. However, it may be that an organisation in which you are undertaking research has conducted its own questionnaire or interview-based study on an issue related to your research. Some organisations will provide you with a report containing aggregated data; others may be willing to let you undertake further analyses using the raw data from their ad hoc survey. Alternatively, you may be able to gain access to and use raw data from an ad-hoc survey that has been deposited in a data archive (Section 8.5).

Document secondary data

Documents are durable repositories for text, audio, visual and audio-visual representations that may be retained and used in different times and spaces (Lee 2021). It is these media representations that comprise document secondary data. Such data can be used on their own, with primary data and alongside other sources of secondary data, for example, for business history research within an archival research strategy. **Document secondary data** are data that, unlike the spoken word, endure physically (including digitally) as evidence, allowing data to be transposed across both time and space and reanalysed for a purpose different to that for which they were originally collected (Lee 2021). Invariably documents portray what their creator(s) wished them to represent rather than what actually happened or, in the case of a policy, what would actually happen (Lee 2021). This means you will need to evaluate the suitability of such data to answering your research question (Section 8.6).

Document text media include notices, correspondence (including emails), minutes of meetings, reports to shareholders, diaries, transcripts of speeches and conversations, administrative and public records as well as text of web pages (Box 8.3) such as reviews. Text media can also include books, journal and magazine articles and newspapers. Although books, articles, journals and reports are a common storage

Box 8.2
Focus on student research

SME success: winning new business

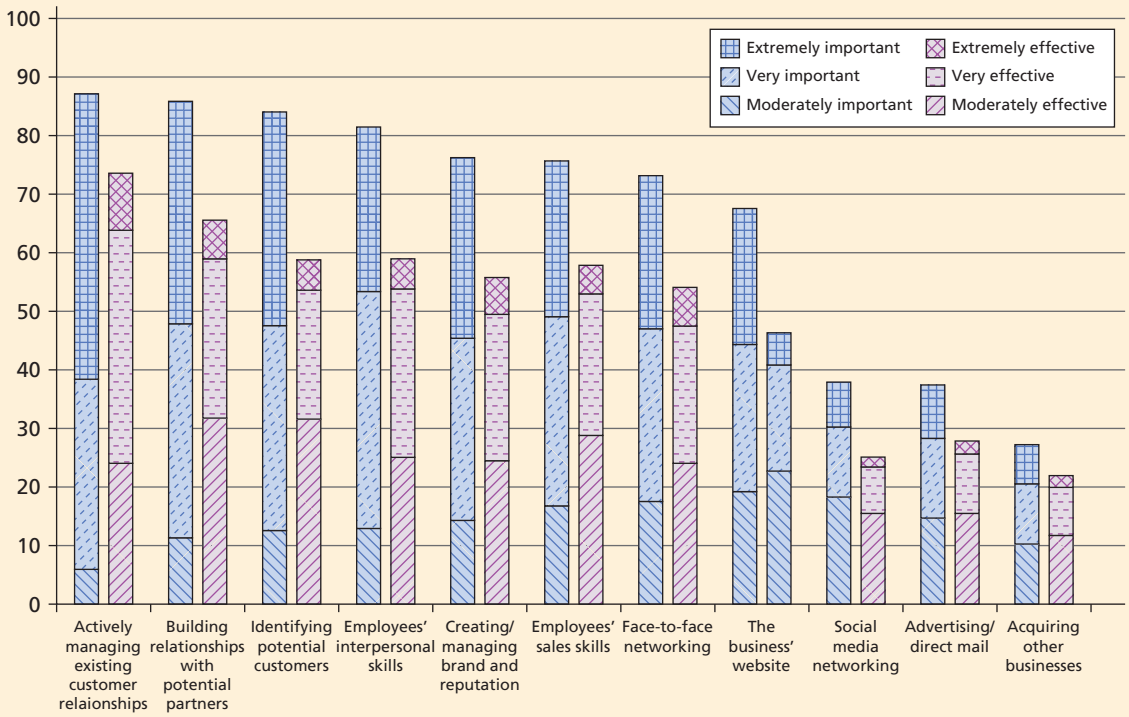
Using secondary data to contextualise research findings

Prisha's research project was focussed on how Asian ethnic minority small businesses develop their customer bases. Working with the Asian Business Chamber of Commerce in the city where her university was located, she was planning to meet and interview a sample of at least 30 of these small business owners across a variety of sectors.

Prisha was also keen to contextualise her findings. She searched online using the phrases 'SME customer base development' and 'SME winning new business'. The second of these phrases displayed a list of links to pages including two titled 'SME Success: Winning New Business Kingston Smith'. Prisha clicked on these and discovered a link to a research report *SME Success: Winning New Business* (Gray et al. 2016). She downloaded the 20-page 'highlights and executive summary' report. This outlined the key findings of research using data from a questionnaire completed by over 1,000 UK SMEs and included a number of useful graphs including one showing the importance and effectiveness of different ways of generating new sales, and another the importance and effectiveness of different enablers for winning new business.

Prisha felt that, ideally, she would like to use the precise data from which the graph was drawn for her research project. She therefore decided to search for the report's title and its three authors. This revealed that a full copy of the report, including tables containing the data she needed, could be downloaded from the platform academia.edu as well as the authors' universities' research repositories.

Importance and effectiveness of enablers for winning new business (%)



Source: Gray et al. (2016). ©Kingston Smith LLP, reproduced with permission
Figure redrawn to meet current accessibility requirements for online material.

medium for compiled secondary data, the text can be important raw secondary data in its own right. You could analyse the text of companies' annual reports to establish the espoused attitude of companies in different sectors to the global climate crisis. Using content analysis (Section 12.2) such text secondary data could also be used to generate statistical measures such as the frequency with which associated issues were mentioned.

Audio and audio-visual media, such as archived (on-demand) recordings of radio and television programmes, speeches, audio blogs and podcasts can, like other forms of document secondary data, be analysed both quantitatively and qualitatively by transcribing the spoken words (Section 10.7) and analysing just the text (Sections 12.2 and 13.4). However, this ignores other aspects of these data that may be important such as the tone of voice and visual imagery. This emphasises how the analysis of these media as data can be considered a form of (secondary) observation in which you take on the role of non-participant observer (Section 9.2). This may involve using online materials to conduct secondary observation. Such material would have been produced and uploaded for another reason without considering that it might be used subsequently for research. This raises a number of potential ethical issues (Sections 6.6 and 6.7), including those related to consent and the use of these data, especially where as a secondary observer you are unable to contact those being observed to negotiate consent. Despite this the potential of using publicly available audio and audio-visual documents is considerable. Observing the reporting of a FT top 100 company's annual meeting of shareholders by a number of news media companies could provide you with data to analyse and compare when you are unable to attend events in real time. Alternatively, observing a range of broadcast advertisements may give insights into organisations' marketing strategies.

Document visual data can be classified into three media groups: two-dimensional static, two-dimensional moving and three-dimensional lived (Bell and Davison 2013). **Two-dimensional static media** include photographs, pictures, cartoons, maps, graphs, logos and diagrams, whereas **two-dimensional moving media** include films, videos, interactive web pages and other multi-media (Box 8.7), often being combined with audio. In contrast, **three-dimensional and lived media** include architecture and clothing. As a consequence, visual documentary secondary data may be found, for example, in organisations annual reports or other documents such as web pages and research reports (Box 8.3). Alternatively, it may be found in news reports and television programmes as well as on demand and subscription-based online streaming services such as Netflix and Amazon Prime.

Business and management researchers are making greater use of visual and to a lesser extent audio documents as data. Much of these are web-based materials generated by organisations and online communities. While data stored in the majority of web pages, such as blogs and those set up by social networking sites' user groups, were never intended to be used in this way, they can still provide secondary data for research projects. There are, however, a number of issues related to using such data, including locating it, evaluating its usefulness in relation to your research question and objectives ensuring any associated ethical concerns are met (Sections 6.5, 6.6 and 9.6).

Records stored in public, private and not-for-profit organisations' databases, as part of their day-to-day business operations are another source of document data that, when reanalysed for a different purpose, are secondary data. These include structured text-based data such as details of employees, members and customers and, as illustrated by the opening vignette, their interactions, such as customer transactions and mobile



Box 8.3
Focus on student research

Using organisation-based document secondary data

Sasha's work placement company had a problem. Independent review websites suggested that their customers' initial complaints were often not addressed, with minor issues often developing into major problems. Sasha was asked by her workplace mentor to investigate how the company dealt with complaints by customers. Her mentor arranged for her to have access to copies of customers' emails and letters of complaint and the replies sent by the organisation's customer relations team (text document secondary data) over the past 12 months.

Reading through these customers' emails and letters, Sasha soon realised that many of these customers complained in writing, sometimes attaching photographs, because they had not received a satisfactory response when they had complained earlier by telephone. She therefore asked her mentor if audio recordings were kept of customers' telephone complaints. Her mentor said that audio recordings of all telephone conversations, including complaints (text document secondary data), were stored in the customer relations database, each being given a unique reference number that could be matched to the customers' written complaints.

On receiving details of the audio data stored in the customer relations' database, Sasha realised that the next stage would be to match the complaints letters and emails and photographs with the audio recordings. The latter, she hoped, would enable her to understand the context of the written complaints and, hopefully, establish why the customer had written. However, she realised this would be an extremely time-consuming task, so decided to select a purposive sample of the audio recordings.

telephone calls, as well as unstructured audio and visual media data (Box 8.3). Where you are able to gain access and satisfy ethical concerns, it may be possible to link and re-analyse such data to answer your research question (Box 8.3). Alternatively, like Cohen and Duberley (2013) you may, as a non-participant observer use audio (or audio-visual recordings) interviews conducted with business leaders. While you will not have been present when the interviews were recorded, you will still be able to observe these interviews and have the advantage of being able to replay and re-observe the recordings as often as you need to, for example, undertake a structured observation (Section 9.4).

For your research project, the document sources available depend on whether you have been granted access to an organisation's records as well as on your success in locating data archives and other Internet, commercial and library sources (Section 8.5). Access to an organisation's data will be dependent on gatekeepers within that organisation (Sections 6.2–6.5). In our experience, those research projects that make use of document secondary data often do so as part of a within-company action research project or a case study of a particular organisation (Box 8.3).

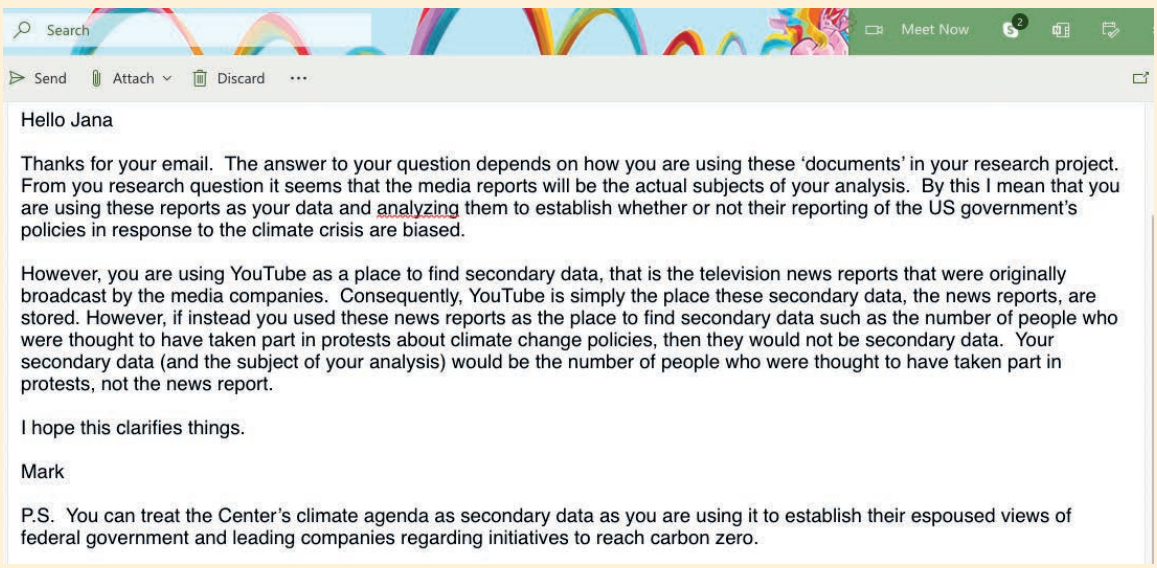
When you analyse text and non-text materials, such as a web page, television news report or news media article directly as part of your research; you are using those materials as secondary data. However, often such materials are just the source of your secondary data, rather than the actual secondary data you are analysing (Box 8.4).

Box 8.4 Focus on student research

When are the reports in newspapers and on YouTube secondary data?

Jana's research question was, 'To what extent is the media's reporting of United States Government's policies on the climate crisis and their impact on business change biased?' She had downloaded and read journal articles about the climate crisis as well as a number of the United States' Center for Climate and Energy Solutions briefs, factsheets and policy documents. The latter included the Center's (Ye et al. 2019) document *Getting to Zero: A US Climate Agenda,* which she used to establish the core strategies required for achieving net zero emissions. She had also obtained copies of reports in quality newspapers about climate change reform in the United States for the past three years and found YouTube clips of television news reports uploaded by media companies such as the NBC News, Fox Business Networks and CNN.

As she began to write the methodology chapter of her research project, Jana became confused. She knew that the journal articles about the case for climate change and its impact on business were literature rather than secondary data. However, she was unclear whether the Center's climate agenda, the media reports and the YouTube clips were secondary data. She emailed her tutor who responded:


Search

Meet Now

Send Attach Discard ...

Hello Jana

Thanks for your email. The answer to your question depends on how you are using these 'documents' in your research project. From you research question it seems that the media reports will be the actual subjects of your analysis. By this I mean that you are using these reports as your data and analyzing them to establish whether or not their reporting of the US government's policies in response to the climate crisis are biased.

However, you are using YouTube as a place to find secondary data, that is the television news reports that were originally broadcast by the media companies. Consequently, YouTube is simply the place these secondary data, the news reports, are stored. However, if instead you used these news reports as the place to find secondary data such as the number of people who were thought to have taken part in protests about climate change policies, then they would not be secondary data. Your secondary data (and the subject of your analysis) would be the number of people who were thought to have taken part in protests, not the news report.

I hope this clarifies things.

Mark

P.S. You can treat the Center's climate agenda as secondary data as you are using it to establish their espoused views of federal government and leading companies regarding initiatives to reach carbon zero.

Multiple-source secondary data

Multiple-source secondary data are found in databases compiled from documents, survey data, continuous monitoring or an amalgam of these. These can include data that are being added to continually such as records of transactions, as well as data that are added to less frequently on an ad-hoc basis or collected only once. The key factor is that different data from different sources have been combined to form another data set prior to your use.

Snapshot data sets

One of the more common types of multiple-source data that you are likely to come across are compilations of company information stored in databases such as *Amadeus*

Table 8.2 Selected online databases with potential secondary data

Name	Secondary data
Amadeus	Financial, descriptive and ownership information for companies in Europe
British Newspapers Archive	Searchable full text and images of British newspapers from 1800 to 1950s
Dataessential Reports	Reports including KeyNote and markets, covering a range of sectors
Datastream	Global financial and macro-economic data for 175 countries and 65 markets
Euromonitor International	Market research database searchable by industry, product, country etc. for 210 countries
Mintel Reports	Detailed market analysis reports on wide range of sectors
Nexis	Full text of UK national and regional newspapers. Increasing international coverage, company profiles and industry data
Regional Business News	Full text of regional business publications for USA and Canada
Times Digital Archive 1785–2014	Digital editions (including photographs, illustrations and advertisements) from *The Times* national newspaper (UK)
Tripadvisor	Reviews on travel and leisure activities by customer as well as a range of forums
Trust Pilot	Reviews on a wide range of businesses worldwide as well as a range of forums

(Table 8.2). This contains comparable financial data about over 21 million public and private European companies, often for a specified date to provide a 'snapshot'. Other multiple-source secondary data snapshots include the various share price listings for different stock markets reported in the financial sections of quality newspapers. While newspapers are available online, you may need to subscribe to view them. Fortunately, many university libraries keep paper copies of the most recent editions of newspapers, microfilm of older editions and provide online access through indexing databases such as *Nexis* and, for older newspapers, the *British Newspapers Archive* (Table 8.2).

Secondary data from different sources can also be combined, if they have the same geographical basis, to form area-based data sets (Hakim 1982). These usually draw together quantifiable information and statistics. They are commonly compiled by national governments for their country and their component standard economic planning regions and by regional and local administrations for their own region. Such area-based multiple-source data sets are available through national governments' information gateways, regional administration's information gateways or data archives (Table 8.1). A widely used European example of such snapshot data includes the European Union's annual online publication *Eurostat Regional Yearbook* (Eurostat 2021a).

Longitudinal data sets

The way in which a multiple-source data set has been compiled will dictate the sorts of research question(s) or objectives for which you can use it. One method of compilation is for you to extract and combine one or more comparable variables from a number of surveys or from the same snapshot survey that has been repeated over time to provide **longitudinal** data. For many taught courses' research projects, this is one of the few ways in which you will be able to obtain data over a long period. Another way of obtaining longitudinal data include using a series of company documents, such as appointment letters or public and administrative records, as sources from which to create your own longitudinal secondary data set. Other examples of such data sets include the UK Employment Department's stoppages at work data held by the UK Data Archive (Table 8.1), the *European Statistical Recovery Dashboard* (Eurostat 2021b); and those derived by researchers from nineteenth- and early twentieth-century population census returns, the raw data for which can often be accessed through national governments' information gateways such as the UK's Office for National Statistics (Table 8.1). Longitudinal multiple source data can also be audio or visual; for example, a series of interviews with the same businessperson, photographs of the same retail park over a number of years or advertisements for a particular product for a specified time period. Alternatively, you might use an existing database of reviews and extract your data from this (Box 8.5, Table 8.2).



Box 8.5 Focus on management research

Managerial responses to online reviews

It has now become a strategic imperative for organisations to respond proactively to customers' complaints irrespective of whether they are made directly or on social media sites. Yet, while there is consensus regarding the positive relationship between management responses and a firm's online reputation and performance, less is known about the best way to respond to different reviews. Research by Sheng et al. (2019) analysed hotels' social media reviews over time to examine the effectiveness of different management response styles on returning customers' future reviews.

To analyse response styles and their impact on customer ratings, data were collected from a 'leading travel platform' (Sheng et al. 2019: 319) for a sample comprising 1,063 hotels in London. The entire review history for these hotels was downloaded covering a 15-year period. Sheng and colleagues extracted repeat reviewers data from this sample, defining repeat reviewers as those who had provided multiple reviews for the same hotel at different times. They ensured that each reviewer had at least two reviews of the same hotel, that the reviews were in English and removed duplicate reviews. The final sample comprised 40,604 reviews of 770 hotels from 13,610 distinct reviewers and the 23,106 management responses to these reviews.

Data comprising each customer's numerical rating for each stay in a specific hotel allowed changes in a customer's rating to be calculated. Data on management's response to each review comprised: whether the view received a response, the time taken to respond, the length of response (word count) and a sentiment score of this response rating it on a scale from positive to negative. Through using big data text analytics to create these data, Sheng and colleagues were able to establish whether the subsequent rating by a customer differed depending on whether or not the review received a response, the response style (speed of response, length of response and sentiment) and whether the response style differed depending on the customer's rating.



Box 8.5 Focus on management research (*continued*)

Managerial responses to online reviews

Sheng and colleagues found that customer ratings improved when their previous reviews had received a response from hotel management. This influence was highest for customers who had previously been low satisfaction customers and only visited once before. They also found that detailed management responses were more likely to have a positive impact on the future ratings of repeat customers concluding that providing longer responses, especially longer positive ones, are effective in improving review ratings by customers.

Data can also be compiled for the same population over time using a series of 'snapshots' to form **cohort studies**. Such studies are relatively rare, owing to the difficulty of maintaining contact with members of the cohort from year to year. An example is the UK television series *Seven Up*, which has followed a cohort since they were schoolchildren at seven-year intervals since 1964 (63 Up 2019; Section 5.6).

Continually updated data sets

The final form of multiple-source secondary data is compiled from digital sources that are being updated continually (as highlighted in our opening vignette). Where these are being collected on a very large scale they are referred to as **big data**. Although there is no real agreement on what big data are, there are unique features often referred to as the three Vs (George et al. 2016):

- volume – the enormous size of the data set due to the aggregation of large numbers of variables and the even larger number of observations for each of them;
- velocity – the speed in which data are being constantly added in real time or near real time from a wide variety of (digital) sources;
- variety – the multiplicity of unstructured and structured data being added.

To these some authors (Sena et al. 2019) have added two further Vs:

- veracity – the biases, noises and inconsistencies within the data;
- validity – whether the data are correct.

They have noted that they are increasingly available through the Internet of Things or Artificial Intelligence (AI).

Big data comprise predominantly unstructured data, being more comprehensive in terms of both the number of variables and the number of observations and offering greater granularity, that is a deeper level of detail, than traditional data sources (George et al. 2016). With big data, rather than collecting data from, for example, a sample of employees' using a survey strategy: researchers, subject to ethical approval, focus on the entire population of employees using digital data collected in real time.

Big data can therefore be thought typically as being massive and complex multiple source secondary data sets and can be drawn from a wide variety of online sources, public records or transactions that are continuously updated in large quantities. The combinations

of volume, velocity and speed result in data sets that often run into millions of observations, meaning that data science applications are required for analysis. While big data and the associated data science applications for their analysis are increasingly used in business and management research (George et al. 2016), even if such data are available, their use may not be practicable for an undergraduate or masters' research project due to the specialist software and computing power required for their analysis.

8.3 Advantages of secondary data

Fewer resource requirements

For many research questions and objectives a key advantage of using secondary data is the enormous saving in resources compare to collecting your own (primary) data. This comprise both the time and money you need as a researcher (Vartanian 2011) and that now required from the organisations or individuals from whom data were collected originally (Lee 2021). In general, using secondary data is much less expensive and time-consuming than collecting the data yourself, especially when data can be downloaded in a format compatible with your analysis software. You will also have more time to think about theoretical aims and substantive issues, and subsequently you will be able to spend more time and effort analysing and interpreting the data. If you need your data quickly, secondary data may be the only viable alternative (Box 8.6). In addition, they are often of higher quality than could be obtained by collecting your own (Smith 2008).



Box 8.6
Focus on management research

More accountable, more ethical, yet less trusted – using secondary data from databases to investigate the corporate governance and ethical practices

Fotaki and colleagues' (Fotaki et al. 2021) research reveals that emerging technology firms over-conform with respect to their ethical and corporate governance practices. Yet, despite this over-conformity, such firms are considered to have lower legitimacy levels compared to their non-emerging technology counterparts.

This research used secondary data from two databases. First, US firms providing 'Computer-programming, data processing and other computer related services (SIC code 737)' were selected from the Worldscope database. Where possible, these firms were then matched with other '73-Business Services firms' more generally (SIC code73, excluding SIC code 737), which had the same size, risk and growth characteristics. This resulted in 68 matched pairs of US-based firms (136 individual firms) for the period 2009–2017.

For each of these 136 firms data were subsequently extracted from the Thomson Reuters ASSET4 database, a database widely used in corporate governance and sustainability research. Data on corporate governance was compiled from five database categories: board structure, compensation policy, shareholder rights, vision and strategy, which were used to create an overall score out of 100. Environmental performance was represented using the data from the 'social/community' category of the ASSET4 database. This measure was based on summing the 'yes' responses to five yes/no questions that Fotaki and colleagues list in their paper. Organisational legitimacy was measured using negative media coverage based on the occurrence (or non-occurrence) of six types of environmental, social and governance controversies, again listed in the ASSET4 database.

Unobtrusive

Using secondary data within organisations may also have the advantage that, because they have already been collected, they provide an unobtrusive measure. Cowton (1998) refers to this advantage as eavesdropping, emphasising its benefits for sensitive situations. Using secondary data also removes the need to collect data face-to-face reducing potential risks to researcher safety (Section 6.7).

Easier ethical review

Secondary data are often in the public domain and many data sets have already been anonymised (Lee 2021). Despite this, it is probable that your university will still require you to subject your research to ethical review (Section 6.6). Within this you will still need to consider issues such as the potential to cause harm to participants and how this will be minimised, consent for data to be used for research purposes even where available publicly on social media data (Kozinets 2020) and data management (Section 6.7).

Longitudinal studies feasible

For many research projects time constraints mean that secondary data provide the only possibility of undertaking longitudinal studies. This is possible either by creating your own (Section 8.2) or by using an existing multiple-source data set (Box 8.6). Comparative research can also be undertaken where such data are available. This may be of particular use for research questions and objectives that require regional or international comparisons (Box 8.12). However, you need to ensure that the data you are using were collected and recorded using methods that are comparable. Comparisons relying on unpublished data or data that are currently unavailable in the required format, such as the creation of new tables from existing census data, are likely to be expensive, as such tabulations will have to be specially prepared. Although your research is dependent on access being granted by the owners of the data, principally governments, many countries are enshrining increased rights of access to information held by public authorities through freedom of information legislation such as the UK's Freedom of Information Act 2005. This gives a general right to access to recorded information held by public authorities, although a charge may be payable. However, this is dependent upon your request not being contrary to relevant data protection legislation or agreements (Section 6.8).

Comparative and contextual data

Often it can be useful to compare data that you have collected with secondary data. This means that you can place your own findings within a more general context (Box 8.2) or, alternatively, triangulate your findings (Section 5.4). If you have used a questionnaire, perhaps to collect data from a sample of potential customers, secondary data such as a national census can be used to assess the generalisability of findings, in other words how representative these data are of the total population (Section 7.5).

Potential unforeseen discoveries and new insights

Reanalysing secondary data can also lead to unforeseen or unexpected new discoveries and new insights (Box 8.7). Dale et al. (1988) cite establishing the link between smoking



Box 8.7 Focus on management research

Whistle while you work?

Using audio-visual documents to provide new insights into puzzles

In their 2017 *Organisation Studies* paper, Griffin and colleagues use secondary data to explore socio-cultural expectations about working that prepare young people for their future lives in organisations, a concept they term 'organizational readiness' (Griffin et al. 2017: 869). The secondary data for their research were the 54 animations considered by the Disney Corporation to be their best and most well-known animations, all of which were available in DVD format (now available via streaming services such as Disney+).

The 54 DVDs comprised both traditional animations such as *Snow White and the Seven Dwarfs* (released 1937) and *The Jungle Book* (released 1967); and more contemporary animations such as *Frozen* (released 2013) and *Big Hero 6* (released 2014). Each was watched by all authors who took extensive notes on work related events, recording aspects such as gender, the types of work portrayed and how the work was characterised. Subsequently, the researchers undertook an in-depth analysis of the issues relating to work that had been identified.

Their analysis revealed that in Disney's traditional animations, work is represented as no place for women and especially not strong women. Within this norm, females were depicted as rejecting organisations in favour of the home. Griffin and colleagues comment that, in terms of organisational readiness, where girls were portrayed as workers they were not acting as women. In contrast in contemporary animations, although storylines are similar, passivity and favouring the home is replaced by females being active and strong or helping others to face up to their responsibilities. This, they argue, highlights that strength rather than weakness is now desirable and encapsulates the expectation that women should perform actively in the workplace.

Griffin and colleagues consider that while early animations may arouse fear and the desire for rescue in viewers, the more recent may offer these viewers a sense of their own strength and refusal to be passive. This, they argue, offers new insights into women's organisational readiness. Young viewers watching both traditional and contemporary animations are presented with a paradox: girls must be both weak and strong and must work and not work.

and lung cancer as an example of such a serendipitous discovery. In this example the link was established through secondary analysis of medical records that had not been collected with the intention of exploring any such relationship.

Public scrutiny possible

Unlike data that you collect yourself, secondary data, especially when in the public domain, provide a source that is often permanent and available in a form that may be checked and reassessed relatively easily by others (Denscombe 2017). This means that your analysis and research findings are more open to public scrutiny potentially enhancing their credibility.

8.4 Disadvantages of secondary data

Original purpose may not match your need

Data that you collect yourself will be collected with a specific purpose in mind: to answer your research question(s) and to meet your objectives. Unfortunately, secondary data will

have been collected for a specific purpose that differs, at least to some extent, from your research question(s) or objectives (Denscombe 2017). Consequently, the data you are considering may be inappropriate to your research question. If this is the case then you need to find an alternative source or collect the data yourself. More probably will be able to answer your research question(s) or address your objectives only partially. Common reasons for this include the data being collected a few years earlier and so not being current, the precise method of collection differing between the original data sources making precise comparison impossible and secondary data leaving 'things out because the people whose information we are using don't think it's important, even if we do' (Becker 1998: 101).

Where the data are non-current and you have access to primary data, such as in a research project that is examining an issue within an organisation, you are likely to have to combine secondary and primary data.

Access may be difficult or costly

Where data have been collected for commercial reasons, gaining access may be difficult or costly. For example, market research reports, such as those produced by Mintel or Dataessential (Table 8.2), may be costly if those you require are not available online via your university's library.

Aggregations and definitions may be unsuitable

Much of the secondary data in published reports is likely to have been aggregated as part of the compilation process. These aggregations, while meeting the requirements of the original research, may not be quite so suitable for your research. Alternatively, the documents you are using may represent interpretations of those who produced them, rather than offer an objective picture of reality.

Definitions of variables for which data have been collected may not be the most appropriate for your research question(s) or objectives. In addition, where you are intending to combine data sets, the questions used to collect what appears to be the same data may have been revised over time (Box 8.8).



Box 8.8 Focus on student research

Changing questions

As part of his research, Idris wished to incorporate longitudinal census data on the changing composition of UK population's legal marital status. Using the UK Office for National Statistics website (Table 8.1), he quickly found and downloaded the most recent data, which classified people using one of seven possible response options:

- Never married and never registered a civil partnership
- In a registered civil partnership
- Separated, but still legally married
- Divorced
- Formerly in a civil partnership which is now legally dissolved
- Widowed
- Surviving partner from a registered civil partnership.

Further research revealed this classification had been developed for the 2021 Census. Idris decided to look at the questions that had collected these data in





Box 8.8 Focus on student research (*continued*)

Changing questions

each UK National Census. He downloaded the questionnaires used for each Census from the UK Data Service's website (UK Data Service 2021) noting the 2021 UK National Census question on marital status asked, 'On 21 March 2021, what is your legal marital or civil partnership status?' In contrast, the 2011 question asked, 'On 27 March 2011, what is your legal marital or same-sex civil partnership status?' while the 2001 question asked, 'What is your marital status (on 29 April 2001)?' (UK Data Service 2021). Idris also noted that possible response options for the question asked in each of these years also differed, reflecting changes in social norms and legislation.

No real control over data quality

Although many of the secondary data sets available from governments and data archives are likely to be of a higher quality than you could ever collect yourself, there is still a need to assess the quality of these data. Wernicke (2014) notes that although many national statistical agencies are obliged by national law to provide data of high quality, this may not be the case. Looking at official economic data, he argues that these are distorted by the informal economy, hidden money and false and non-responses.

Original purpose can affect how data are presented

When using documentary data such as that presented in a report, you also need to be aware of the purpose of that report and the impact that this could have on the way the data are presented. This is most likely for internal organisational documents and external documents such as published company reports and newspaper reports. These data can be argued to not be an objective representation of reality but an expression of the values of those who produced the documents (Lee 2021). While this is unlikely to be an issue where your research is concerned with how something has been reported or different viewpoints, it still does not remove the need to evaluate all data sources carefully.

Reichman (1962; cited by Stewart and Kamins 1993) emphasises this point referring to newspapers, although the sentiments apply to many documents. He argues that newspapers select what they consider to be the most significant points and emphasise these at the expense of supporting data. This, Reichman states, is not a criticism as the purpose of the reporting is to bring these points to the attention of readers rather than to provide a full and detailed account. However, if we generalise from these ideas, we can see that the culture, predispositions and ideals of those who originally collected and collated the secondary data will have influenced the nature of these data at least to some extent. This is especially likely for online sources where there is increasing concern regarding the possibility of fake information including news, reports and reviews of products being posted (Box 8.9). For these reasons you must evaluate carefully any secondary data you intend to use (Section 8.6).

Box 8.9 Focus on research in the news

UK competition watchdog to probe Google and Amazon over fake reviews

Competition and Markets Authority says tech groups may not be doing enough to protect consumers

By Kate Beioley

The UK competition regulator has opened an investigation into Amazon and Google over fake reviews on their sites that may be duping consumers.

The Competition and Markets Authority said the two companies may not have done enough to detect and remove fake reviews or to take action against those responsible for them. The regulator said it could take the tech companies to court if it found they had broken consumer protection law.

The update follows a Financial Times investigation into Amazon's product reviews last year, which exposed a lucrative ecosystem in which users were being paid to leave thousands of five-star ratings on its site.

An investigation by Which? in February revealed an ecosystem of websites offering review manipulation services designed to game Amazon Marketplace listings. The company said it had uncovered 'a thriving industry where potentially hundreds of thousands of [reviews are] bought and sold for as little as £5 each'.

The CMA said on Friday that Amazon may have failed to prevent sellers from manipulating product listings, for example by taking positive reviews from other products and using them on their own. It has also been working with other social media sites including Instagram and Facebook in connection with the trading of fake reviews. Facebook promised in April to ban or suspend users who repeatedly set up groups and profiles to trade fake or misleading reviews, including fraudulent negative write-ups used by rivals to slam competitors.

'Our worry is that millions of online shoppers could be misled by reading fake reviews and then spending their money based on those recommendations,' said Andrea Coscelli, the CMA's chief executive. 'Equally, it's simply not fair if some businesses can fake five-star reviews to give their products or services the most prominence, while law-abiding businesses lose out.'

He added: 'We are investigating concerns that Amazon and Google have not been doing enough to prevent or remove fake reviews to protect customers and honest businesses. It's important that these tech platforms take responsibility and we stand ready to take action if we find that they are not doing enough.'

In a statement, Amazon said: 'To help earn the trust of customers, we devote significant resources to preventing fake or incentivised reviews from appearing in our store.

Box 8.9 (*continued*)

We work hard to ensure that reviews accurately reflect the experience that customers have had with a product.'

It added: 'We will continue to assist the CMA with its inquiries and we note its confirmation that no findings have been made against our business.'

Google said: 'Our strict policies clearly state reviews must be based on real experiences, and when we find policy violations, we take action — from removing abusive content to disabling user accounts. We look forward to continuing our work with the CMA to share more on how our industry-leading technology and review teams work to help users find relevant and useful information on Google.'

FT *Source:* 'UK competition watchdog to probe Google and Amazon over fake reviews' Kate Beioley, FT.Com, 25 June 2021, © The Financial Times

8.5 Searching for and locating secondary data

Unless you are going to answer your research question and meet your objectives by analysing one specific secondary data set that you already know well, your first step will be to ascertain the data you need. You will then need to establish whether the data you need are likely to be available.

The breadth of secondary data discussed in Section 8.2 emphasises that, despite the ubiquity of the Internet, potential secondary data are still stored in a variety of locations. Locating relevant secondary data requires detective work, which has three interlinked stages:

1. ascertaining the data required;
2. establishing their likely availability;
3. sourcing the precise data.

Ascertaining the data required

Your research question(s) (Section 2.5), objectives (Section 2.6), the overall purpose of your research (Section 5.3) and the literature you have already reviewed (Chapter 3) will guide you in ascertaining the data you require. While it is unlikely you will be able to meet all of your data requirements precisely, it is important to have as clear an idea as possible of the data which you wish to obtain.

For some research questions, particularly where you adopt a deductive approach and wish to use a quantitative research design you are likely to be able to establish precisely which data variables you would require in an ideal world. Here we recommend you follow a process similar to that outlined in Section 11.3 in relation to designing questionnaires and consider the advice offered in Section 9.4 regarding data collection for structured observation.

For other research questions, where you adopt an inductive approach and wish to use a qualitative or mixed methods research design you will not be able to state precise data variables. However, you still need to establish those themes you wish to explore to answer your research question and meet your objectives. Here we recommend you follow

the advice offered in Section 10.5 in relation to developing themes for questioning when preparing for semi-structured or in-depth interviews. Advice in Section 9.3 regarding data collection for participant observation is also worth noting here, particularly as it highlights how as data collection progresses you will become clearer regarding your precise focus, and as a result the data required.

Establishing likely availability

There are a number of clues regarding availability of the secondary data you require. As part of your literature review you will have already read journal articles and books on your chosen topic, which in some cases will include the data as an online appendix. Where these have made use of secondary data (as in Box 8.5), they will provide you with an idea of the sort of data that are likely to be available, often providing a reference to the source. Where these refer to secondary stored in online databases or multiple-source or survey reports, the original source is usually relatively easy to find. Quality national newspapers are also a good source as they often discuss summary findings of recent research (Box 8.9).

Box 8.10 Focus on research in the news

Harvard's 'teaching power' puts business school in the lead for influence

New table provides a different measure to citations in academic journals

By Andrew Jack

Harvard tops the list of the world's most influential business schools based on teaching power — a new measure of how much their academics' work is used on other business courses.

Other institutions with a faculty whose books on business, accounting, marketing and economics are widely recommended by their peers include Warwick and Portsmouth in the UK, the Sloan school of management at the Massachusetts Institute of Technology and Kellogg at Northwestern in Chicago.

The ranking, compiled for the Financial Times by Open Syllabus, a US non-profit organisation, tracks the extent to which the work of professors and their business schools is assigned to students. It provides a different measure to the citations received from researchers in academic journals.*

'Universities do two things: teach and research,' says Joe Karaganis, director of Open Syllabus. 'Research leaves a public record but teaching has been a black box. Faculty get credit for published work cited in journals. We hope we can help revalue teaching by helping them to claim credit for work they do with significance in the classroom.'

*The hyperlink to the full teaching power ranking is:
https://public.tableau.com/app/profile/joe.karaganis2705/viz/BusinessSchoolTeaching/Dashboard1

Box 8.10 (*continued*)

Karaganis says his project could encourage the wider sharing of courses and help students prepare for study. It could also provide greater credit to academics for their teaching at a time when the focus on performance is concentrated on research.

The 'teaching power' ranking has been formulated by calculating the business publications with the most references in course descriptions and reading lists since 2015. These citations must be freely available online and credited to the business schools where the authors are based, retired from or with which they have a long association.

The 'teaching power' ranking draws from 5m titles cited in more than 7m syllabuses in nearly 7,400 universities in 96 countries. It is dominated by US colleges followed by those in the UK and Canada.

Across all subjects taught in universities, William Strunk's classic *Elements of Style* is in top position and Karl Marx's *The Manifesto of the Communist Party* is fourth, ahead of Plato's *The Republic*.

But the largest single number of syllabuses, nearly 600,000, are in business studies. Many of the syllabuses for business courses made available online are from institutions in the UK that cite works by other British academics. This helps to explain the high placings achieved by several UK schools. The analysis excludes institutions in countries where concern about political persecution could put teachers at risk.

Open Syllabus made its assessment based on four academic disciplines that it was able to categorise with a machine-learning algorithm. However, it could not easily distinguish the precise courses or level of study in which publications are cited, the size or status of the different classes or how widely the assigned books are actually read.

Points were awarded for the number of citations of each work divided between the number of authors who could be associated with a particular business school as their principal employer. The works must be on reading lists produced for courses since 2015 to provide a reasonable degree of "freshness".

Most highly cited texts in business, marketing, accounting, economics

1. *Research Methods for Business Students* | Saunders, Lewis, Thornhill
2. *Marketing Management* | Kotler, Keller
3. *Principles of Marketing* | Kotler, Armstrong
4. *Exploring Strategy* | Johnson, Whittington, Scholes
5. *Management and Organisational Behaviour* | Mullins
6. *Business Research Methods* | Bell, Bryman
7. *Principles of Corporate Finance* | Brealey, Myers, Allen
8. *Organizational Behaviour* | Huczynski, Buchanan
9. *Managerial Accounting for Managers* | Noreen, Brewer, Garrison
10. *Operations Management* | Slack, Brandon-Jones, Johnston

Box 8.10 (*continued*)

11. *Investments* | Bodie, Kane, Marcus
12. *Contemporary Strategy Analysis* | Grant
13. *Corporate Finance* | Ross, Westerfield, Jaffe
14. *Microeconomics* | Pindyck, Rubinfeld
15. *Organizational Culture and Leadership* | Schein

FT Source: Abridged from 'Harvard's teaching power puts business school in the lead for influence', Andrew Jack, FT.Com, 31 May 2021. © 2021 The Financial Times.

More generally, indexes and catalogues of data archives can provide clear insights about the data available. However, the potential availability of data from online communities, organisations and other sources can be more difficult to establish.

Archives and databases

Tertiary literature such as indexes and catalogues to online databases and archives can also help you establish the likely availability of secondary data (Section 3.4). Your university library will have subscriptions to a number of these online databases (Table 8.1) and is well worth browsing to ascertain the data available. Online searchable data archive catalogues, such as for the UK Data Archive, may prove a useful source of the sorts of secondary data available (Table 8.1) and they are well worth browsing. This archive holds the UK's largest collection of qualitative and quantitative digital social science and humanities data sets for use by the research community (UK Data Archive 2021). These data have been acquired from academic, commercial and government sources, and relate mainly to post-war Britain. However, it should be remembered that the supply of data and documentation for the UK Data Archive's data sets is charged at cost, and there may be additional administrative and royalty charges.

Online indexes and catalogues often contain direct linkages to downloadable files, often in spreadsheet format. Government websites (Table 8.1) such as the UK government's *Direct.gov* and the European Union's *Europa* provide useful gateways to a wide range of reports, legislative documents and statistical data as well as links to other sites. However, although data from such government sources are usually of good quality, those from other sources may be neither valid nor reliable. It is important, therefore, that you evaluate the suitability of such secondary data for your research (Section 8.6).

Online communities

Establishing the availability of relevant materials generated by online communities that can be used as secondary data such as blogs and pages set up by social networking sites' user groups can be even more difficult. With the number of Wikis (collaborative content-sharing pages), blogs (including online diaries) and discussion forums growing rapidly and over five million blog posts being published every day (Ahlgren and WSHR Team 2021), there are almost certainly going to be blogs about your research topic. However, actually

finding them is more difficult! In contrast, although estimates suggest similar rapid growth for organisation web pages, with more than 150 million .com domain names registered in the third quarter of 2020 (Ahlgren and WSHR Team 2021), finding these organisations or their Facebook pages is far easier. This can be done using a general search engine or, in the case of UK-based companies, the links provided by the Yell UK business search engine. When undertaking such searches it is worth using more than one general search engine as, although there will be overlap, each search engine is likely to lead you to a different set of web pages (Lee 2021).

Organisations and other sources

References for unpublished and document secondary data are often less specific, referring to 'unpublished survey results' or an 'in-house company survey'. Although these may be insufficient to locate or access the actual secondary data, they still provide useful clues about the sort of data that might be found within organisations and which might prove useful. Textbooks, such as Johnson et al.'s (2021) *Human Resource Information Systems: Basics, Applications and Future Directions,* can provide you with valuable clues about the sort of documentary secondary data that are likely to exist within organisations' management information systems. Other subject-specific textbooks such as Kotler et al.'s (2019) *Marketing Management* can provide a clear indication of other sources of secondary data sources in a research area, in this instance marketing. Informal discussions are also often a useful source. Acknowledged experts, colleagues, librarians or your project tutor may well have knowledge of the sorts of data that might be available.

Sourcing the data

Having ascertained that secondary data are likely to exist, you need to find and record the precise source and, in your methodology, explain how you searched for these data noting the content management system(s) or search engines and search terms used. Searching for relevant data is often very time-consuming and differs dependent on whether the data are in archives and databases, online communities, organisations or other sources. You also need to beware that, although the amount of data on the Internet is increasing exponentially, much of it is, in our experience, of dubious quality. Consequently, once sourced the evaluation will crucial (Section 8.6).

Archives and databases

For secondary data held in online databases to which your university subscribes, published by governments or held by data archives, sourcing will be relatively easy, especially where other researchers have made use of them and a full reference exists. All you will need to do is search the appropriate data archive or gateway (Table 8.1) or online database (Table 8.2), find and download your data. Locating secondary data held by specialist libraries' archives is also relatively straightforward. Within the UK, specialist libraries' specific subject collections can usually be located using the most recent Chartered Institute of Library and Information Professional's (2015) publication *Libraries and Information Services in the United Kingdom and Republic of Ireland.* If you are unsure where to start, confess your ignorance and ask a librarian. This will usually result in a great deal of helpful advice, as well as saving you time. Once the appropriate abstracting tool or catalogue has been located and its use demonstrated, it can be searched using similar techniques to those employed in your literature search (Section 3.6).

Online communities

Materials (data) generated by online communities can be located using Blog Content Management Systems such as Blogster. These contain their own search engines, to identify potentially relevant blogs. Others content management systems such as WordPress can be searched using a general search engine such as Google or Bing. However, working through blogs composed of indeterminate numbers of postings to locate those that are potentially useful can be extremely time-consuming.

Micro blogging sites such as Twitter offer another potential source of online community secondary data. Tweets are (almost entirely) visible to anyone who chooses to search and follow a particular username such as a brand, trade union or person and their posts can be copied retrospectively. Another way, providing you have reasonable programming skills, is to use Twitter's own application program interface (API) to actively gather and export (a process known as scraping) up to 3,200 tweets. You can do this in three ways:

- via their search or streaming service;
- as a 10 per cent random sample;
- or, via the 'firehose' of all tweets made (Tinati et al. 2014).

However, these all require data to be collected as it is generated, so this may take some time.

Alternatively, you could use a specialist data scraping tool to gather such data. There are increasing numbers of such tools available, some of which are free, with most having free trial periods to allow you to establish whether it will be suitable. One, which our students have used, is Tweet Archivist (Tweet Archivist 2021). This tracks searches, archives, analyses, saves and can export tweets in real time. Another, CrowdTangle (CrowdTangle 2021), which can be used to scrape date from Twitter, Facebook, Instagram and Reddit, both tracks accounts and associated posts and comments and provides access to historical data. However, it is crucial to remember that, although these data are publicly available, they should be anonymised by removing the hashtags or usernames.

Organisations and other sources

Data held by companies, professional organisations or trade associations are more difficult to source and gain access to. For within-organisation data we have found that the information or data manager within the appropriate department is most likely to know the precise secondary data that are held. This is the person who will also help or hinder your eventual access to the data and can be thought of as the information gatekeeper (Section 6.2).

Increasingly, researchers are making their data publicly available through free communal repositories and online databases. Examples include the UK Data Archive and Mendeley Data (Table 8.2). Data deposited in these archives and online databases are expected to comply with FAIR guiding principles for scientific data management and stewardship (Wilkinson et al. 2016). These state that data should be:

- **F**indable – having a globally unique and persistent identifier;
- **A**ccessible – being retrievable by their identifier;
- **I**nteroperable – being able to be readily exchanged between different products or systems;
- **R**eusable – being richly described with a clear accessible usage licence and detailed provenance.

8.6 Evaluating and selecting secondary data sources

Secondary data must be evaluated with the same caution as any primary data that you collect. Having located a possible secondary data set, you need to be certain that

- they will enable you to answer your research question(s) and to meet your objectives;
- the benefits associated with their use will be greater than the costs of obtaining them;
- you will be allowed access to the data (Sections 6.2–6.5).

Secondary sources that appear relevant at first may, on closer examination, not be appropriate to your research question(s) or objectives. It is therefore important to evaluate the suitability for your research.

As data you wish to re-analyse already exist, you can evaluate them prior to use. Spending time evaluating any potential secondary data source is worthwhile, as rejecting unsuitable data earlier can save much wasted time later! Such evaluations are even more important when you have a number of possible secondary data sources you could use. In Section 5.8 we outlined a range of criteria against which to assess the quality of your research design. These criteria of validity and reliability can also be used to evaluate potential quantitative and qualitative secondary data, and the alternative criteria of dependability and credibility or authenticity to evaluate potential qualitative secondary data.

For most forms of secondary data, the easiest way is to obtain and evaluate a sample copy of the data and a detailed description of how they were collected. These, we believe, can be incorporated into a three-stage evaluation process (Figure 8.2). However, this is not always a straightforward process, as sources of the secondary data do not always contain all the information you require to undertake your evaluation.

Alongside your evaluation, you need also to consider the accessibility of the secondary data. For some secondary data sources, in particular those available via data archives or your university library, this will not be a problem. The latter may, however, still necessitate long hours working in the library for sources that are paper-based and 'for reference only'. For other data sources, such as those within organisations and online forums requiring membership, you need to obtain permission prior to gaining access and consider potential ethical implications where personal data are involved. This will be necessary

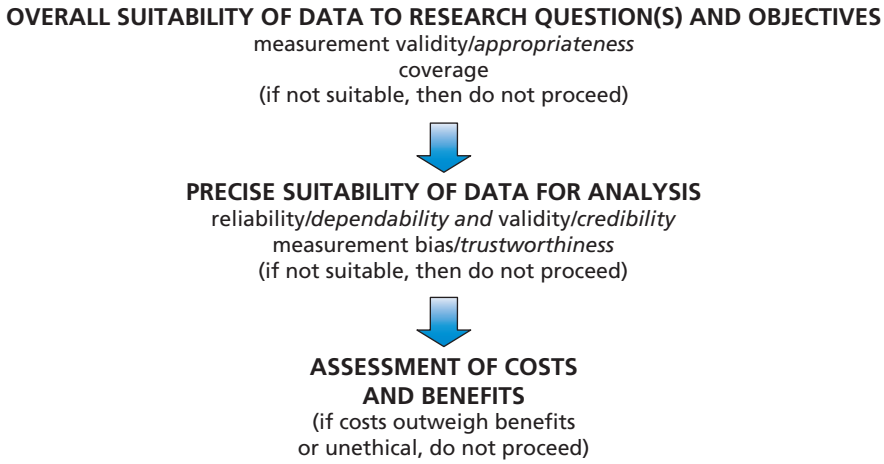


Figure 8.2 Evaluating potential secondary data sources
Note: Alternative criteria for qualitative designs are in italics

even if you are working for the organisation or a member of the forum. These issues were discussed in Section 6.7, so we can now consider the evaluation process in more detail.

Overall suitability

Measurement validity or appropriateness

One of the most important criteria for the suitability a data set is **measurement validity**, that is the extent to which the data collected measure what they were intended to measure. Secondary data that fail to provide you with the information that you need to answer your research question(s) or meet your objectives will result in invalid answers (Smith 2008). Often, when you are considering using secondary survey data you will find the measures used do not quite match those that you need. This is straightforward to ascertain by looking at the detailed definitions for the data set variables recording precisely how they were coded (Section 12.2). For example, a survey may record monthly manufacturing output whereas you are interested in monthly sales, hence the measure is invalid. This may cause a problem if you undertake your analyses believing that you have found a relationship with sales whereas in fact your relationship is with output.

You may use minutes of company meetings as a proxy for what actually happened in those meetings. Although these provide a record of what happened, they can be edited subtly to exclude aspects the chairperson did not wish recorded as well as comments that were made 'off the record'. Alternatively, you may be using news media reports to look at a hostile takeover bid for a supermarket chain. Such secondary data are likely to reflect the editorial stance of the specific media you are reading. You therefore need to consider the appropriateness of such data and be cautious before accepting such records at face value (Denscombe 2017).

Unfortunately, there are no clear solutions to problems of measurement invalidity or inappropriateness. All you can do is try to evaluate the extent of the data's validity or its appropriateness and make your own decision (Box 8.11). A common way of doing this is to examine how other researchers have coped with this problem for similar secondary data in a similar context. If they found that the measures, while not exact, were suitable, then you can be more certain they will be suitable for your research question(s) and objectives. If they commented on reporting bias, then you will need to be aware of this possibility too. Where they discuss how they overcame such issues, you may be able to incorporate these suggestions in your own research. Your literature search (Sections 3.5 and 3.6) will probably have identified other such studies already.

Coverage

The other important overall suitability criterion is **coverage**. You need to be sure that the secondary data 'cover' the population (or sample) about which you need data, for the time period you need, and the data will enable you to answer your research question(s) and meet your objectives. For all secondary data sets coverage will be concerned with two issues:

- ensuring that unwanted data are or can be excluded;
- ensuring that sufficient data remain for analyses to be undertaken once unwanted data have been excluded.

When analysing secondary survey data, you will need to exclude those data that are not relevant to your research question(s) or objectives. Service companies, for example,

Box 8.11 Focus on student research

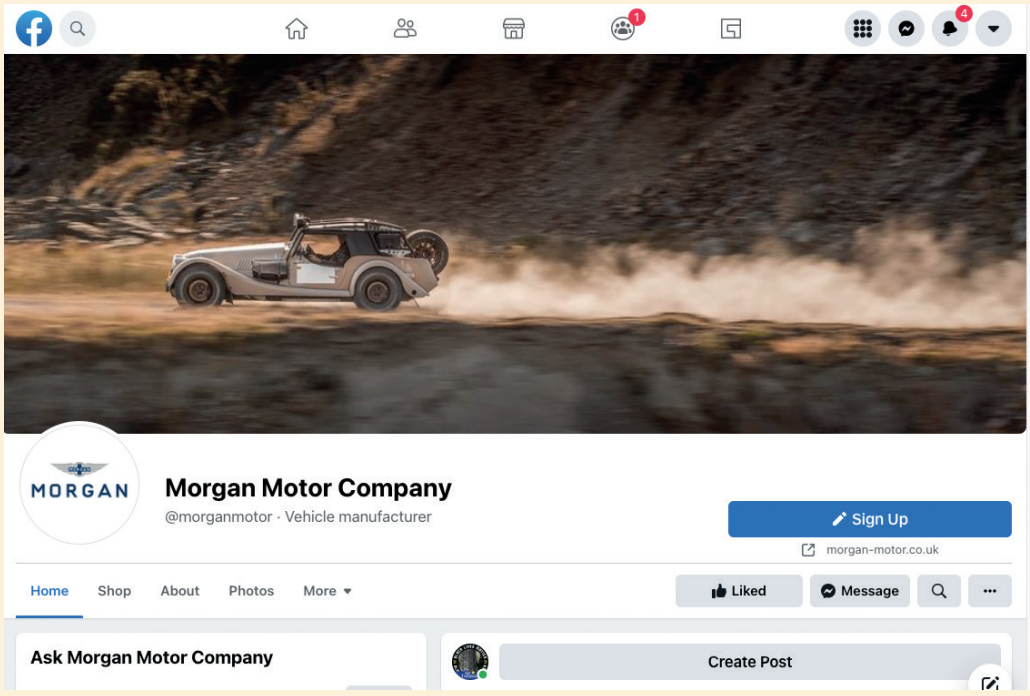
Using a social networking site as a source of secondary data

Mike's research project was concerned with the impact of social media on brand awareness and brand loyalty. He was particularly interested in how small automobile manufacturers used social networking sites in their marketing. His research question was: 'How effectively do small automotive manufacturers use social networking sites in their marketing?'

Mike was aware from the academic and trade literature that social media was of crucial importance in marketing and could influence various aspects of consumer behaviour, such as product awareness, information acquisition and purchase intention. Based on the academic literature on branding and social media, Mike argued that, to use social media most effectively, organisations needed to follow a three-stage process of providing material of interest, engaging people and using them as advocates for their products.

Mike was also aware from Internet searches and his own interest in cars that automotive manufacturers had each created their own Facebook presence, providing content and using their pages to interact with their fans (customers). Mike was already a fan of the Morgan Motor Company's Facebook page, which was followed by over 65,000 Facebook members. Morgan's wall contained company posts about their products and comments and other posts from fans. Although the data in these posts were not originally intended to answer Mike's research question, after careful evaluation he considered that further analysis of the posts and comments would enable him to do this.

Because Morgan's Facebook page was open to everyone, Mike considered that the information was in the public domain and so he could use it for his research project without seeking consent provided he anonymised individuals who posted, including blurring their faces. He now needed to analyse the posts (data) available on Morgan's Facebook wall to establish the extent to which this form of social media was being used by the organisation to provide consumers with material of interest, engage them and allow them to become advocates for the product.



Source: © 2021 Morgan Motor Company. Reproduced with permission

need to be excluded if you are concerned only with manufacturing companies. However, in doing this it may be that insufficient data remain for you to undertake the quantitative analyses you require (Sections 12.4 to 12.6). For document data, you need to ensure that it relates to the population identified in your research. For example, check that the social media content on an organisation's social media pages actually relate to the organisation. Where you are intending to undertake a longitudinal study, you also need to ensure that the data are available for the entire period in which you are interested.

Some secondary data, in particular those collected using a survey strategy, may not include variables you have identified as necessary for your analysis. These are termed unmeasured variables. Their absence may not be particularly important if you are undertaking descriptive research. However, it could drastically affect the outcome of explanatory research as a potentially important variable has been excluded.

Precise suitability

Reliability or dependability

The reliability or dependability (Section 5.8) you ascribe to secondary data are functions of the method by which the data were collected. You can make a quick assessment of these by assessing the authority or reputation of the source (Dochartaigh 2012). Survey data from large, well-known organisations such as those found in Mintel and Dataessential market research reports (Table 8.1) are likely to be reliable and trustworthy. The continued existence of such organisations is dependent on the credibility of their data. Consequently, their procedures for collecting and compiling the data are likely to be well thought through and accurate. Survey data from government organisations are also likely to be reliable, although they may not always be perceived as such. However, the dependability of documentary data such as organisations' records is more difficult to assess. While organisations may argue their records are reliable or dependable, there are often inconsistencies and inaccuracies. You therefore need also to examine the method by which the data were collected and try to ascertain the detail and accuracy required by the original (primary) user.

Dochartaigh (2012) suggests a number of areas for initial assessment of the authority of documents available via the Internet. These, we believe, can be adapted to assess the reliability or dependability of all types of secondary data. First, as suggested in the previous paragraph, it is important to discover the person or organisation responsible for the data and to be able to obtain additional information through which you can evaluate the reliability of the source. For data in peer-reviewed publications this is usually reasonably straightforward (Section 3.7).

For other secondary data this may be more difficult. Although organisation names, such as the 'Center for Research into . . . ' or 'Institute for the Study of . . . ', may appear initially to be credible, their publication may not have been subject to verification, and such names are sometimes used to suggest pseudo-academic credibility. Dochartaigh (2012) therefore suggests that you look also for a copyright statement and the existence of additional published documents relating to the data. The former of these, when it exists, can provide an indication of who is responsible for the data. The latter, he argues, reinforces the data's authority. In addition, online sources often contain an email address or other means of contacting the author for comments and questions about the Internet site and its contents. Beware of applying these criteria too rigidly as sometimes the most authoritative web pages do not include the information outlined above. Dochartaigh (2012) suggests that this is because those with most authority often feel the least need to proclaim it!

Validity or credibility

For all secondary data, a detailed assessment of the validity or credibility will involve you in an assessment of the method or methods used to collect the data (Dale et al. 1988). These are increasingly available as hyperlinks, often to metadata (Box 8.12), although even these may lack sufficient detail to enable you to make a full assessment. Alternatively, they may be discussed in the method section of an associated report. Your assessment will involve looking at who were responsible for collecting or recording the information and examining the context in which the data were collected. From this you should gain some feeling regarding the likelihood of potential errors or biases and, in particular, whether the data represent what they were intended to represent. In addition, you need to look at the process by which the data were selected and collected or recorded. Where sampling has been used to select cases, the procedure adopted, associated sampling error and response rates (Sections 7.2–7.9) will give clues to validity. Examination of the data collection instrument (such as the questionnaire or interview checklist) can offer further indications of the likely validity or credibility of the data collected. Secondary data collected using a questionnaire with a high response rate are likely to be more reliable than those from one with a low response rate. However, commercial providers of high-quality, reliable data sets may be unwilling to disclose details about how data were collected. This is particularly the case where these organisations see the methodology as important to their competitive advantage.

For some documentary sources, such as blogs, social media pages and transcripts of interviews or minutes of meetings, it is unlikely that there will be a formal methodology explaining how the data were collected. The credibility of these data will therefore be more difficult to assess, although you may be able to discover the context in which the data were collected. For example, blogs, emails and memos contain no formal obligation for the writer to give a full and accurate portrayal of events. Rather they are written from a personal point of view and expect the recipient to be aware of the context. Consequently, these data are more likely to be credible as a source of the writer's perceptions and views than as an objective account of reality. You're not being involved in collecting the data will

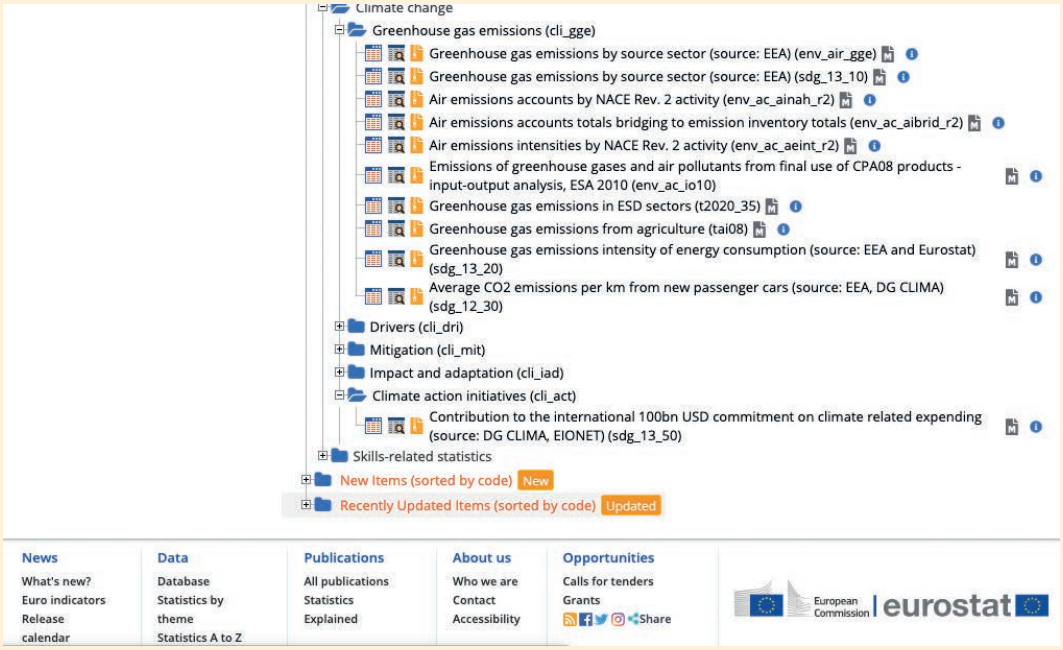


Box 8.12 Focus on student research

Assessing the suitability of online multiple-source longitudinal data

As part of her research project on responses to the European Union Sustainable Development Goal 13 on climate action, Jocelyn wished to establish how member states had contributed to the international commitment on climate spending since 2014. Research that she had read as part of her literature review had referred to European Union data, so she decided to see what data were available via the European Union's *Eurostat European Statistical Recovery Dashboard*. Having found the homepage, she scrolled through the 'cross cutting topics' folder, which included the subfolder 'Climate change'. Within this she found another folder, 'Climate action initiatives', which she opened.

Clicking on the 'data explorer' icon revealed data, which were available for 2014–19, having last been updated in May 2021. It also stated the source 'DG CLIM, EIONET' and provided a link to 'Explanatory texts (metadata)'. Reviewing the metadata carefully, Jocelyn was happy with the data's overall suitability and credibility; the data having been compiled for the European Commission Director-General for Climate Action using data from the European Environment Information and Observation Network. She therefore clicked on the 'Download' icon and saved it as an Excel spreadsheet in her cloud storage.



Source: Eurostat (2021b) Copyright © European Communities 2021. Reproduced with permission

eurostat

Explanatory texts (metadata) | Information | Download | Preview

Contribution to the international 100bn USD commitment on climate related expending (source: DG CLIMA, EIONET)

Last update: 03-05-2021

Table Customization show

TIME | GEO | Unit of measure: Million euro

GEO \ TIME	2014	2015	2016	2017	2018	2019
European Union - 27 countrie	10,163.87	12,333.74	14,337.95	13,906.81	14,792.83	16,205.77
European Union - 28 countrie	11,715.30	13,813.88	15,501.53	14,924.63	16,113.18	17,511.17
Belgium	142.74	46.83	100.92	104.92	80.68	99.71
Bulgaria	0.07	0.10	:	:	0.00	:
Czechia	7.66	8.19	7.55	7.07	7.20	7.47
Denmark	222.04	143.79	172.98	181.72	198.16	246.90
Germany (until 1990 former t	5,130.61	7,406.15	8,534.08	6,729.60	6,611.98	6,811.79
Estonia	0.53	1.21	0.38	0.62	0.97	0.53
Ireland	41.44	36.00	52.70	64.47	77.21	70.23
Greece	0.04	0.23	0.23	4.59	3.77	0.69
Spain	498.75	466.72	595.03	529.06	694.94	740.14
France	2,921.43	2,792.83	3,334.84	4,377.38	5,088.76	5,958.78
Croatia	0.03	:	:	0.02	0.05	0.03
Italy	143.23	327.34	242.95	632.62	451.96	417.59
Cyprus	0.00	:	:	:	:	:
Latvia	0.42	0.01	0.01	:	0.04	0.00
Lithuania	0.26	0.43	0.54	1.48	0.76	1.99
Luxembourg	36.26	45.65	129.53	40.43	40.98	51.43
Hungary	2.71	41.34	35.29	13.98	3.09	3.39
Malta	0.08	0.16	0.20	0.16	0.10	0.10
Netherlands	339.98	425.84	471.89	405.44	577.83	580.79
Austria	141.27	117.62	199.26	164.14	239.47	332.82
Poland	4.19	5.67	5.38	4.29	49.49	12.88
Portugal	9.52	6.22	2.00	2.17	1.64	0.89
Romania	0.03	:	0.78	0.86	0.03	0.24
Slovenia	2.35	2.35	2.98	3.75	4.39	5.78
Slovakia	1.23	2.20	2.99	3.63	4.16	5.91
Finland	132.25	115.43	43.04	119.38	46.59	146.76
Sweden	384.75	341.43	402.40	515.04	608.59	708.92
Iceland	:	:	:	:	:	:
Norway	:	:	:	:	:	:
Switzerland	:	:	:	:	:	:

Special value:
: not available

Source of data: European Environment Information and Observation Network (Eionet), European Commission - D

Source: Eurostat (2021b) Copyright © European Communities 2021. Reproduced with permission

also affect your analyses. Qualitative analyses of in-depth interview transcripts invariably benefit from understandings derived from participating in social interactions that cannot be fully captured in either audio recordings or transcripts.

Where data have been compiled, as in a report, you need to pay careful attention to how these data were analysed and the results are reported. Where percentages (or proportions) are used without actually giving the totals on which these figures are based, examine the data very carefully. For example, a 50 per cent increase in the number of clients from two to three for a small company may be less valid than the 20 per cent increase in the number of clients from 1,000 to 1,200 for a larger company in the same market! Alternatively, where quotations appear to be used selectively without other supporting evidence, this raises questions regarding the credibility of the conclusions being drawn and the data.

Measurement bias or low trustworthiness

Measurement bias and low trustworthiness of secondary data can occur for a variety of reasons. Hair et al. (2016) identifies three reasons in relation to measurement bias, which we believe also reduce trustworthiness of data:

- deliberate distortion of data;
- changes in how data are collected;
- when the data collection technique did not truly measure the topic of interest.

Deliberate distortion occurs when data are recorded inaccurately on purpose and is most common for secondary data sources such as organisational records. Managers may deliberately fail to record minor accidents to improve safety reports for their departments. Data that have been collected to further a particular cause or the interests of a particular group are more likely to be suspect as the purpose of the study may be to reach a predetermined conclusion (Smith 2008). Reports of consumer satisfaction surveys can deliberately play down negative comments to make the service appear better to their target audience of senior managers and shareholders, and graphs may deliberately be distorted to show an organisation in a more favourable light. In addition, online news reports and reviews may contain 'fake news' or misrepresent the truth, providing disinformation to influence and manipulate readers' behaviours.

Other distortions may be deliberate but not intended for any advantage. Employees keeping time diaries might record only the approximate time spent on their main duties rather than accounting precisely for every minute. People responding to a structured interview (questionnaire) might adjust their responses to please the interviewer (Section 11.2).

Unfortunately, measurement bias resulting from deliberate distortion is difficult to detect. While we believe you should adopt a neutral stance about the possibility of bias, you still need to look for pressures on the original source that might have biased the data. For text documents such as minutes, reports and memos the intended target audience may suggest potential bias. Therefore, where possible you will need to triangulate the findings with other independent data sources. Where data from two or more independent sources suggest similar conclusions, you can have more confidence that the data on which they are based are trustworthy. For some data sets you will be able to check if, after data analysis, the findings were corroborated with those who provided the data and appeared plausible (Lincoln and Guba 1985). Conversely, where data suggest different conclusions, you need to be more wary of the results.

Changes in the way data were collected can also introduce changes in measurement bias. Provided that the method of collecting data remains constant in terms of the people collecting it and the procedures used, any measurement biases should remain constant. Once the method is altered, perhaps through a new data collection form or question, then

the bias also changes. Trustworthiness may also be a concern when new procedures, such as for recording minutes, are introduced. This is particularly important for longitudinal data sets where you are interested in trends rather than actual numbers. Your detection of such biases is dependent on discovering that the way data are recorded has changed. Within-company sources are less likely to have documented these changes than government-sponsored sources (Box 8.8).

Measurement bias also occurs where the data collected does not truly represent the topic of interest. For example, minimum income standards need to take account of what people need for a minimum acceptable standard of living, something that both differs between countries and has altered over time. In establishing their 2017 minimum income standard for the UK, the Joseph Rowntree Foundation (Padley and Hirsh 2017) included in the basket of minimum requirements the necessity for pensioner households to have a computer and the Internet, something that would not be normal in all countries.

Costs and benefits

Hair et al. (2016) argue an assessment of secondary data needs to consider the costs of acquiring them with the benefits they will bring. Costs include both time and financial resources that you will need to devote to locating and obtaining the data. Some data will be available online at no charge (Box 8.12). Other data will require lengthy negotiations to gain access, the outcome of which may be a polite 'no' (Sections 6.3–6.5). Data from market research companies or special tabulations from government surveys will have to be ordered specially and will normally be charged for: consequently, these will be relatively costly.

Benefits from data can be assessed in terms of the extent to which they will enable you to answer your research question(s) and meet your objectives. You will be able to form a judgement on the benefits from your assessment of the data set's overall and precise suitability (discussed earlier in this section). This assessment is summarised as a checklist of questions in Box 8.13. An important additional benefit is the form in which you receive the data. If the data are already in spreadsheet readable format (often referred to as csv, comma separated values), this will save you considerable time as you will not need to re-enter the data prior to analysis (Sections 12.3 and 13.4). However, when assessing the costs and benefits you must remember that data that are not completely reliable and contain some bias are better than no data at all, if they enable you to start to answer your research question(s) and achieve your objectives.



Box 8.13 Checklist

To evaluate your secondary data sources

Overall suitability

- ✔ Does the data set contain the information you require to answer your research question(s) and meet your objectives?
- ✔ Do the measures used match those you require?
- ✔ Is the data set a proxy for the data you really need?
- ✔ Does the data set cover the population that is the subject of your research?
- ✔ Does the data set cover the geographical area that is the subject of your research?
- ✔ Can data about the population that is the subject of your research be separated from unwanted data?
- ✔ Are the data for the right time period or sufficiently up to date?



- ✔ Are all the data you require to answer your research question(s) and meet your objectives available?
- ✔ Are the variables defined clearly?

Precise suitability

- ✔ How valid or credible or authentic is the data set you are thinking of using?
- ✔ Is it clear what the source of the data is?
- ✔ How credible is the data source?
- ✔ Do the credentials of the source of the data (author, institution or organisation sponsoring the data) suggest it is likely to be reliable?
- ✔ Do the data have an associated copyright statement?
- ✔ Do associated peer-reviewed documents exist?
- ✔ Does the source contain contact details for obtaining further information about the data?
- ✔ Is the method of data collection described clearly?
- ✔ If sampling was used, what was the procedure and what were the associated sampling errors and response rates?
- ✔ Who was responsible for collecting or recording the data?
- ✔ From the description of the method and associated documents is it clear that the data that were collected or compiled are valid or credible or plausible?
- ✔ Are the data likely to contain measurement bias or be untrustworthy?
- ✔ What was the original purpose for which the data were collected?
- ✔ Who was the target audience and what was its relationship to the data collector or compiler (were there any vested interests)?
- ✔ Have there been any documented changes in the way the data are measured or recorded including definition changes?
- ✔ How consistent are the data obtained from this source when compared with data from other sources?
- ✔ Have the data been recorded accurately?
- ✔ Are there any ethical concerns with using the data?

Costs and benefits

- ✔ What are the financial and time costs of obtaining these data?
- ✔ Can the data be downloaded in a format compatible with a spreadsheet, statistical analysis software or word processor?
- ✔ Do the overall benefits of using these secondary data sources outweigh the associated costs?

And finally

- ✔ Were the data obtained ethically?
- ✔ Is permission required to use these data and, if 'yes', can you obtain it?
- ✔ Have you ensured, wherever appropriate, personal data are anonymised?

Source: Authors' experience; Dale et al. (1988); Dochartaigh (2012); Hair et al. (2016); Smith (2008); Stewart and Kamins (1993); Vartanian (2011)

8.7 Summary

- Secondary data are data that you analyse that were originally collected for some other purpose, perhaps processed and subsequently stored. There are three main types of secondary data:
  - survey (including census, continuous/regular survey and ad-hoc survey);
  - document (including text, audio and audio/visual);
  - multiple source (including snapshot, longitudinal and continually updated).
- Most research projects require some combination of secondary and primary data to answer your research question(s) and to meet your objectives. You can use secondary data in a variety of ways. These include:

  - as your main data set;
  - as longitudinal (time-series) data;
  - as area-based data;
  - as a comparator or to set the context your own research findings.
- Any secondary data you use will have been collected for a specific purpose. This purpose may not match that of your research. Other than where continuously updated, secondary data are often less current than any data you collect yourself.
- Secondary data offers potential advantages such as: fewer resource requirements, being unobtrusive, enabling longitudinal studies, providing comparative and contextual data, and allowing public scrutiny.
- Secondary data also has potential disadvantages including the original purpose not matching yuor needs, difficult or costly access, aggregations and definitions being unsuitable and no real control over the data quality.
- Searching and locating secondary data is a matter of detective work. This will involve you in:
  - ascertaining whether the data required are likely to be available;
  - sourcing the precise data.
- Once located, secondary data must be evaluated to ensure their overall suitability for your research question(s) and objectives. In particular, you need to pay attention to:
  - measurement validity or appropriateness;
  - coverage of the data.
- You must also evaluate the precise suitability of the secondary data. Your evaluation should include:
  - reliability or dependability;
  - validity or credibility;
  - measurement bias or trustworthiness.
- You can then assess the costs and benefits of using these data in comparison with alternative sources.
- When assessing costs and benefits, you need to be mindful that secondary data that are not completely reliable and contain some bias are better than no data at all if they enable you partially to answer your research question(s) and to meet your objectives.

Self-check questions

Help with these questions is available at the end of the chapter.

8.1 Give three examples of different situations where you might use secondary data as part of your research.

8.2 You are undertaking a research project as part of your study. Your initial research question is 'How has the UK's import and export trade with other countries altered in the past 30 years?' List the arguments that you would use to convince someone of the suitability of using secondary data to answer this research question.

8.3 Suggest possible secondary data that would help you answer the following research questions. How would you locate these secondary data?

a To what extent do organisations' employee relocation policies meet the needs of employees?

b How have consumer spending patterns in your home country changed in the last 10 years?

c How have governments' attitudes to the public sector altered in the twenty-first century?
d To what extent does advertising of childcare products reflect changes in societal norms regarding gender and ethnicity?

8.4 As part of case study research based in a manufacturing company with over 500 customers, you have been given access to an internal market research report. This was undertaken by the company's marketing department. The report presents the results of a recent customer survey as percentages. The section in the report that describes how the data were collected and analysed is reproduced below:

> Data were collected from a sample of current customers selected from our customer database. The data were collected using an Internet questionnaire designed and administered via the online survey tool Qualtrics™. Twenty-five customers responded, resulting in a 12.5 per cent response rate. These data were analysed using IBM SPSS Statistics. Additional qualitative data based on in-depth interviews with a number of customers were also included.

a Do you consider these data are likely to be reliable?
b Give reasons for your answer.

Review and discussion questions

8.5 With a friend revisit Figure 8.1, types of secondary data, and re-read the accompanying text in Section 8.2. Agree to find and, where possible, make electronic copies of at least two examples of secondary data for each of the nine subheadings:
a censuses;
b continuous and regular surveys;
c ad-hoc surveys;
d text documents;
e audio documents;
f visual/audio-visual documents;
g multiple-source snapshots;
h multiple source longitudinal data;
i multiple source continually updated data.
Compare and contrast the different examples of secondary data you have found.

8.6 Choose an appropriate gateway or archive from Table 8.1 to search for secondary data on a topic which you are currently studying as part of your course.
a 'Add to favourites' (bookmark) those sites that you think appear most relevant.
b Make notes regarding any secondary data that are likely to prove useful to either seminars for which you have to prepare or coursework you have still to undertake.

8.7 Agree with a friend to each evaluate an online secondary data set. This could be one of the data sets you found when undertaking Question 8.6. Evaluate independently your secondary data set with regard to its overall and precise suitability using the checklist in Box 8.13. Do not forget to make notes regarding your answers to each of the points raised in the checklist. Discuss your answers with your friend.

Progressing your research project

Assessing the utility, selecting and incorporating secondary data in your research

- Consider your research question(s) and objectives. Decide whether you need to use secondary data or a combination of primary and secondary data to answer your research question. (If you decide that you need only use secondary data and you are undertaking this research as part of a course of study, check your course's assessment regulations to ensure that this is permissible.)
- If you decide that you need to use secondary data, make sure that you are clear why and how you intend to use these data.
- Assess whether suitable secondary data are available and accessible.
- Search for and locate the secondary data that you require and make sure that, where necessary, permission for them to be used for your research is likely to be granted.
- Evaluate the suitability of these data for answering your research question(s) and make your judgement based on assessment of its suitability, benefits and associated costs.
- Note down the reasons for your choice(s), including the possibilities and limitations of the data. You will need to justify your choice(s) when you write about your research methods.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Burton, J., Lynn, P. and Benzeval, M. (2020) 'How *Understanding Society*: The UK Household Longitudinal Study adapted to the Covid-19 pandemic', *Survey Research Methods,* Vol. 14, No. 2. pp. 235–9. Discussed briefly in Box 8.1, this paper reveals how data collection methods were amended in the response to the Covid-19 pandemic and the potential impact on the data collected.

Lee, W.J. (2021) *How Do I Collect Documentary Evidence?.* London: Sage. This is a really useful short book on the use of document secondary data looking at the philosophical underpinnings, components of text in documents, their collection and compilation in documentary research and offering examples of published studies..

Wernicke, I.H. (2014) 'Quality of official statistics data on the economy', *Journal of Finance, Accounting and Management,* Vol. 5, No. 2, pp. 77–93. This paper outlines the quality principles adopted by governments and organisations such as the National Statistics Offices, United Nations, World Bank and Eurostat and offers insights into why these data are often distorted.

Case 8
Investigating refugees' challenges in setting up a business



Source: PR Image Factory/Shutterstock

Nour is a Syrian refugee who has lived in Scotland for the past five years. Her family owned a store in Syria, and she is considering opening a small business in Scotland after her studies. After taking English classes for two years with the local Help Centre for Refugees, she was able to resume her studies and is now a master's student in Entrepreneurship and Innovation. She has looked at the academic literature and found that the specific challenges refugees face when setting up a business in their host country are under-researched (Embiricos 2020; Alrawadieh et al. 2019). So, for her final year research project, she is asking: 'What are the main challenges faced by refugees in the process of setting up a business and how are they overcome?'. To answer this research question, she has chosen to look at the experiences of entrepreneurs who have been granted refugee status in the UK in the last five years.

To collect data, Nour has started with the local Help Centre for Refugees because she has heard about their collection of success stories of refugees who opened a business in the last two years. As a community member, she has been granted access to the transcripts of seven structured interviews that had been conducted. During a discussion with the local Help Centre's employee who conducted these interviews, she has discovered that this initiative was triggered by the launch of an open archive for refugees. The Refugee Council initiated this virtual platform for archiving refugees' stories. On this archive, one area is dedicated to narrative accounts of refugees who have managed to set up a business. The stories are available to the public on a read-only basis.

Searching for more secondary data, Nour has found a variety of publications relating to refugee entrepreneurship and the benefits for refugees of starting their own business. These are on websites such as the UNHCR (the UN Refugee Agency), the World Economic Forum, the British Red Cross and newspapers.

Data sets collected by someone other than the researcher can offer many advantages (Johnston, 2017). However, Nour realised that the amount of data she had available was considerable and did not know how to proceed. She met with Edwin, her tutor, who asked her the following questions:

- Did you evaluate the sources of the secondary data you found?
- Do you know how these data were collected?
- Do you know from whom these data were collected?

Following this meeting with her tutor, Nour re-evaluated her secondary data. Talking to the interviewer at the Help Centre for Refugees, she established how the interviews had been conducted. Ten open questions were asked in the same order to all interviewees, including one on the specific difficulties encountered in setting up a business as a refugee. Nour believed that these data would provide information to answer her research question. Discovering that the interviewer followed general guidelines for structured interviewing, she assessed this source as reliable. She then looked at the criteria for uploading content on the Refugee Council's platform. Any refugee or organisation working for refugees in the UK could upload a story in text, audio or video format after registering on the website by following simple instructions (e.g. length of text). Nour tried to register and saw that the Refugee Council asked for demographic information, contact details and the date refugee status was granted. Since the organisation was well known and the criteria for collecting the data were clear and accessible, Nour considered the repository a reliable source. Nour thought that she now probably had sufficient data to answer her research question and chose to disregard additional sources she had previously identified.

Nour created the following table to summarise her secondary data sources.

Source	Type of document	Number of documents
Local Help Centre for Refugees	Interview transcript	7
Refugee Council repository	Text	38
Refugee Council repository	Audio file	12
Refugee Council repository	Video file	26

To support her analysis process, Edwin suggested that Nour use CAQDAS (Computer Aided Qualitative Data Analysis Software), such as NVivo or ATLAS.ti, and upload the interview transcripts and narrative accounts in text, audio or video format. Nour could then follow a thematic analysis to examine these secondary data, i.e. she coded the data to identify the themes that reflect the main challenges refugees face and ways to overcome them in setting up a business in the UK. Nour recognised these data had been collected for a different purpose than to answer her research question. Indeed, part of the data was unlikely to help her to answer her research question directly. However, she considered these data would offer a contextual understanding of these refugees' experiences and that in telling their stories, they mostly shared their struggles. Those who did not mention any challenges could be excluded from her study.

On reflection, Nour concluded that, although she did not collect the data herself, she was able to understand the experiences of other refugees setting up a business. She believed that those whose stories she read or heard had probably opened up as much as they did in their stories because they told them on their own terms.

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Questions

1 What type of secondary data did Nour use for this study?
2 Nour's tutor, Edwin, raised an important issue when he asked Nour to evaluate the secondary data sources. Do you think that Nour properly evaluated the potential sources of the secondary data she had found?
3 **a** Think about the disadvantages of using secondary data. What are the specific ones in this case?
b Do you think that it would have been appropriate for Nour to collect primary data in addition to the secondary data she found?
4 What are the advantages of using secondary data you have identified?

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders.**

They are:

- The involvement of auditors in preliminary profit announcements (focussing on combing document data from a specialist news service and company reports).
- Research and development in the UK pharmaceutical industry (focussing on using published documents including archival data from the UK public records office).
- Small firms' internationalisation (focussing on combining data from multiple sources to compile background data on specific organisations).
- Patent grants and the implications for business (focussing on the use of existing quasi-governmental databases for data).
- Trust repair in a major finance company (focussing on the use of organisations' press releases and news media reports as data).
- Values and behaviours for sustainable tourism (focussing on the use of organisations documents as data).
- Using social media for research (focussing on the collection and use of tweets as data).

Self-check answers

8.1 Although it would be impossible to list all possible situations, the key features that should appear in your examples are listed below:

- to *compare* findings from your primary data;
- to place findings from your primary data in a wider *context*;
- to *triangulate* findings from other data sources;
- to provide the main data set where you wish to undertake *longitudinal* research, to undertake *historical* research or to undertake *comparative* research on a national or international scale with *limited* resources.

8.2 The arguments you have listed should focus on the following issues:

- The study suggested by the research question requires historical data so that changes that have already happened, such as the UK leaving the European Union, can be explored. These data will, by definition, have already been collected.

- The timescale of the research (if part of a course) will be relatively short. One solution for longitudinal studies in a short time frame is to use secondary data.
- The research question suggests an international comparative study. Given your likely limited resources, secondary data will provide the only feasible data sources.

8.3 **a** The secondary data required for this research question relate to organisations' employee relocation policies. The research question assumes that these sorts of data are likely to be available from organisations. Textbooks, research papers and informal discussions would enable you to confirm that these data were likely to be available. Informal discussions with individuals responsible for the personnel function in organisations would also confirm the existence and availability for research of such data.

b The secondary data required for this research question relate to consumer spending patterns in your home country. As these appear to be the sort of data in which the government would be interested, they may well be available from online databases or in published form. For the UK, examination of the Office for National Statistics and gov.uk information gateways (Table 8.2) would reveal that these data were collected by the annual Expenditure and Food Survey providing hyperlinks to a series of reports including *Living Costs and Food Survey* (Office for National Statistics 2021c). Summary data could also be downloaded.

c The secondary data required for this research question are less clear. What you require is some source from which you can infer past and present government attitudes. Relative changes in spending data, such as appears in quality newspapers, might be useful, although this would need to be examined in the context of the overall budget. Transcripts of ministers' speeches and newspaper reports might also prove useful. However, to establish suitable secondary sources for this research question you would need to pay careful attention to those used by other researchers. These would be outlined in research journal articles. Informal discussions could also prove useful.

d You are likely to require document visual secondary data to answer this research question. This is likely to comprise both two-dimensional static and two-dimensional moving advertisements. An Internet image search would reveal if these forms of data were available online. Two other possible sources would be the archives of London's Museum of Brands, Packaging and Advertising, and New York's Museum of Advertising.

8.4 **a** The data are unlikely to be reliable.

b Your judgement should be based on a combination of the following reasons:

- Initial examination of the report reveals that it is an internally conducted survey. As this has been undertaken by the marketing department of a large manufacturing company, you might assume that those undertaking the research had considerable expertise. Consequently, you might conclude the report contains credible data. However:
- The methodology is not clearly described. In particular:
  - The sampling procedure and associated sampling errors are not given.
  - It does not appear to contain a copy of the questionnaire. This means that it is impossible to check for bias in the way that questions were worded.
  - The methodology for the qualitative in-depth interviews is not described.
- In addition, the information provided in the methodology suggests that the data may be unreliable:
  - The reported response rate of 12.5 per cent is very low for a telephone survey (Section 7.5).

- Responses from 25 people means that all tables and statistical analyses in the report are based on a maximum of 25 people. This is likely to be too few for reliable results (Sections 7.5 and 12.5).

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Chapter 9



Collecting primary data using observation

Learning outcomes

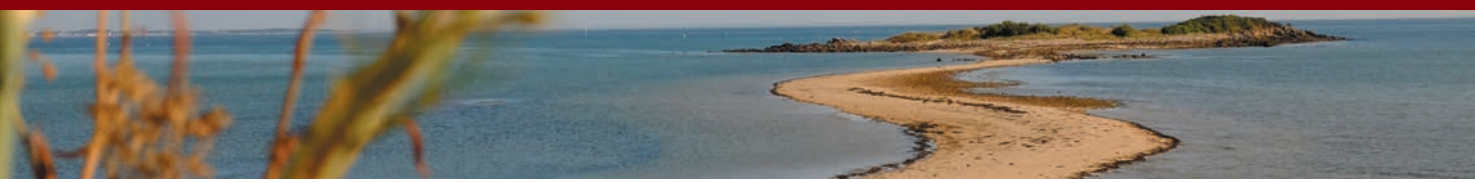
By the end of this chapter, you should be able to:

- understand the potential of using observation as a data collection method;
- explain the dimensions of observation and the choices to be made when using observational research;
- discuss participant observation, structured observation, and Internet-mediated observation as methods for collecting data;
- evaluate the use of video recording, static images and audio-recording in the collection of observational data;
- identify ethical concerns and quality issues related to the collection data using observation;
- progress your research project by collecting data using observation.

9.1 Introduction

Observation is widely used as a method to collect data throughout our everyday lives. As highlighted in the opening vignette, many of us taking digital photographs of what we observe. Yet, despite observation offering the opportunity to collect rich and detailed research data, it is often neglected by students and researchers as a research method. If your research question(s) and objectives are concerned with what people do and how they interact, an obvious way to collect data is to watch and listen to them do it. Such **observation** involves the systematic viewing, recording, description, analysis and interpretation of people's behaviour in a given setting.

In other approaches to collecting data, those who take part are called either respondents or participants. Those who complete a questionnaire are usually called respondents. Those who agree to take part in most forms of qualitative research are usually called participants. These labels work less well for observation since you, as researcher, usually participate in the environment of those you are researching, responding to the ways in which they carry out their usual activities. In observational research, those who agree to be observed are usually called **informants** (Monahan and Fisher 2010). This is the term that we will use throughout this chapter.



Photography as observation

Smartphones are by far the most popular means of capturing photographs worldwide, offering convenience, ease of use and increasingly high-quality images. When using a smartphone to take photographs we are, in effect, recording our observations digitally. However, this act of making a digital image is more than just pointing your phone and pressing a button to record an observation. It incorporates a decision about what is important and sufficiently significant to record as an image, what to include, what to leave out and how to frame the image.



Hôi An, Vietnam ©2021 Mark NK Saunders

Eliott Erwitt is a street photographer world renowned for taking pictures of what he observes. A quick Google search reveals both examples of his work and a variety of his quotes about photography and observation. Of particular relevance, are his words: 'To me, photography is an art of observation. It's about finding something interesting in an ordinary place . . . I've found it has little to do with the things you see and everything to do with the way you see them' (PhotogpediA 2021).

Erwitt's words emphasise the importance of paying attention to what we see and how we see it, both aspects that are crucial in observation. They also emphasise that when using photographs as a means of collecting and recording observational data, both by ourselves as researchers and by our informants, we need to recognise that what is included and excluded depends on how the person taking the photograph sees things.

We start this chapter by discussing the choices you will need to consider as an observation researcher (Section 9.2), highlighting the core dimensions to which these relate. We then consider three observation forms: participant observation (Section 9.3); structured observation (Section 9.4) and Internet-mediated observation (Section 9.5). Participant observation is qualitative and derives from the work of social anthropology early in the twentieth century. It emphasises discovering meanings people attach to their actions and social interactions. In contrast, structured observation is quantitative and focuses more on frequency of actions such as what people do. Internet-mediated observation involves the collection of data from online communities. This adapts both participant and structured observation methods by changing the mode of observing from oral/visual/near to textual/digital/virtual. In practice, there can be overlap between these forms (Figure 9.1) and they

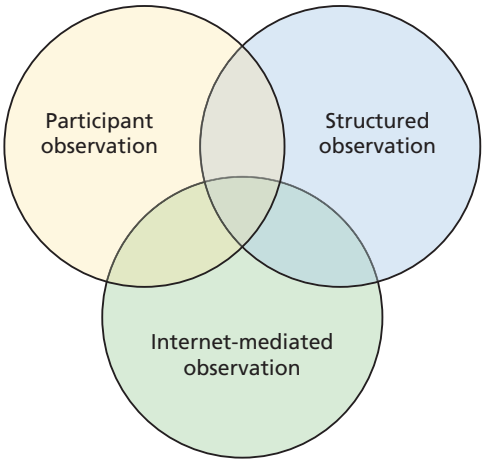


Figure 9.1 Overlap between observation forms

can be combined with other forms as part of a multiple or mixed methods research design (Section 5.4).

Our consideration of forms of observation is complemented by discussions of video recording (Section 9.6), creating static images such as digital photographs (Section 9.7) and audio recording (Section 9.8). For each of these we consider the practice and associated ethical and data quality issues.

9.2 Observation choices

As an observational researcher you will need to make choices about how you undertake your observations. You will need to choose whether to observe the setting either with an open mind about what to observe (unstructured and emergent) or, at the other end of these dimensions, with an already decided structure and specific list of aspects on which to focus observation (structured and predetermined). You will need to choose whether to participate in the event being observed (active) or observe it without taking part (passive). You will need to choose whether you will observe from the same location or a separate location (present or detached) and whether or not to reveal your identity to informants as an observational researcher (overt or covert). You will also need to choose whether to conduct observation in a naturalistic setting, taking advantage of the opportunity to observe a genuine event or activity as it occurs organically, or whether to set up (contrive) a controlled activity in which the specified event can be observed (Table 9.1).

The ways in which you combine these dimensions define different types of observation. For example, subject to ethical approval, you may choose to conduct unstructured, exploratory observation while taking part in a workplace departmental meeting without telling your colleagues. Alternatively, you may contrive an experiment to measure the responses of those who agree to take part using a pre-determined and structured observation instrument.

Table 9.1 Dimensions of observation

		Dimension		
Unstructured	←	**Structure of design**	→	Structured
Emergent	←	**Formality of design**	→	Pre-determined
Passive	←	**Researcher's participation**	→	Full
Detached	←	**Researcher's location**	→	Present
Covert	←	**Researcher's identity**	→	Overt
Concealed	←	**Research purpose**	→	Revealed
Naturalistic	←	**Setting**	→	Contrived

There are two principal types of observation: participant observation and structured observation. **Participant observation** is a qualitative method within which the researcher attempts to participate fully in the lives and activities of the informants becoming a member of their group, organisation or community. It can incorporate different levels of structure. **Structured observation** is a quantitative method with a high level of predetermined structure. It is often used to quantify observed behaviours and can be combined with unstructured, qualitative observation in an initial exploratory stage. When using either type you will need to exercise choice regarding other dimensions of observation and your own role. For example, in participant observation you need to decide whether to reveal or conceal yourself and your research purpose, and whether to take part in or just observe the event or activity. Similarly, in structured observation you may reveal or conceal your purpose and, while you are more likely to act as a passive observer, it may be possible to participate fully in an activity and undertake structured observation.

Before we discuss different types of observation, we consider in more detail the dimensions of observation. We do this under the following headings: structure and formality; researcher involvement and purpose and setting.

Structure and formality

Like interviews (Section 10.2), observation ranges from unstructured to structured. Observation may be structured and highly formalised based on the use of a pre-determined and standardised instrument that is generally referred to as a coding schedule. This may be designed to observe the activities or behaviour of an individual person, such as a consumer or a worker, or the interactions between members of a group, such as in a workplace meeting, or the prevalence of particular events, such as in a production study (Section 9.4, Box 9.7). Standardisation is important where structured observation is to be repeated and you wish to collect quantifiable data that are comparable between individuals or groups, and across events or different times.

Observations can also be informal. Rather than observing a predetermined list of attributes, behaviours or responses, the focus can be more flexible and open. Here the researcher records the flow of events or behaviours as they are observed. This unstructured

and informal approach to observation is likely to be exploratory in nature, describing who is involved, what they do, how they interact, the sequence of events, their aim in undertaking this activity, how they respond to one another emotionally and the setting in which this occurs (Spradley 2016).

Where observation is conducted sequentially in the same setting, it is likely to become more structured and formal. As subsequent observations are undertaken, you will move through stages from descriptive observation, to focused observation, finally reaching selective observation (Section 9.3, Figure 9.4). These stages in observation illustrate points along a continuum between unstructured and structured observation, which are still a long way from the use of a highly structured coding schedule that we introduced earlier.

Unstructured and semi-structured observation generally produce qualitative data. These qualitative data vary from field notes to highly detailed transcripts, the latter often being produced from audio or audio-visual recordings. The scope to collect such data depends on the level of access negotiated with informants (Section 6.2).

Researcher involvement

The nature of your involvement as an observational researcher comprises three dimensions:

- your participation in the activity or event being observed;
- whether your identity is made known to those being observed;
- your location relative to what is being observed.

Gold (1958) describes the first of these as a continuum ranging from high to low participation within which four classic roles of observation can be placed, ranging from complete participation at the high to complete observation at the low extreme. In between these two extremes he outlines two further roles: nearer to the complete participant is the participant-as-observer and closer to the complete observer is the observer-as-participant (Figure 9.2).

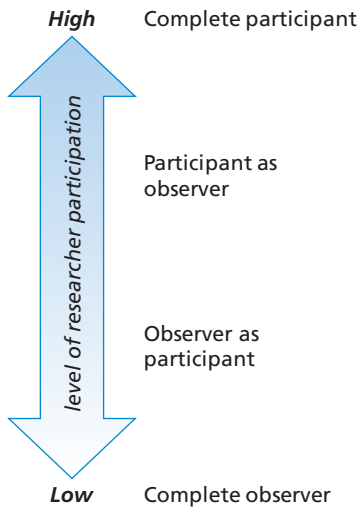


Figure 9.2 Participation levels in observation

The second dimension relates to whether your identity as a researcher is revealed (overt) or concealed (covert) from those being observed. Where the researcher reveals their identity to those they wish to observe, this will lead to **overt observation**, where these intended informants agree to being observed. Where the researcher conceals their identity from those they observe, this will lead to **covert observation**, where observation is conducted without those being observed becoming aware of this.

As an alternative to being physically present, you might observe remotely, your location being detached from the activity or event being observed. This can take place either at the same time or afterwards, the latter being termed detached observation or non-participant observation. This, along with the four participant roles already outlined, comprise the **classic approach to observational research**. These claim to be objective and to rely solely on the researcher's perspective and interpretation to make sense of what is observed (Section 4.2). A final role, the **collaborative observer** questions the idea of objective observation and reliance on the single perspective of the researcher's interpretation. This encourages open and critically reflective participation by the researcher and collaborative involvement of informants in the conduct of observation research and interpretation of data (Figure 9.3). We now discuss these six observation roles and consider ethical issues related to their use.

Complete participant

As a **complete participant** you conduct observation in an organisational or social setting in which you already fully participate. Your position as an 'insider' allows you to select the particular situation to observe and, as you are already accepted as a member of the group or organisation, you choose not reveal this purpose to other members. You may be able to justify covert observation on research grounds in the light of your research questions and objectives. For example, you may be interested to know the extent of misogynist and racist comments in a particular work setting. You would probably be keen to discover which employees engage in such comments, what they say about whom and how others react to

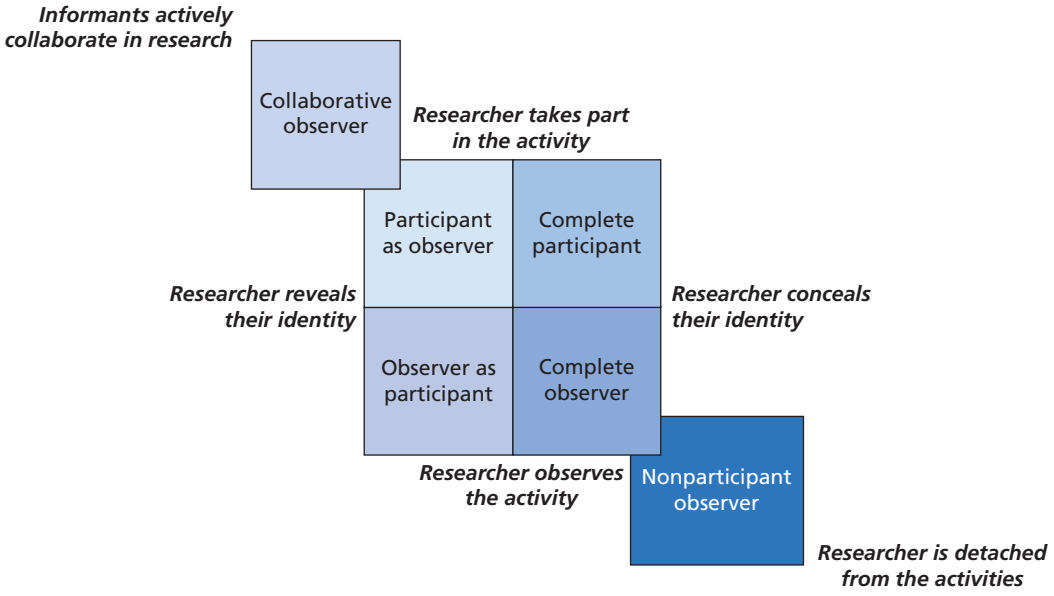


Figure 9.3 Observer roles
Source: © 2018 Mark Saunders, Philip Lewis and Adrian Thornhill

these comments. Were you to explain your research objectives, it is extremely unlikely they would cooperate since employers do not tolerate such offensive comments. In addition, they might see your research activity as prying.

This example raises ethical concerns about lack of informed consent and use of data (Section 6.6). You would be in a position where you were 'spying' on people who were colleagues. They may have learnt to trust you with information that they would not share were they to know your true purpose. It highlights the importance of undertaking an ethical review and considering risk to individuals and the researcher (Section 6.6). However, there may be other foci where, as complete participant, there would be few, if any, risks of breaching trust or creating harm. An example might be where you were researching working practices in an organisation to evaluate the relationship between theory and practice, where it would be possible to maintain the anonymity of both the organisation and informants as you participated as a co-worker.

Participant as observer

As **participant as observer** you both take part and reveal your research purpose. You may adopt this role as an 'insider' related to your existing membership of a group or organisation, but, unlike the complete participant, will reveal your intention to conduct observation if you can gain consent. Alternatively, as a part-time business or management student, or while on a work placement, you may be able to use your existing employment status to adopt the role of participant-as-observer.

You may also be able to participate in a group without being a full member. In this regard Spradley (2016) recognises 'active participation' which he differentiates from full participation. In **active participation** you would enter a research setting as an 'outsider' to observe but with the intention of learning how to participate in it in order to obtain an understanding that is similar to that of being an 'insider'. For example, Waddington (2004) describes his experiences of being participant as observer, in which he participated in a strike, spending long hours on the picket line and socialising with those on strike, without being an employee of the company involved. To achieve this, it was necessary to gain the support and trust of those involved. Waddington describes how he immersed himself in this context, how he experienced the emotional involvement of participating in this event and how he experienced the same feelings as the defeated strikers at the end of the strike.

Observer as participant

In the role of **observer as participant** you would observe, and your purpose would be known to those whom you are studying (Box 9.1). Participation in this role would mostly be restricted to being present at an event or activity in order to observe it. You might sit in a meeting while it took place, act as a spectator or onlooker while an event occurred, or watch an activity from the margins. In some cases for this role it might become necessary to engage in a slightly greater, but still limited, level of participation to continue observing. In this case it will become necessary to have some limited interaction with informants. For example, adopting the role of observer as participant in an outward-bound team building course would mean that you were there as a spectator, but it might be necessary to interact with informants and take part in some activities to be able to conduct your observation.

Spradley (2016) refers to this limited level of involvement as **moderate participation**. Here you take on those attributes of being an 'insider' necessary to continue observing while maintaining other characteristics of being an 'outsider'. This allows you to participate in an event or activity at a level sufficient to allow your role as observer.



Box 9.1 Focus on management research

Observing the social impacts of an LGBTQI+ event in a rural community

Lewis and Markwell (2021) undertook research to investigate the social impacts of hosting a Pride event for the first time in a rural community using a qualitative exploratory design combining participant observation and semi-structured interviews.

Their research, published in the *Leisure Studies,* was undertaken at the inaugural Wagga Wagga Mardi Gras in Australia. This had been conceived as an annual event, in part to support local LGBTQI+ residents, and attracted approximately 12,000 attendees. Arguing that the meanings attached to such events are socially constructed, Lewis and Markwell adopted and interpretivist philosophy and immersed themselves in the research setting.

Following ethical approval, their participant observation combined note taking, photography, and incidental conversations with retailers, other service providers and residents. To understand the social setting before the event, they conducted observations along the route of the parade both two weeks prior to the parade and the day before the parade. For both these sets of observations their roles were likely to be observer as participant. Further observations were conducted on the day of the parade, with Lewis participating in the parade to enable immersion in the actual experience. Assuming he revealed himself as a researcher to those he observed, Lewis's role was likely to be that of a participant as observer. Short semi-structured interviews were also conducted with 15 residents and 19 visitors, these data being considered essential to gain a deeper understanding of the meanings associated with the Mardi Gras.

Based on their research, Lewis and Markwell concluded that the event had challenged assumptions, helped build community acceptance, contributed to identity construction and created opportunities for connections with other LGBTQI+ residents and the rural community more broadly.

As observer as participant, your identity as a researcher would be clear to all concerned and they would know your purpose. This would present the advantage of you being able to focus on your researcher role. For example, you would be able to note insights as they occurred to you. You might also be able to undertake discussions with the informants to clarify and improve your understanding. What you would lose would be the emotional involvement: really knowing what it feels like to experience what you observe.

Complete observer

As **complete observer** you would not reveal the purpose of your activity to those you were observing, nor take part in the activity or event being observed. Like the role of observer-as-participant you would be present at the activity or event in order to observe it, either by being able to sit in, acting as a spectator or onlooker, or watching from the margins.

For example, the complete observer role may be used to study consumer behaviour in supermarkets. Your research question may involve you observing consumers at the checkout. Which checkouts do they choose? How much interaction is there with fellow shoppers and the cashier? How do they appear to be influenced by the attitude of the cashier? What level of impatience is displayed when delays are experienced? This behaviour may be observed by the researcher being located near the checkout in an unobtrusive way, perhaps by sitting in the nearby café. The patterns of behaviour displayed may be the precursor to

further observational research, involving a higher level of participation by the researcher, in which case this would be the exploratory stage of such a research project.

As with the role of complete participant, use of covert observation again raises questions of ethics. These include concerns about privacy, lack of informed consent and use of the data that are collected (Section 6.6). The complete observer, in undertaking research in an unobtrusive way, at worst ignores concerns about the privacy of those who are observed and at best acts as their own judge in deciding what is appropriate to observe. This is particularly pertinent in relation to observation involving children, those who are vulnerable, and power relationships where authority is being exercised over others. It highlights concerns about the lack of informed consent from those who are observed, the nature of the data produced through this type of observation, how it is to be used and what will happen to it at the end of the research project. In complete observation, the researcher treats those who are observed as research subjects rather than informants. In this role, it is the subjective judgement of the researcher that will be used to interpret data, rather than any involvement from those being observed.

Non-participant observer

In addition to the four roles we have discussed in which the researcher is present at the setting being observed, even if this is only from the margins or by lurking online, there is a further role in which observation is detached from the event being observed. This is the **non-participant observer** role in which the researcher does not share physical or virtual proximity to those whom they observe (Spradley 2016). This role is made possible by technology allowing the researcher not to be present in the place where, or at the time when, the event or activity occurs. Where this involves using existing audio, visual or audio-visual documents produced for another purpose (Section 8.2), it is known as secondary observation.

Collaborative observer

As a collaborative observer you would seek, by collaborating with informants, to overcome potential ethical concerns, data quality issues and epistemological questions associated with the classic approach to observation. We noted earlier that covert observation leads to ethical concerns because of lack of informed consent and use of data gathered without this. Even overt observation that is not collaborative may lead to similar ethical concerns that need to be considered throughout a research project (Section 6.6). Data quality issues and epistemological questions may result from the dominant role of the researcher in the classic approach to observation. Claims regarding researcher objectivity have been challenged by the need to recognise how their background (social, cultural, political, gender and so forth) may affect data collection, analysis and interpretation. This raises a question about relying on the single perspective of the researcher's interpretation to make sense of what is observed and casts doubt on the idea that the researcher is able to reveal an objective reality or absolute truth in their account of these observations (Angrosino and Rosenberg 2011; Van Maanen 2011).

In collaborative observation those being observed are treated as collaborators and involved in many aspects of the research process. Such collaboration could commence from the outset of the research design through their involvement in the formulation of the research plan based on their understanding of the research question, aim and objectives. As active collaborators throughout the research process they could engage in discussions,

interviews, providing feedback, offering their interpretations of the data and informant accounts. In analysing and interpreting data you would not try to reconcile different accounts to produce a single unified account. Rather you would accept the presence of multiple interpretations and conflicting accounts to portray the range of perspectives represented in the observations.

As a collaborative observer you would seek to develop a high level of participation, also trying to recognise how your own position could affect the nature of the observations and interactions with those who collaborate. This stresses the importance of you being critically reflective and engaging in reflexivity throughout the research process (Sections 1.5 and 2.2). The adoption of this stance recognises that the presence of the researcher in this setting, no matter how well accepted, is likely to affect others' behaviour and therefore what may be observed.

It may seem that collaborative observation is an ideal observational role. In practice though, attempting to negotiate and use collaborative observation is likely to be demanding and time-consuming, and may be beyond your resources. There may, however, be scope to achieve some aspects of collaborative observation. You may not be able to involve informants in the design of your research project, but you may be able to involve them in discussions about what has been observed to seek their interpretations. You might also reflect critically about your role as observer. This suggests a continuum between the role of participant as observer and that of the collaborative observer, with increasing scope to involve informants as active collaborators (Figure 9.3).

Where you are planning to undertake observation research you may still be unsure which observer role will be most appropriate for your research project. Box 9.2 offers a checklist for some of the aspects you need to consider in making this choice. There may be other aspects that are relevant to your choice of observer role in relation to the context of your proposed observation research. You will also need to identify and consider these in making your choice.

Purpose and setting

Choosing an observational setting that supports your research purpose is crucial to the success of this research method. For example, your research question and objectives may require you to observe a particular activity in a single location. This may be a real-world location or it may be an experimental setting you design yourself. Alternatively, your research question may require you to observe multiple events across a range of settings. For many, the former scenarios are likely to be easier to operationalise than the latter; you therefore need to consider the feasibility of answering your research question regarding finding an appropriate observational setting or settings.

Observational settings may broadly be categorized as naturalistic, controlled, virtual or detached. **Naturalistic observation** is conducted in a 'real world' location, the intention being to observe without influencing the setting. For example, in an ethnographic research strategy (Section 5.5) the researcher conducts observations where informants live, work or otherwise socially interact. This is often referred to as 'going into the field' and is known as **fieldwork**. Alternatively, observation may be conducted in a controlled or artificially created setting, such as where the researcher sets up a laboratory-based experiment and observes those taking part. Observation may also be conducted in a virtual setting, involving Internet-mediated observation (Section 9.5). Non-participatory observation allows you to conduct observation in a remote or detached setting.

Box 9.2 Checklist

Aspects to consider in choosing your observer role

Aspect	Consideration
Ethical concerns	Have you: ✔ ensured your observer role does not produce any risk of embarrassment or harm to those you wish to observe? ✔ negotiated informed consent with intended informants and ensured compliance with ethical principles such as those outlined in Table 6.3 (Section 6.6)? ✔ ensured that ethical principles can be upheld through the stages of your research project including the management of data afterwards (Section 6.7)?
The purpose of your research	✔ ensured your observer role is appropriate to the nature of your research question and scope of your research objectives?
Your status in relation to informants in the observational setting	✔ considered how your status as either an 'insider' or 'outsider' might affect your ability to carry out your observer role? Where you are an 'insider', have you considered how your status in relation to other members of the group or organisation will affect your proposed observation of them? Where you are an 'outsider' have you considered how your status might affect what you are able to observe?
The level of participation you need to demonstrate in the observational setting	✔ considered whether you need particular attributes or skills to participate in the observational setting? Where you do not possess these have you established whether it is feasible to acquire them in the time available and how you might achieve this?
The depth of understanding you will need to develop and the time you have available	✔ established the amount of time required to develop a sufficiently rich and deep understanding of the phenomenon?
Observer role preference	✔ considered your own methodological preferences? Much observation relies on the building of relationships with others. You may have a personal preference for an observer role with high levels of researcher participation and informant involvement or, alternatively, may prefer a role with a low level of, or no, participation.
Organisational access	✔ been able to negotiate access at the necessary level and with the right people to undertake your observation (Sections 6.2 to 6.5)?

9.3 Participant observation

Nature of participant observation

The term participant observation reflects the dual purpose of this research method: to take part in the activity or event being studied by participating as a member, and to observe the social world of those in the work group, organisation or community. Spradley (2016)

identifies six characteristics of participant observation highlighting its dual purpose, experiencing the activity or event as both insider and outsider, developing explicit awareness, observing widely, being reflective and recording carefully all observations. These are outlined in Table 9.2.

Participant observation has its roots in social anthropology, but it was the Chicago School (at the University of Chicago) that changed its focus by using ethnographic methods to study social and urban problems within cultural groups in the USA. A seminal example of this work is Whyte's (1993) *Street Corner Society,* which examined the lives of street gangs in Boston. This approach involved researchers living among those whom they studied, to observe and talk to them to produce detailed cultural accounts of their shared beliefs, behaviours, interactions, language, rituals and the events that shaped their lives (Cunliffe 2010; Van Maanen 2011). Participant observation is used widely within an ethnographic research strategy (Section 5.5).

The high level of researcher immersion in the research setting is a key strength of participant observation, especially when compared with other data collection techniques. As you become a member of the group within which participant observation is conducted, you come to understand the symbolic world of the informants and their perceptions about their social situation. This allows you to develop a deep and nuanced understanding of the meanings of informants' interactions and how they respond to their social situation and changes to it. This is quite different from using a questionnaire to collect data, where ability to understand individual interactions and relationship to social context is likely to be less (Section 11.2). Even using in-depth interviews may not reveal the same depth of understanding as engaging in participant observation to understand informants' symbolic world.

The symbolic frame of reference is located within symbolic interactionism (Section 4.4). In this the individual derives a sense of identity from interaction and communication with others. Through this process of interaction and communication the individual responds to others and adjusts her or his understandings and behaviour as a shared sense of order and reality is 'negotiated' with others. Central to this process is the notion that people change

Table 9.2 Characteristics of participant observation

Characteristic	The participant observer . . .
Engaging in a dual purpose	. . . participates in the observational setting as well as observing those within it
Experiencing as both 'insider' and 'outsider'	. . . experiences the observational setting from the perspective of both insider as participant and outsider as observer
Developing an explicit awareness	. . . needs to develop an explicit awareness of all aspects of the observational setting including the people within it
Using a wide-angle lens to observe	. . . needs to see, hear and record everything that may be relevant in the observational setting
Being reflective	. . . engages in reflection to learn from the experiences gained in the observational setting
Recording all observations carefully	. . . needs to record carefully what is observed and how this has been experienced

Source: Developed from Spradley (2016)

continuously in the response to the social circumstances in which they find themselves. The transition from full-time student to career employee is one example of this. (How often have you heard people say, 'She's so different since she's worked at that new place'?) As individuals, our sense of identity is constantly being constructed and reconstructed as we move through differing social contexts and encounters different situations and different people. Consequently, if you wish to explore the dynamics of a social situation, participant observation may be appropriate (Box 9.3).

Observer roles

To engage in participant observation you will need to participate, ideally immersing yourself in the group, organisation or setting's routines, rituals, use of language and social relations to gain insights as an insider, as well as to observe (Van Maanen 2011). However, the level of participation can vary from full participation (as just outlined) to passive participation where you merely observe from the margin. Participation and observation may be undertaken overtly or covertly. This means that participant observation may use any observer role except nonparticipant (Section 9.2).



Box 9.3 Focus on student research

Managers and their use of power: a cross-cultural approach

Mong was a Chinese business graduate who had recently been working in a Chinese/German joint venture in the automotive industry in the supply chain department. As part of her MBA, she had to submit a research project on a management topic of her choice.

Mong was interested in the international management part of her course that dealt with cross-cultural matters. This was particularly significant in her case as the company site where she worked had both Chinese and German managers.

Mong felt that a body of theory, which she could usefully link to the issue of cross-cultural integration, was that of power. With help from her project tutor, she developed a research question that allowed her to explore the way in which Chinese and German managers used power to 'negotiate' their relationships in a situation which was unfamiliar to both sets of managers. Mong's question was: 'What strategies are used by different groups of national managers collaborating in an international joint venture to negotiate their transnational relationships and how effective are these?'

Mong was fortunate that one of her duties was to take minutes at the twice-weekly management meetings in the department. She obtained permission to observe these meetings to collect her data. She developed a semi-structured coding schedule, which related to her research objectives, and used this during each meeting.

Data collection was not easy for Mong as, in addition to taking minutes, she needed to note the type and frequency of responses of managers. However, as time progressed she became skilled at fulfilling both her minute-taking and data-collection roles. She also obtained permission to audio-record the meetings. At the end of four months, when she had attended over 30 meetings, she had collected a considerable amount of data and was in a good position to analyse these and draw some insightful conclusions.

Mong's observation role raised ethical questions as she did not reveal her researcher role to the meeting delegates. She discussed these questions with her senior manager in the company and project tutor and completed the necessary university ethics committee documentation. It was agreed by all concerned that Mong's research objectives justified the data collection approach chosen and met the university's ethical code.

Settings

In Section 9.2 we discussed the nature of observational settings recognising these ranged from naturalistic to contrived. We also recognised participant observation involves gaining entry to a setting where intended informants live, work or otherwise socially interact. Participant observation can therefore take place in settings where social relations occur in their natural context ,and contrived contexts such as experiments. It may also be conducted in a virtual setting, involving Internet-mediated observation (Section 9.5).

Structure and data collection

Participant observation, as an immersive and experience-based approach, is capable of producing a substantial quantity of data that are rich in meanings, complex in variety, and grounded in their setting. These data will primarily be qualitative but may also include some that are quantitative. Collecting such a substantial, rich, complex and grounded set of data involves participating and observing in the research setting, and using supplementary techniques to collect data. As participant observation progresses, your focus is likely to become more defined leading to a more structured approach. We now consider each of these aspects, starting with focus and structure before considering data collection techniques and data recording.

Focus and structure

Participant observation is a process where the research focus, structure, data collection and data analysis are interrelated and emergent (Spradley 2016). When participant observation commences, the focus of observation is broadly flexible and open, with you as researcher recording the flow of events, behaviours or social interactions observed. The purpose of this initial **descriptive observation** is likely to be exploratory, describing the setting, those within it and what it is like to take part in it (Section 9.2). As these data are collected and recorded you will need to make sense of what is happening and why, understand what appears to be interesting and important; this interactive process of data collection and analysis being discussed in much greater detail in Chapter 13.

Spradley (2016) advises all observational settings, even the seemingly simple and straightforward ones, are characterised by cultural complexity. During descriptive observation you will begin to understand this complexity, enabling you to identity the aspects on which to focus. Being a participant observer means recording faithfully what is observed during each observation session even if this involves noting down events or activities that appear to be the same as, or similar to, those previously recorded. By following this repetitious procedure you will develop analytical insight and understand the cultural complexity of the setting.

During the process of undertaking descriptive observation (Figure 9.4) you will, as participant observer, become more focussed in your on-going observations. Your observation will concentrate on the aspect or those aspects that relate to this more defined focus. This is also likely to lead to a more structured approach as you define questions on which to focus. Not surprisingly, this second stage in participant observation is known as **focused observation**. Spradley (2016) suggests criteria to choose a narrower focus. These include choosing a focus related to personal interest, informant suggestions, theoretical interest, strategic importance or the recognition of a core aspect that would help to explain other bringing these together conceptually.

The interactive process of collecting data, analysing them, narrowing the focus of the research and increasing the structure to concentrate observation on a particular theme or aspect leads to a third stage in participant observation, known as **selective observation** (Figure 9.4). This continues until you have answers to the questions that define this

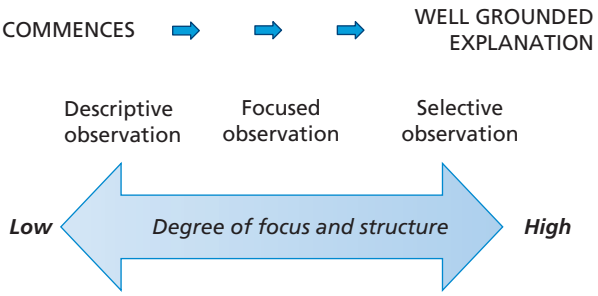


Figure 9.4 Emerging focus and structure in participant observation

selective focus. This will be evident when continued data collection and analysis produces theoretical saturation in a similar way to a Grounded Theory approach (Section 5.5) leading to the development of a well-grounded explanation, or theory that is grounded in the data.

Data collection procedures

Observing while immersed in the research setting is the main way of collecting data during participant observation, being referred to as **direct participation and observation**. It is likely, however, that you will supplement it with other data collection techniques. These include interviewing informants, discussing findings with them, seeking informant accounts and interpretations, using documentary evidence, asking informants to keep diaries, arranging for informants to video record or photograph their activity, and engaging in reflection.

Your scope to use any of these supplementary data collection techniques depends, in part, on your observer role. For example, where you adopt the role of collaborative observer, you may be able to use a wide range of supplementary data collection techniques including involving your informants through discussing findings and seeking informant accounts and interpretations. Alternatively, where you adopt the role of complete observer, your scope to involve those who unknowingly act as informants is severely limited unless, in a particular setting, you are able to talk to them individually without them knowing your true purpose. This might be possible if you are acting as complete observer in a public meeting and sat amongst other people in the audience. In between these two extremes there is likely to be varied scope to use supplementary data collection procedures.

Where you adopt an overt observer role – as collaborative observer, participant-as-observer or observer-as-participant – you may be able to interview a sample of your informants. This may be a formal interview where you arrange a time and place to discuss an observed activity to make sense of it. Many of your interviews you conduct are likely to be opportunistic and informal. You may be able to have a lunchtime chat or corridor conversation that helps you to make sense of something you have taken part in or observed. This produces what Van Maanen (2011: 56) refers to as 'conversational data'. In an overt observer role you may also be able to arrange for informants to video record or photograph their activity (Section 9.6); or ask them to keep diaries (Section 10.12). Documentary secondary data such as minutes of meetings or material available on a company website (Section 8.2) may, along with supplementary data collection techniques, also be helpful.

We consider it is also important to think through and note your own experiences of participating in, and observing, a setting. This will involve you reflecting about how you have interpreted your observations to understand the assumptions used to reach these interpretations, and to evaluate other ways of making sense of your observations, especially from the perspectives of those involved. Such reflections could be recorded as self-memos, a research notebook, or a reflective diary (Section 1.5). They will subsequently form another important source of data as you conduct your analysis (Section 13.5).

Data recording

Observational fieldwork produces a considerable amount of data and there is a danger of feeling overwhelmed by the amount that needs to be recorded. The initial stage of participant observation involves a great deal of description but, even as you move through the stages of focused observation and selective observation, you still need to record observations that describe the research setting and the activities and social interactions that occur. This will help you understand what is happening and to contextualise your focused and selective observational data. You will also need to record all data from the supplementary data collection techniques you use and your reflections.

Recording data needs to occur as close to its observation as is possible. Your scope to record data while you undertake observation will depend in part on the observer role you adopt. Where you have revealed your research purpose (observer as participant) you may be able to make notes of your observations as they occur. However, this may not be possible in settings where your role as participant makes this difficult (sometimes in the role of collaborative observer or participant as observer). For example, if you are working in a factory on a production line it would be very difficult to stop taking part for a few minutes every hour to makes notes! In such a circumstance you would have to use your 'break time' to make brief scratch notes. **Scratch notes** comprise handwritten, typed or voice recorded key points made as close to the time of observation as possible. They provide an immediate, albeit condensed, version of what you have observed (Figure 9.5) which you write up more fully as soon as possible.

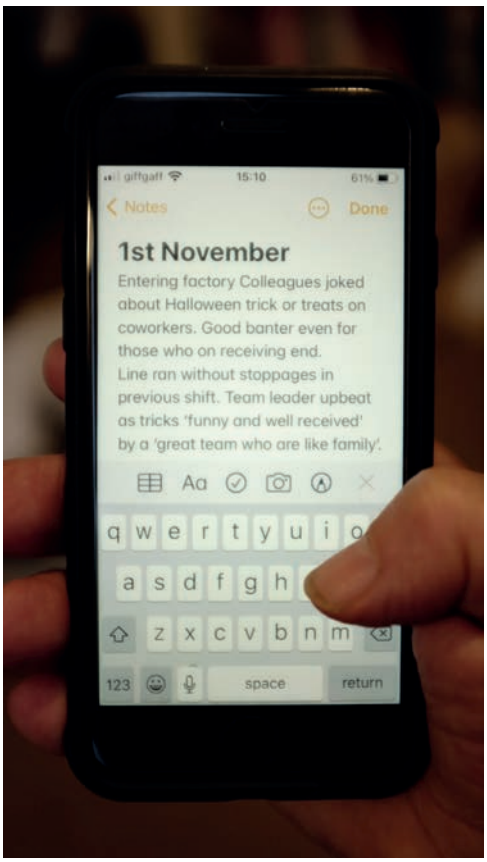


Figure 9.5 Scratch notes on a smartphone
Source: © 2021 Mark NK Saunders

Where you undertake observation in a covert role you still may be able to make brief notes immediately, for example on your smartphone. Where this is not possible you have to wait until the activity or event has finished. However, the longer you leave between observing activities or events and recording these observations as data, the more likely you are to forget details about the setting and the social interactions that define and make sense of what you have observed.

Once you have finished the observation, you will need to expand your scratch notes to a fuller account. Using the key points and quotations you noted down, you will be able to fill in the detail of what you observed. You should also produce a separate but linked account that records your personal perceptions and feelings about what you experienced. You may then start to analyse these data and produce a further account that records your initial thoughts to make sense of them. Analysis will involve coding and categorising data (Section 13.6). If you were able to video or audio record an observation session, although you will be able to watch or listen to the recording repeatedly, you are still advised where possible to follow the process just outlined!

The data you generate when undertaking an observation relate to (Table 9.3):

- the original observation;
- your thoughts and feelings about the experience of observing;
- interpretation and reflection;
- any supplementary methods used.

Those that are directly observed may be recorded in a fieldwork or research notebook. Others such as personal interpretive and reflective thoughts may be recorded separately in self-memos or in a research journal or diary (Section 13.5). You may also find it helpful to classify your data by date of observation as well as by data type.

Table 9.3 Participant observation data types

Data type	Explanation
Observational	Created by the participant observer from scratch notes, recalled observations-in-person, video or audio recordings, or visual images. Record observations about the setting, events and social interactions observed. Recordings and visual images may be created either by the participant observer or the informants. Recorded in a fieldwork/research notebook.
Experiential	Created by the participant observer based on her or his experience when undertaking observations, interviews or informal discussions. Personal perceptions and feelings recorded as self-memos, or in a research journal or diary.
Interpretive	Created by the participant observer from interpreting observational, experiential or supplementary data, or from informants' interpretations. Recorded as self-memos, or in a research journal or diary.
Reflective	Created by the participant observer by reflection about any or all of the other types of data, leading to the creation of further interpretive data. Recorded as self-memos, or in a research journal or diary.
Supplementary	Created by the participant observer from interviews, informal discussions with informants, or using documentary sources. Recorded in a research notebook.

Data quality issues

As participant observation involves studying social actors and social phenomena (i.e. informants and their activities) in their natural setting, research findings usually exhibit high **ecological validity** because of their relevance to the situation. However, using participant observation may lead to a number of threats to reliability/dependability and validity/credibility (Section 5.8 and, in particular, Table 5.8). Where the setting is unknown to the observer and she or he needs to understand the cultural and interpersonal nuances in order to interpret it. Alternatively, where the observer is an insider and very familiar with the setting, she or he may take some things for granted instead of 'standing back' and analysing these through an outsider's viewpoint. We now consider the four interrelated quality issues highlighted in Figure 9.6.

Observer error

Observer error refers to your lack of understanding about, or over-familiarity with, the setting in which you are a participant observer and how this may lead you unintentionally to misinterpret what is happening. Such an error would not be deliberate. Misinterpretation arises from a lack of real understanding and the mistaken insights that are based upon this. This emphasises observation as a process requires immersion in, and understanding of, the context to produce valid and reliable results.

Observer drift

Observer drift occurs when the observer unintentionally redefines the way in which later but similar observations are interpreted. Spending a long time in the field combined with unthinking familiarity may lead to inconsistencies when interpreting similar events over time. As data collection and data analysis are part of an ongoing iterative process, you need to revisit your earlier observations and analyses as you continue to collect and analyse data to maintain consistency of interpretation.

Observer bias

Observer bias occurs when you use your own subjective view or disposition to interpret events in the setting being observed. If you do not allow yourself sufficient time to develop the depth of understanding required to interpret the setting objectively this can lead to observer bias, and you are unlikely to be unaware that you are doing this.

When using observation, you need to be aware that every observation you record may be open to more than one interpretation. Although this can appear a daunting thought, it should encourage you to spend sufficient time in the observation setting to begin to understand it, and then to adopt a rigorous analytical approach to making your interpretations.

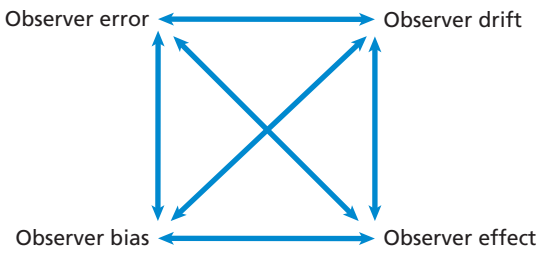


Figure 9.6 Data quality issues in observation

How you make interpretations will depend on whether you are using covert or overt observation. If observing covertly, you will not be able to check your interpretations with informants. You therefore need to think about ways in which what you observe might interpreted and then, as you continue to make observations, reflect on how each interpretation helps to explain what you observe. You also need to be open to the idea that multiple interpretations may help to explain what is observed and note these.

If you are using observing overtly, you can ask your informants to meet and discuss with you or, read and comment on the observational data related to them. This provides you an opportunity to check your interpretations and benefit from the insights that informants are able to add to your own views (Box 9.4). This process is known as **informant verification** and is similar to participant or member validation (Section 5.8).

Observer effect

Just by being present, the researcher may affect the behaviour of those being observed, potentially resulting in unreliable and invalid data (LeCompte and Goetz 1982; Spano 2005). This is referred to as the **observer effect**. The implication of this is informants will work harder or act more ethically when they know they are being observed (Monahan and Fisher 2010). Conversely, those being observed may decide to slow their work if they feel any measurements of this will lead to them being given more demanding targets. Either way, observations will not be reliable.

One solution to this is for you to act covertly as complete participant or complete observer (Figure 9.3). However, this may not be appropriate, even if it were ethically acceptable. Alternatively, adopting the role of observer as participant, you might try to 'melt into the background' having **minimal interaction** with informants. This may involve sitting in an unobtrusive position in the room and avoiding eye contact with those being observed.

A further solution, where the observation is overtly conducted, is related to familiarisation. If you operate as collaborative observer, participant as observer or observer as participant your informants become familiar with you and take less notice of your presence, where they feel they can trust you. This is known as **habituation**, where the informants



Box 9.4 Focus on student research

Informant verification

Susanna undertook participant observation in the customer services call centre of a retail company. Her research focused on training and quality assurance of call centre staff. One aspect of her research focused on the training needed to be able to deal with complex customer issues. For this Susanna negotiated access to spend a period in the call centre in the role of observer as participant. She was able observe call centre staff dealing with complex customer issues and to understand how they used their discretion to deal with customers sensitively while trying to adhere to their training and to any scripted parts of their telephone conservations with callers. To achieve cognitive access, she gained the consent of individual informants to observe each for a day or part day. This provided her with the opportunity to observe a number of informants during the period of her agreed access.

Susanna negotiated to meet each informant during their main rest break on the following day. This allowed her to describe and discuss her observations about particular calls the informant had taken. Most of these informants were interested and provided Susanna with their own interpretations and insights, often recalling what they had been thinking as they had dealt with the particular call. These additional interpretations, directly from the informants, were very helpful to Susanna as she continued to observe and interpret; and later when she wrote up her research project.

being observed take their observation as usual and behave normally. To achieve habituation and begin to collect reliable data you will probably need to undertake several observation sessions in the same research setting with the same informants.

Not all researchers agree that observer effects inevitably lead to unreliable results. In addition, other strategies have been proposed to recognise and manage observer effects. Monahan and Fisher (2010) challenge some of the assumptions about observer effects. They argue that all research methods can have researcher effects that may lead to bias. Consequently, qualitative research including participant observation may be no more prone to bias than quantitative approaches to research, which are often held up as being more objective. They also argue observer effects may not always be negative and negate the value of the observer's results. Rather, while the presence of an observer may have an effect on those whom they observe, the result of this effect can lead to the collection of valuable data.

Monahan and Fisher (2010) suggest where informants stage performances, these can demonstrate an idealised set of behaviours to observers. Such performances show what the informants think the observer ought to know and see. You can compare such idealised performances to other observations where the performance cannot be staged or managed so easily. This may occur when you are observing a more pressured or stressful situation, or perhaps where other organisational participants are involved and the ability to manage a staged performance is not possible. Such situations offer the possibility of gaining rich and multi-layered data that can help you both understand the setting and support your data analysis and interpretation.

Informants may also try to manage their performance through self-censorship, their behaviour being likely to be worse when not observed. Habituation may result in such cloaking behaviour being dropped. Apart from habituation, you can check the validity of your observations by looking for inconsistencies in the data you collect and using differences between informants' performances, to identify potential of self-censorship. Irrespective of whether a performance is being staged, or self-censorship is occurring, or whether neither of these are affecting what is being observed, this process of observation allows researchers to get close to and interact with informants (Monahan and Fisher 2010). Observation therefore offers an advantage over other research methods where distance and separation mean data cannot be as detailed and nuanced. These advantages and disadvantages of participant observation are summarised in Table 9.4.

Table 9.4 Advantages and disadvantages of participant observation

Advantages	Disadvantages
• Good at explaining 'what is going on' in particular social situations • Heightens the researcher's awareness of significant social processes • Particularly useful for researchers working within their own organisations • Some participant observation affords the opportunity for the researcher to experience 'for real' the emotions of those who are being researched • Virtually all data collected are useful	• Can be very time-consuming • Can pose difficult ethical dilemmas for the researcher • Can be high levels of role conflict for the researcher (e.g. 'colleague' versus researcher) • Closeness of the researcher to the situation being observed can lead to significant observer bias • Being a participant places additional demands, to which not all researchers are suited • Access to organisations may be difficult • Data recording is often very difficult for the researcher

9.4 Structured observation

Nature of structured observation

Structured observation is an observational method that uses a high level of predetermined structure and a formalised process, often to quantify what is observed systematically. Structured observation is particularly effective at revealing 'the mundane, routine activities that collectively make up those practices of everyday life' (Clarke et al. 2009: 348) such as the incidence of particular behaviours, interactions or events. Structured observation may form only a part of your data collection approach because its function is to tell you which things happen, how often and possibly when and in what sequence rather than why they happen.

Structured observation in business research has a long history. It has been used over many decades to analyse how factory workers carry out their tasks and to measure the times that it took to complete these. Such 'time-and-motion' studies were used by employers to increase their control over the way work was conducted, and reduce the time required to undertake different tasks. Today work activities of many service sector workers such as those in call centres and supermarket checkouts are recorded digitally. When shopping online or in supermarkets, most of us participate in forms of structured observation without really thinking about it or consciously giving our consent. Retailers' 'VIP rewards' or 'loyalty card' schemes allow them to record what we have purchased and link this to other details about us when provide our scheme membership number record when we pay.

The Internet of Things has widened further the scope to conduct forms of structured observation. Every time you 'visit' a website this will be recorded electronically. Over the past few years, we have become more aware of the ways in which the data that we create online may be scraped and combined with data from other sources to create commercial value, not necessarily putting the interests of those who these data are about first (Box 9.5).



Box 9.5 Focus on research in the news

From Facebook to LinkedIn, data-scraping leaks proliferate

The incentives and opportunities for harvesting valuable personal information have multiplied

By Richard Walters

Is there anything left to be revealed about the extent and the frequency with which large volumes of personal data leak from Facebook?

A collective yawn seemed to be the appropriate response this month at the latest news. If the information about users' social networks that leaked out in the Cambridge Analytica scandal was like the plutonium of social media, then this latest slip involved a decidedly low-grade fuel. Details such as names, phone numbers and birth dates of more than 530 m people had been scraped from the site, in what amounted to a mass harvesting of data that was already publicly available.

The regulators, on cue, said they would investigate, as regulators must. Irish data protection officials, who take the lead in overseeing Facebook in Europe, now have 15 different reviews going on into the company's apps.

But while this might look like a misdemeanour without any real victims, it raises more troubling questions. Even public material like this, combined with other data sets to build fuller profiles on people, can be used for malicious ends. And the case touches on a deeper issue: the growing volume of data that people release publicly as part of their digital lives – often after being nudged by the companies which benefit from the disclosures – can later be used in ways that hurt their own interests.

As if to underline the point, the last few days have brought other cases of mass data scraping to light. LinkedIn said public information taken from its service appeared to have been mixed with data from other sources and offered for sale online. And a trove of information from audio social network Clubhouse was discovered on a site used by hackers.

Scraping has been around since the early days of the Internet, when potentially valuable information was first left in plain sight on public pages. But recently, the incentives and the opportunities have multiplied.

Social networks have become ever-larger repositories, presenting attractive targets for harvesters operating at scale. And the rise of machine learning has brought new incentives, as AI has turned the raw material into potential gold. The controversial US face-recognition company Clearview AI, for instance, uses a huge database of images scraped as the raw material for its service.

There are also more ways to scrape in volume. Many companies now make their data available through APIs, the digital 'hooks' that others can use to connect to their systems. This reflects the creeping automation in the information realm, as well as a common business strategy.

These days, companies often set their sights on becoming platforms, making themselves an indispensable resource for others. Becoming the go-to source for data on any subject is one way to achieve that. This might raise few misgivings for a company such as eBay, which wants to be seen as the definitive source for all product listings. But it is more troubling when personal information is at stake.

It is not only scammers who have seen the opportunities. The commercial value in publicly available data has also led to creative – and unwanted – uses. Data analytics company hiQ trawled LinkedIn, for instance, looking for tell-tale signs of who among the professional network's users might be looking for a new job – then reported it back to the users' employers.

Academics have also seen the value. A group at New York University drew a protest from Facebook last year when it scraped large amounts of information to study how political adverts were being targeted on the network. The NYU study may have had valid academic goals, but – as Cambridge Analytica showed – it is not always easy to tell when legitimate research is being used as a cover for something else.

In short, this looks like yet another instance where the design of today's mass information systems has not always put users first, and where the guardians of the data have allowed their own interests to cloud their decisions.

To be sure, LinkedIn has fought back against hiQ, blocking its ability to harvest data. But it lost in court – and again on appeal – when hiQ sued for access. Others have seemed less troubled. Facebook initially brushed off its latest leak, saying only that it occurred before September 2019 and that it had fixed the issue, without reporting it to regulators or warning users.

Facebook also tacitly put some of the blame on its own users, saying they could protect themselves better by thinking more about what information they share publicly, and doing regular 'privacy check-ups' to make sure they are not compromised. This ignores the fact that few people have the time or inclination to indulge in such digital hygiene, and are in no position to judge how what they disclose today might be used against them tomorrow.



Source: 'From Facebook to LinkedIn, data scraping leaks proliferate', Richard Water (2021) *Financial Times,* 15 April. Copyright © 2021 The Financial Times Ltd

This highlights how structured observation by itself may be little more than surveillance or fact finding. It is the ways in which these data are combined and analysed that can transform such observations into valuable research findings.

However, structured observation does not have to be undertaken electronically. One of the best-known examples of managerial research that used structured observation as part of its data collection approach was the study of the work of senior managers by Mintzberg (1973). This led Mintzberg to cast doubt on the long-held theory that managerial work was a rational process of planning, controlling and directing. Mintzberg studied what five chief executives actually did during one of each of the executives' working weeks. He did this by direct observation and the recording of events on three predetermined coding schedules. This followed a period of 'unstructured' observation in which the categories of activity that formed the basis of the coding schedules he used were developed. In this way Mintzberg 'grounded' his structured observation on data collected in an initial period of participant observation. Even today, in person structured observation is still used to assess the way in which workers in modern workplaces carry out their tasks (Box 9.6).



Box 9.6 Focus on student research

Observing staff behaviours at a fast-food restaurant

Sangeeta worked at a fast-food restaurant for her holiday job. She had become interested in measuring service quality in her course and decided to do a preliminary study of customer interaction at this restaurant, which was part of an international franchise chain.

The franchise has restaurants all over the world and central to its marketing strategy is that the customer experience should be the same in every restaurant in every country. An important part of this is ensuring that all customer-facing staff observe the same behavioural standards in every restaurant. This is achieved by defining precise standards of behaviour that customers should experience in every transaction undertaken. These standards are used in training staff and subsequent assessment of their performance. Reproduced below is part of the section of the standards schedule concerned with dealing with the customer. (There are also sections that deal with the behaviours needed to prepare for work, e.g. till readiness and general issues, e.g. hygiene.)

The standards document is a coding schedule used by trainers to evaluate the degree to which their training is effective with individual employees. It is also used by managers to assess their employees' performance. Sangeeta was very impressed with the level of precision contained in this schedule and wondered whether, subject to her being granted access, it could form the basis of her research project.

Section 2: Delighting the customer

Staff member:		
Behaviour	**Observed ✓**	**Comments:**
Smiles and makes eye contact with customer		
Greets customer in friendly manner		
Gives customer undivided attention throughout transaction		
Suggests extra items not ordered by customer		
Explains reasons for any delays and indicates likely duration		

Staff member:		
Behaviour	**Observed ✓**	**Comments:**
Double folds bag containing items neatly with logo facing customer		
Price of order stated, and customer offered choice of card or cash payment		
(For card payment) Customer offered POS terminal. Completes payment and presents receipt		
(For cash payment) Money notes laid across till drawer until change given. Amount of change stated clearly, given and then presents receipt		
Customer thanked for transaction, hope expressed meal will be enjoyed, and invitation to return to restaurant given		

Observer roles

Structured observation requires adopting a passive or detached observational role, namely observer as participant, complete observer or non-participant observer (Figure 9.3, Section 9.2). If you did take an active part, you would interact with people whose behaviour, interactions or activities you were also trying to categorise; your interventions affecting, or contaminating, what you observe. You would therefore not be able to conduct structured observation in the role of collaborative observer, participant-as-observer or complete participant.

Where you commence your observational research using an active participant role and then decide that you also wish to undertake some structured observations, you will need to switch to a passive or detached role. Here you may wish to video or audio record the observation. This has the advantage of being able to replay and observe these recordings and observe as many times as you wish. Using video and audio recordings made originally for some purpose other than your research as documentary secondary data is discussed in Section 8.2.

Settings

Structured observation can take place in naturalistic, controlled, and virtual settings (Section 9.2). For example, you might observe several small business owners by work-shadowing (following) each over a number of days and recording their work activities using a coding schedule. Alternatively, you could set up a laboratory-based experiment to observe how entrepreneurs make decisions and record this activity using a coding schedule. Structured observation can also be conducted in a virtual setting, using Internet-mediated observation (Section 9.5) and, as we have also noted, in a detached setting by the non-participant observer. However, in each of these settings there is likely to be a limit to the number of informants whose behaviours, interactions or activity a single observer may reliably observe at any one time.

Data collection

Data collection in structured observation will involve you using a **coding schedule**. This comprises a list of pre-determined mutually exclusive labels and categories that

characterise those behaviours, interactions in which you are interested, allowing data to be collected systematically (Box 9.7).

Using coding schedules to collect data

Comparison of the coding schedules in Boxes 9.6 and 9.7 shows how their purpose can vary. The schedule in Box 9.6 records whether a category of behaviour has occurred. It forms a checklist of numerous items that need to be ticked as having been observed and comments added where necessary. In contrast, Box 9.7 focuses on a smaller number of more general categories to record the frequencies of each.

Further variations of coding schedules are possible: For example, behaviours, interactions or events may be recorded as a sequence rather than as frequencies. They may also be recorded by time intervals, such as recording behaviours or interactions at the beginning, middle and end of a meeting. You may also be interested to observe the occurrence of particular behaviours: For example, if you were conducting the research project described in Box 9.7, you might focus on recording behaviours that follow from cases of disagreement; waiting for disagreement to occur and coding the following sequence of behaviour. Structured observation provides you with a variety of options to collect data depending on your research question and objectives.



Box 9.7 Focus on student research

Observing the effectiveness of team meetings

Adam undertook a project examining the effectiveness of team meetings in his employing organisation. As part of this, he planned to undertake structured observation of three team meetings in different parts of the organisation. He developed a coding schedule of categories and codes for his structured observation that included the following extract.

Adam produced a separate observation sheet from the coding schedule to record the frequencies of these behaviours at each team meeting he observed. He attended the equivalent meeting held by three different teams and produced a summary sheet of his structured observations from these meetings.

He arranged to conduct a semi-structured interview with each team leader and with a sample of the members from each team. He also undertook a theoretical review of the literature to help his analysis and interpretation of these data.

Category	Definition	Observable action	Code
Providing Information	Provision of facts or information to others	***Team Leader provides information*** to team members ***Team member provides information*** to others	**TLPI** **TMPI**
Seeking Information	Seeking facts or clarification of information from another person	***Team Leader seeks information*** from team members ***Team member seeks information*** from Team Leader	**TLSI** **TMSI**
Checking others understand	Seeking to establish whether earlier facts or information has been understood by others	***Team Leader checks understanding*** of team members ***Team member checks understanding*** of others	**TLCU** **TMCU**

Category	Definition	Observable action	Code
Offering clarification	Offer of clarification of earlier information to others	***Team Leader offers clarification*** to team members ***Team member offers clarification*** to others	**TLOC** **TMOC**
Giving viewpoint	Expression of opinions on facts and information provided or on a point of discussion	***Team Leader gives viewpoint*** to team members ***Team member gives viewpoint*** to others	**TLGV** **TMGV**
Summarising	Sum up or go over the main points of earlier information or a recent discussion	***Team Leader summarises information*** for team members ***Team member summarises information*** for others	**TLSUM** **TMSUM**

Meeting	Summary of structured observations from team meetings											
	Providing information		**Seeking information**		**Checking Others understand**		**Offering clarification**		**Giving viewpoint**		**Summarising**	
	TLPI	**TMPI**	**TLSI**	**TMSI**	**TLCU**	**TMCU**	**TLOC**	**TMOC**	**TLGV**	**TMGV**	**TLSUM**	**TMSUM**
1	15	2	5	4	4	1	5	0	7	1	5	0
2	11	4	3	7	6	1	6	2	4	5	7	3
3	7	6	4	6	4	4	3	4	3	8	2	4
TOTALS	33	12	12	17	14	6	14	6	14	14	14	7

Developing the coding schedule to record data

A key decision you will need to make before undertaking structured observation is whether to use an existing coding schedule or to design your own. Using an existing coding schedule is dependent upon finding one which is suitable, at least in part, to answer your research question and address your objectives. It does, however, save you the need to develop a completely new coding schedule and, as it will be tried and tested, can help to make your results and conclusions more reliable and valid, also allowing comparison with those from its earlier use.

For many business and management research projects using structured observation, you will not find an existing coding schedule that is suitable and available for you to use. If you do find a potentially useful existing coding schedule, you will need to evaluate its suitability for your research question and objectives. It is unlikely that this coding schedule was designed to address precisely the same research question and objectives; but even if it does, you will still need to evaluate if it addresses all the behaviours, interactions, or events in which you are interested. You will also need to make sure there are no concerns about reliability and validity. Box 9.8 offers a checklist for evaluating or developing your coding schedule.



Box 9.8 Checklist

To evaluate or develop a coding schedule

- ✔ Does the coding schedule collect data that will allow you to answer your research question and address your objectives?
- ✔ Does the coding schedule cover all of the specific behaviours, interactions or events in which you are interested and exclude others outside the scope of your research?
- ✔ Are these categories of behaviour, interaction or events defined clearly and written down, observable in action and mutually exclusive?
- ✔ Are the categories in the coding schedule sufficiently flexible to be used across all your research settings?
- ✔ Are the actual codes noted on the observation sheet (Box 9.7) simple to understand and undemanding to apply, so you will not need to memorise or check their meanings?

Where existing coding schedules are unsuitable for your purposes, or where none exist, you will need to develop your own. There are a number of sources that can help you to devise categories, definitions and codes for this. Your research question and objectives will provide focus as the schedule needs to code data to answer this question and address your research objectives. Existing research and theories reported in the literature will also help. In addition, if your research design is sequential, you may initially have undertaken some in-depth or semi-structured interviews, or a period of participant observation, to determine categories for structured observation and develop a coding schedule. Your own experience as a participant or inside researcher, or work placement student, can also help you to develop categories for structured observation and a coding schedule. Always evaluate your own coding schedule (Box 9.8) and pilot test it before using it to collect data (Section 11.7).

Even where existing coding schedules are inappropriate, you may be to incorporate part or parts of an existing schedule into your own schedule, or modify the design of one used for a different purpose. As you would expect, we recommend that you also use the checklist in Box 9.8 to ensure that your schedule is as valid and reliable as possible and to pilot test it.

Data quality issues

The main issues for structured observation relate to aspects of reliability (Section 5.8): observer error, informant error, time error and observer effects. We discussed observer error and observer effects in Section 9.3. Now we consider informant error and time error.

Informant error

Informant error refers to an atypical informant response that occurs when they are observed in a situation that is inconsistent with their normal behaviour and may cause your data to be unreliable. You may be observing the normal output of sales administrators as measured by the number of orders they process in a day. Informant error may occur if these administrators are in a work group that is short-staffed owing to illness. This may result in them spending more time answering telephones and less time processing orders, as there were fewer people available to handle telephone calls. The message here is clear: select your sample of informants using the sampling technique that best enables you to answer your research question and meet your objectives (Chapter 7).

Time error

Closely related to the issue of informant error is that of **time error**. This occurs when the time of day when the observation is conducted is atypical and provides data that are untypical of the total time period. For example, the number of calls taken in a call centre is often higher in the hours surrounding lunchtime in comparison to any other period. Conversely, it may be lower in the hours just before the telephone lines close than in any other period. It would therefore be necessary to conduct periods of observation at intervals throughout the day to help ensure a reliable set of data. Where used and access granted, electronic monitoring would allow you to use already collected data to establish which periods were busiest as well as other aspects such as average call times, the number of calls taken by particular staff members and how many callers were waiting to be answered at particular times of the day!

These data quality issues along with other disadvantages and advantages of structured observation are summarised in Table 9.5.

Table 9.5 Advantages and disadvantages of structured observation

Advantages	Disadvantages
• Can be used by anyone after suitable training in the use of the coding schedule. Tasks can therefore be delegated and carried out simultaneously in different locations, allowing comparison between locations • Should yield reliable results by virtue of its replicability. The easier the coding schedule is to use and understand, the more reliable the results will be • Capable of more than simply observing the frequency of events. Possible to record the relationship between events. For example, does a visit to a website lead to the exploration of related pages and video recordings; does this lead to a decision to purchase? • Allows the collection of data at the time they occur in their natural setting. Therefore, no need to depend on 'second-hand' accounts of phenomena from informants who put their own interpretation on events • Collects data that most informants would ignore because, to them, these are too mundane or irrelevant	• Unless nonparticipant observation is used, observer must co-located with the phenomena under study • Behaviours, interactions and events being observed may occur simultaneously or in complex ways, making coding difficult and potentially unreliable • While structured observation is helpful in recording incidence of behaviours, interactions or events, these are limited to overt actions or surface indicators and may be inadequate to explore impact or effectiveness, leaving observer to make inferences • Analysis needs to look for patterns of behaviours, interactions or events to explain data collected and understand their impact in the observed situation. Such analysis may show how behaviours are linked, which are effective or ineffective and how they affect outcomes • Not recognising environmental variability within a research setting may invalidate conclusions drawn from structured observation. Behaviours, interactions and events likely to be shaped by the environment and ignoring this variable is likely to cast doubt on the conclusions. Conversely, controlling for or taking environmental variables into account is likely to enhance validity of conclusions drawn • Data may be time-consuming (and expensive) to collect, meaning number of observations can be limited

9.5 Internet-mediated observation

In Chapter 8.2 we discussed the use of existing documentary data such as text, images, audio-visual and audio recordings for secondary observation, emphasising these data were, in the main, accessed via the Internet. The Internet also allows real-time access to social interactions taking place in social networks, Internet forums and virtual worlds. In this section we consider the nature of Internet-mediated observation and of this observational setting. We also consider data-collection procedures and issues associated with recording, before looking at data quality issues that may arise from using Internet-mediated observation.

Nature of Internet-mediated observation

Internet-mediated observation is an ethnographic approach using participant observation adapting traditional observation to use text, digital and virtual means. This has led to a variety of terms such as netnography, online ethnography, virtual ethnography, webethnography and mobile ethnography. **Netnography** is an ethnographic approach to studying people in online or virtual communities. Many online communities organise themselves around a shared interest or activity; for example, a lifestyle or set of beliefs (Box 9.9), a particular brand, product, service, business focus or occupation. These online communities operate through bulletin boards, email lists, Internet forums, linked web pages, social networks, and virtual worlds. Other online communities organise themselves around interpersonal relationships, operating principally though social networking sites such as Facebook, Twitter and LinkedIn. These online communities produce large amounts of qualitative material, in the form of text and audio-visual material from the social interactions that occur between members over time.

The purpose of netnography is to 'understand the cultural experiences that are encompassed and are reflected within the traces, practices, networks and systems of social media' (Kozinets 2020: 14). It broadly follows the approach to participant observation that we outlined in Section 9.3 and is termed **Internet-mediated participant observation**. Such observation is likely to be exploratory as it commences and to become explanatory as it progresses (Section 5.3). It is also likely to work though the phases of participant observation that we outlined earlier, emphasising descriptive observation in its early phase, developing more focused observation in its middle phase, and highlighting selective observation in its final phase (Section 9.3, Figure 9.3).

However, it is also important to recognise that online observation may commence as, and focus on, structured observation. Such **Internet-mediated structured observation** may use quantitative as well as qualitative data and analysis. The very nature of the Internet means that huge amounts of quantitative data are recorded every day from the billions of clicks and taps that we all collectively make on all our Internet connected devices. The vast majority of these potential data are not accessible and, will remain unanalysed until access is granted and they are subjected to advanced big data analytical techniques. However, some of these data will become available to researchers to researchers as secondary data (Section 8.2) and, in addition the huge amount of qualitative Internet data available, may be analysed in part using quantitative techniques such as those discussed in Chapter 12.

Observer roles

Internet-mediated observation affects the nature of the researcher's participation. Depending on accessibility to an online community, you may be able to enter the website as a guest without revealing your identity or without participating other than reading or

viewing available material (Box 9.9). This is a form of lurking (Section 6.56) and, similar to the role of 'complete observer'. You may become a member of an online community but remain 'silent' as a non-participant, only being interested in reading and observing what others have posted (although your presence may be detectable to others when online). This form of lurking is still similar to the 'complete observer' role as you are not participating and, while your presence may be detectable, your purpose is not revealed. The alternative to lurking is to participate by adopting a different participant observation role in the online community.

Paechter (2013) discusses the relative merits of non-participation and participation when collecting data from an online community. She asks whether lurking is sufficient to collect data or whether more active participation is necessary to achieve a richer understanding. Full and open participation, as either a collaborative observer or participant-as-observer role, potentially has a number of advantages. It should help to avoid missing important aspects of the interactions between members of the community and reduce misunderstanding. Full and open participation allows you to check your interpretations (Section 5.8) and explore these with members. Yet, while non-participation can potentially provide access to data, acting covertly and practising deception is fraught with ethical issues such as uninformed consent and privacy (Section 6.6) and result in you being asked to leave when revealing your activity and requesting access to undertake research overtly (Paechter 2013).



Box 9.9 Focus on management research

Using observation to explore how networked activists self-organise by creating a participating architecture

In an article published in the *Administrative Science Quarterly,* Massa and O'Mahony (2021) explore how networked activists from the Anonymous collective organised protest actions to disrupt government entities and financial institutions while continuing to integrate newcomers and coordinate their activities. They argue their research in this extreme setting enables a better understand how the challenges of self-organisation in more general open networks can be overcome.

The authors first identified digital forums where activists from the Anonymous collective were active, developing clear criteria for selecting sites such as websites and chatrooms that would be used for observation. The sites chosen are listed as an appendix in their paper.

Over a three-year period, Massa spent at least 10 hours a week observing interactions online; researching content such as videos, memes and jargon, and gathering other relevant data. During this time, he 'lurked', covertly observing actions without interfering. Field data collected comprised two types: First 1,157 real-time digital communications comprising discussion threads and chat logs, each containing at least 10 comments and, 167 images; second, field observations of four street protest actions. These were combined with archival data of Anonymous communications, memes and visual representations.

Data were analysed using an iterative grounded approach. This focussed initially on the puzzle regarding how new protest actions continued to be organised despite challenges with coordinating and integrating new participants in the face of increasing chaos and disorder. This, they argued was due to the creation of a participation architecture in which the channels visible to new participants were limited (controlled) helping to direct attention and effort.

Settings

Most Internet-mediated observations involve a form of participant observation transposed to an online setting, allowing you to participate in and observe social interactions that naturalistically happen online. To do this you need to gain access to an online community usually communicating with its members in real-time, using synchronous text or perhaps a live video link, and in delayed time, through asynchronous text. Alternatively, you might immerse yourself fully in the community (Box 9.9). You may also wish to investigate data in the form of text, video, audio and static visual materials that have been archived online (Section 8.2).

Access to Internet-mediated structured observation can be difficult to achieve for both practical and data protection reasons (Section 6.6), unless you are able to gain informed consent from each member of your informant group or negotiate access to re-use a data set collected by an organisation. In the latter case this indicates that you would be using secondary online data (Section 8.2).

Data collection procedures and recording

Online ethnography shares many attributes of traditional ethnography, although its use affects the way data are collected. Participant observation, informal discussions and interviews are important means to collect data in traditional ethnography (Section 9.3). In online ethnography, the nature of observation is altered and the scope for informal discussions and interviews depends on your engagement with the online community. In many online communities, members communicate principally using synchronous and asynchronous text. These can be considered 'analogous to written speech', to which you, as researcher 'listens in' (Paechter 2013: 73) in a similar way to the traditional participant observer. Such online text provides a complete record of observed exchanges compared to the notes made from observing oral exchanges. However, while a traditional observer can observe body language, facial expressions and tone of voice to assist interpretation of interactions, as an online researcher you will only have nuances in the text, associated emojis and Gifs, and perhaps audio-visual material to aid interpretation. Such online observation can take place in real time (Box 9.9).

Kozinets (2020) provides advice about searching for online sites; and selecting sufficient data to enable you research question to be answered and objectives met. These comprise the site(s)':

- *relevance* to your research question and objectives;
- *activity* in terms of recency and the regularity of flow of information (although this may not be important for historical or archival studies);
- *interactivity* with regard to two-way communication such as posts, comments and replies;
- *diversity* in the variety of perspectives represented;
- *richness* in the detail, description, emotion and depth of data included.

Once potential sites have been identified their content needs to be assessed for relevance, activity (for contemporary studies), interactivity, diversity in perspectives and richness of detail. In addition, you should be open to data that reveal the unexpected, the anomalous and offer scope to explore these and develop insights.

Kozinets (2020) identifies three types of online netnographic data that can be used in observation. The first is investigative data that is observed and recorded from the online site. Investigative observational data created by members of the online community without any interaction with or intervention by the researcher. These are likely to be in the form

of text but may include video, or purely visual or audio material (Section 9.6) and, where they are archived, can be considered secondary observational data where you take on the role of non-participant observer. The second type is interactive data, which is 'co-produced or elicited' (Kozinets 2020: 245) from the researcher's social interactions in the online community and with its members. Here your observational role will depend upon whether you participate in the community and reveal your identity. The third type is immersive data, produced by the researcher immersing themself fully in online encounters. It there involves the researcher in seeking deep data, recording these in detail, evaluating the theoretical viewpoints they impress upon these data and, reflecting as they immerse themselves. When collecting immersive data, your role is likely to be either that of participant as observer, complete participant or, perhaps, collaborative observer dependent upon whether you reveal your researcher identity and actively involve the informants in the research.

Data quality issues

Whichever of these three forms of observational data you collect, it is crucial that you do so ethically and abide by your university's code of ethics. This will require you to consider thoroughly potential ethical dilemmas, being especially careful when collecting immersive data (Section 6.7).

When adopting Internet-mediated observation, issues discussed earlier relating to data collected using participant observation and structured observation will be relevant (Sections 9.3 and 9.4). These include observer error, observer drift and observer bias, and may include observer effects where you collect data overtly. We now consider further issues related explicitly to Internet-mediated observation.

The nature of (online) communities and the role of the researcher

Online ethnography or netnography has necessitated a re-evaluation of the concepts of culture and community for the online environment (Kozinets, 2020). Cultural identity varies between individuals and across time and is often difficult to categorise in a simple way. Similarly, 'communities' are not simply composed of homogenous, like-minded beings. A shared interest or activity and/or some level of social attachment should not be equated with the idea of identically minded people communicating with one another in an uncritical way. If studying the concepts of culture and community is problematic in traditional ethnographic settings these are likely to be even more difficult to study in virtual, online settings.

Recognising these constructs are not solid, stable and straightforward is crucial to how you undertake your role as an online ethnographic researcher. Your participation and extent of collaboration with informants online are likely to impact upon your ability to gain different perspectives and multiple interpretations, as well as to achieve some cultural understanding of those engaged in social interactions. Such understandings and insight are likely to be a function of careful and repetitious participant observation (Section 9.3). For some research questions, studying online communities and culture is likely to require immersion and thoughtful reflection to achieve depth of understanding, to avoid superficiality and uncritical simplicity.

The scope of online communities

In a traditional ethnographic study, you should be able to observe all of the interactions in the setting to which you have gained access. Where access is denied to some aspect of the setting, such as being granted access to observe a workgroup but not to observe confidential meetings between the managers of that group, you will be aware of the

limitations placed on your observation. If 'observing' an online community, you therefore need to determine whether the online exchanges you observe represent all or nearly all of the interactions between its members; or whether those members also interact 'offline', through other forums such as physical meetings or conferences, or perhaps even through other, related Internet forums to discuss the same shared interest.

The nature of data

Researchers (Prior and Miller 2012) have noted the nature of Internet-mediated observation data can affect its representativeness in comparison to traditionally derived observation data. They highlight that, while some members of an online community consistently post messages over time, others may be active for a period but then become less active or inactive. Others will only lurk, reading the posts of others and perhaps making the occasional post. Such patterns may not be consistent with the 'offline' behaviours of these members. Online community members can also adopt online pseudonyms or personas, which can protect their identity (Box 9.9) but may also be used to project views that they would not voice in face-to-face communication. These characteristics can cast doubt on the representativeness of Internet-mediated observation data in two ways:

- views of more active members may not represent the opinions of the whole group;
- views expressed may not represent those that are held more widely in a population where this also includes people who are not members of an online community.

Interactions between community members rely mainly on written text, meaning their language may not adequately represent the complexity of the issue being discussed or lack contextual details that facilitate fuller evaluation. However, a range of posts by different members or contributors can produce a variety of perspectives that permit an adequate contextualisation and evaluation.

Where you evaluate your Internet-mediated observation you need to consider the range of contributors to each discussion, any possible impact from their use of online pseudonyms, and the nature of language used, and contextualisation included in discussion. Internet-mediated observation can produce rich and valuable data and represent a range of views on a pertinent topic, or it may produce data of variable quality.

Quality of research design

The quality of your research design is likely to affect the reliability/dependability of your data and the internal validity/credibility and generalisability/transferability of your findings (Section 5.8). Data that represents only the views of some online community members may be unreliable or undependable where 'observing' the views of other members may produce data with a different emphasis. Using data that does not adequately represent online community members' views, or their behaviours in real life, in relation to your research question will affect the internal validity/credibility and generalisability/transferability of the research. You therefore need to evaluate carefully the potential suitability of likely observational data in the context of your research project.

9.6 Recording video

Audio-visual recordings offer an alternative way to capture and store more detailed rich observational data on the minutiae of complex organisational affairs as part of participant observation, structured observation or Internet-mediated observation. Increasingly

associated software and cloud-based services offer automatic transcription of audio data, although voice recognition is still not perfect. Use of these can also support informant participation in collection and analysis of data.

Participatory video involves providing informants with video cameras, or their using smartphones or other camera-equipped devices to record their experiences, thoughts or feelings and giving them freedom to choose what to record. This approach can involve informants video recording or as a group activity within a community. A series of recordings made overtime by an informant is often referred to as a **video diary** and the informant a **video diarist** (Whiting et al. 2018) (Section 10.12).

Observation using audio-visual recordings (or visual images) is often used in combination with other data collection procedures such as interviews (Chapter 10), the purpose depending upon the research question and objectives. For example, video diaries may be used in market research to observe consumers' experiences and understand their perspectives of a brand or product defined by the commissioning organisation. In critical ethnography and Critical Management Studies (Sections 5.5 and 4.3), where the intended purpose is to bring about change or to informants' perspectives normally hidden from those in power, the focus will be much broader, and the control given to participating informants. This is likely to involve informants collaborating throughout the research process, from design, through data collection, to analysis and interpretation (Section 13.12).

Video-recorded observation creates a permanent record in real time, overcoming the transient nature of observation. By replaying the recording, you can reflect on the behaviours shown, informants' interactions and the impact of their environment, incorporating these into your coding where appropriate. The ability to repeatedly pause, slow, rewind, zoom, copy and fast forward the recording means you are less likely to miss important data when coding and analysing these data. Use of a body camera, as opposed to a smartphone or other camera-equipped device, can capture the precise details and cognitions, helping to differentiate between perceptions and recollections of reality and encourage informants to express their thoughts and feelings about the processes being portrayed.

Researcher-created video

Providing you have obtained fully informed consent, you can collect observational data using video. This will involve you using a video camera, smartphone, body-worn camera or other camera equipped device to record informants' activities. Although concealed body-worn cameras are less obtrusive than other types, their use raises serious ethical and data protection concerns where any attempt is made to use one of these covertly, and ethical approval is extremely unlikely to be granted. For most research projects, only observer roles in which the researcher's purpose is revealed to informants and where informed consent to be videoed is given are likely to be acceptable.

Video meeting platforms can also be used to create observational video (Box 9.10). Such recordings are normally initiated by the meeting organiser and, providing informants leave their webcams switched, can audio-visually record all those taking part. Although such services offer the advantage of automatic transcription, it will still be necessary to clean these data and integrate with the video recording.

Informant-created video

You can ask informants to record self-directed videos, including video diaries related to the focus of your research, providing a clear instruction such as 'describe your work surroundings' and, in effect, giving the informant a role such as documentary film maker. Such informant-created videos have the benefit over, for example written diaries, of unselectively recording additional visual data such as bodily expressions, informants' practices, and their

Box 9.10
Focus on student research

Observing a hybrid meeting using video

Linda was interested in studying how employees in her organisation interacted during hybrid meetings. In particular, she was interested in team members' bodily expressions, such as gestures used in sensemaking processes, and whether these differed between those attending face-to-face and those attending virtually using a cloud-based videoconferencing service. She had obtained agreement for her research from her organisation and all team members had agreed for the meeting to be video recorded. She knew that that the members in the room would be connected to those who were attending remotely using an all-in-one 360-degree camera, mic and speaker placed on the meeting table. She tested this and found it zoomed in automatically on whoever was speaking. She then tested the video conferencing service and found it could record both video and audio of whomever was speaking as well as all other participants joining remotely. However, because the 360-degree camera zoomed in automatically, only the person was speaking in the meeting room was video recorded.

Linda decided to place an additional video camera in the meeting room to record the bodily expressions of those attending face-to-face. However, placing the camera in most places would mean that only backs of some people were visible in the picture frame.



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Eventually, she decided the best place was above the large monitor, which would display all those attending the meeting virtually. This meant the faces of all those in the room would be in the frame and recorded, if they were looking at the large monitor.



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identities; enlivening and enriching accounts (Zundel et al. 2018). They are particularly useful where considerable distances exist between researcher and informants, making face-to-face observation difficult or impossible to undertake. They may also be useful where the observational site is transient, in the sense that the informant being observed needs to be mobile, such as a shopping trip or delivery work. Upon completion informants can either upload their video recordings to a secure site such as a private YouTube channel or send them securely to the researcher using a file transfer app. Box 9.11 provides a checklist for using self-directed video diaries.

Box 9.11 Checklist

Using informant created video (including diaries) for observation

Have you:

- ✔ Built trusting relationships with informants?
- ✔ Ensured informants have given informed consent?
- ✔ Considered how you will deal with sensitive and private information?
- ✔ Provided informants with focussed instructions regarding what to record, for example 'document your work surroundings'?
- ✔ Provided practical details about how to transfer recordings to you?
- ✔ Ensured recordings can be stored safely and securely?
- ✔ Considered the possibility of using in combination with other methods to allow follow up and clarification?
- ✔ For video-diary observations, considered the possibility of combination with other methods that capture the sequential structure of events and allow you follow up and clarify aspects or redirect the informant's attention?

Source: Developed from Zundel et al. 2018

Data quality issues

Using video to record observations presents both technical and practical challenges. While it is relatively easy to use a camera, doing so begins to limit what will be recorded for future analysis. Framing the picture has implications for the actual data recorded (Box 9.10). Recording good-quality sound may be difficult depending on background noise and the equipment being used (Knoblauch et al. 2018). Crucially, before commencing recording, it is important to ensure batteries are fully charged, there is sufficient data storage space, and the time and date have been set correctly (Knoblauch et al. 2018).

Practical difficulties in using audio-visual recording equipment are greater than simply being physically present in a research setting, watching what is occurring and making handwritten notes. One of our colleagues who used video commented that their focus was on using the recording equipment and capturing the event rather than trying to make sense of it as it occurred. Using video may also be problematic where the quality of the recording is poor in some way or where a technical issue occurs during recording. Using more than one researcher when using video to record observational data may help to overcome some of these issues.

Recording an observation using video is much more intrusive than simply watching and making notes. This raises ethical issues (Section 6.6), including respect for others, avoidance of harm, informed consent, privacy, confidentiality, use of the data and data management. Negotiating these with potential informants may be problematic given the intrusive nature of video. Even where access can be negotiated and agreed, it will probably be necessary for you to undertake several observation sessions in the same research setting with the same informants before they become familiar with being observed (habituated – Sections 6.7 and 9.3) and you begin to collect reliable and valid data. Informants may also be concerned about the way in which the recording may be edited and the use to be made of this and other, raw data. Given the intrusive nature of video-recording observation, it is likely that you will need to spend time in the research setting to understand its dynamics and also record several observation sessions to develop trust and for informants to behave normally. While this is likely to be time well spent, it will be intensive and very time-consuming.

Where you ask informants to keep video diaries, data quality will be dependent partly on the willingness and competence of informants to undertake this task. While informants' video diaries provide a first-person perspective and encourage expression of informants' thoughts and feelings, a major disadvantage is the loss of external physical clues. When the informant is holding the recording device, or when a body-worn camera is used, you will see what the informant sees, hear everything they may say and be able to watch much of what they do. However, you will not be able to see what the informant looks like, and the recording will not capture the informants' facial expressions or body language while they are engaging in the activity. It may also not record the surrounding, situational context.

9.7 Creating static images

As we noted in the opening vignette, digital images or photographs can be used to capture observations, being one of the most widely used forms of static observational data. Others include drawings such as sketches and schematic doodles. Static images are also used in research interviews that incorporate a technique known as visual elicitation (Section 10.11). Creating images when observing is also a useful tool to freeze frame a process or offer representations of a workplace conveying hidden and alternative knowledges (Warren 2018).

Researcher created static images

Researchers may create various types of static image. You may be able to take digital images or photographs to collect observational data with the fully informed and expressly given consent of your informants. This may involve you using a digital camera, smartphone or other camera equipped device to take images. You may also create other types of static image. For example, you may find it helpful to create a map or drawing of an observational setting; or perhaps to create a chart or diagram showing the organisational relationships between those being observed in such a setting.

Informant created static images

You may invite informants to create digital images related to your research question or some aspect of it. **Participant photography** involves providing informants with digital cameras or asking them to use their smartphones or other camera equipped devices to record their experiences or perspectives, giving them freedom to choose the subject of (and compose) each image. It is considered less intrusive than traditional ethnography (Warren 2018). When combined with informant discussion of their photographs it is termed **photovoice** and can empower informants, their taking photographs to represent their experiences or perspectives allowing them to be active participants in the research (Eberle 2018, Box 9.12). Photovoice can give a voice to the oppressed, poor, colonised and marginalised, especially where combined with their narrations elicited by their own photographs.

Informant created static images may be useful where considerable distance exists between researcher and informants, making face-to-face observation difficult or impossible to undertake. Participant photography may also be useful where an observational setting covers a large area and informants need to move around within it. For example, an observational setting may be a company campus, corporate headquarters, distribution centre, factory or warehouse. Participant photography would help informants capture their experiences of interacting with others in such a setting.

Box 9.12 Focus on student research

Using participant created static images

Jaimie was interested in the extent 'Working Holiday' students' images of tourist destinations related to those in online official tourist information, such as that in brochures, and whether these altered over the time of their visit. She decided to collect data from people who had obtained working holiday visas and were planning on going to Canada. Having received ethical clearance, Jaimie contacted members of the Canadian working holiday Facebook group who would be working in Canada. Jaimie asked the 14 people who agreed to participate to email her up to 10 photographs they had taken during their first week in Canada at their working holiday destination and provide a brief commentary about each photograph explaining its meaning to them. In their first sets of photographs the majority of informants included at least one photograph of the Toronto skyline, a typical comment being: 'This photo of the Toronto skyline was taken from Toronto Island, on my first day getting to know the city. It shows the modern high-rise buildings, CN Tower and lakeside location from a rural island and was only 10 minutes' ferry ride.'

Two months later Jaimie asked each of her participants to email up to 10 further photographs they had taken in the past week while in Canada on a working holiday. These photos were more varied. On informant commented on their photograph of a downtown neighbourhood: 'The Kensington Market neighbourhood is bohemian and full of vibrant cafes and a real diversity of people. It is my favourite part of downtown Toronto.' Jaimie was the able to undertake a comparative analysis between the content of photographs taken at the two different times and those that appeared in official tourist information.



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You may also ask informants to create other types of static image. These include informants' freehand drawings that form visual representations of their perceptions or experiences about some aspect of their work (Box 10.20). These types of images tap into emotional states and may potentially create powerful images, raising ethical concerns that would need to be very carefully considered before deciding to use this technique. Any decision to adopt this approach is likely to include controls to avoid the risk of embarrassment and harm arising from its use. You may also ask informants to create diagrams or charts that help to provide data in relation to observational research.

Static images, whether created by you or informants, tend to be used to generate written or numerical data. This occurs in two ways:

- Images are analysed 'directly' using words or numbers, where the visual is transformed into written or numerical representations (Section 13.12).
- Images are used as an intermediary means to generate written data, such as using a visual image as the basis for a discussion with an informant, to explore aspects of or objects in the image, to generate a verbal account and record this as written data (Section 10.11).

Static images can also be included in your research report as visual representations. In this way, there is scope to use static images as visual data in parallel with or as a complement to visually generated written or numerical data. By recording observations as visual data, we may record something more than just reducing these to written or numerical data. 'Something more' in this context means being able to recognise what would otherwise be lost or just taken for granted if observations are only recorded as written or numerical data (Rose 2014). Static images potentially have the capacity to extend the ways in which we understand our data and conduct analysis, as well as generate new knowledge. By their nature, these images are likely to be rich data sources, providing insights that written or numerical data alone are unlikely to produce. Even used as a complementary source, such visual data may help to validate or triangulate findings from written or numerical data.

Using static images can appeal to groups who are normally reluctant to engage in research projects. One such group of potential informants are those who prefer to use, or excel at using, their visual skills rather than engaging in talking (Ozanne et al. 2013). More generally, by asking informants to create images, you may generate larger numbers of potential informants. Creation of static images by informants implies at least some level of collaboration in the research project, which can help to produce well-grounded data. It may also be associated with other forms of researcher-informant collaboration that help to reduce threats to reliability (Section 5.8).

Data quality issues

As when using video, the way you frame a digital image on your smartphone screen has implications for the collection of data. While it is relatively easy to take a digital photograph, how you frame it begins to limit what will be recorded for future analysis. In creating a digital image, you or the informant are selecting what may be seen in the setting. It requires you or the informant to draw on a variety of unconscious knowledge about how to best frame and compose photographs. Invariably, photographs contain a lot of detail providing an inventory of scenes being observed as well as a holistic impression (Warren 2018). Yet, Warren (2018) argues that, as photographs are socially constructed artefacts, they should not be regarded as truth or evidence of a reality that is objectively out there. Understanding the reasons why an informant took a particular image can therefore be valuable in terms of producing wider data (Box 9.12), but your analysis and interpretation will depend on and be limited by the scope of the image. Taking further images, a panoramic view, or zooming out to achieve a wider angle, may overcome this limitation. An informant may also take digital images that represent an issue or act as a metaphor, requiring you to explore the meaning of these images with them. An example here might be a photograph of a desk or table piled with papers to symbolise some meaning, which needs to be decoded in discussion.

Static images can show informants in a particular setting, revealing what they are doing and with whom they are interacting, allowing them to be identified. As with video observation, gaining informants' informed consent is vital, but issues may still remain.

Box 9.13 Checklist

To help avoid or minimise the risk of embarrassment or harm to those consenting to taking images during observation

Have you:

- ✔ Ensured those who taking images are aware of potential ethical concerns?
- ✔ Explained to informants how images will be used, controlled, and stored and who owns them as part of a formal consent process?
- ✔ Avoided taking images that threaten an informant's privacy or that exceed the consent given?
- ✔ Allowed informants to see images relating to themselves and granted them the right to edit or destroy those that pose a risk?
- ✔ Allowing informants to be involved in deciding how images will be selected and edited for any type of display or publication?
- ✔ Considered blurring informants faces or not including such images in your research report?

Sources: Developed from Ozanne et al. 2013; Warren 2018.

For example, taking photographs in some settings will require every member of a group or team to consent to the use of this approach. It is possible group-effect will initially encourage consent to be given by all members of the group or team, despite some feeling uncomfortable. This has implications for the way in which informed consent is negotiated as well as for data quality issues. It is therefore worth considering avoiding faces in images or subsequently editing images to blur faces and prevent informants from being identified if images are subsequently to be published in your research report. Box 9.13 provides a checklist to help avoid embarrassment or harm to those who consent to visual images being taken.

9.8 Audio recording

Smartphones, and small inexpensive digital audio recorders that can be clipped onto a belt or placed in a pocket, have made it straightforward technically to audio-record observations in 'out-and-about' or 'on-the-move' situations. This is especially suited to observation research where a detailed record is required of the way language is used in social interactions. Depending on the nature of the research objectives and intended analysis, audio can be recorded continuously, or voice activated; where recording of background sounds such as in a shopping centre or factory, and periods of silence and pauses are not considered relevant data. Either form overcomes the need to concentrate continuously to record the details of the social interactions being observed using notes. Researcher created audio-recording also allows you to make field notes to record contextual data about the observational setting, while the audio recording captures the voices engaged in the social interaction.

An audio recording can subsequently transcribed in full, or partially, in preparation for analysis (Section 13.4). Such transcriptions may range simple verbatim transcripts, exactly reproducing the words spoken by each informant, to highly annotated accounts containing symbols inserted into a verbatim transcript to indicate interactional pauses, word cut-offs or extensions, emphases, intonation and so forth. A high-quality audio recording will facilitate this, albeit that the production of any transcript will be very demanding in terms of time and effort (Sections 10.6 and 13.4).

Audio recording also creates a permanent record, like video recording, allowing the recording to be replayed many times so you to reflect on the nature and progression of the social interaction, the voices being heard, the intonation being used, spoken emphasis, pauses in speech and the role of sound in the environment or setting. This should also enhance accuracy when coding data and permit verification of observational events. Pausing, rewinding, fast forwarding, copying and editing recordings can help you code sequences of speech. This will help you to identify who said what, to whom, when in the conversation, and with what effect or outcome, as well as allowing you to recognise critical incidents. Repeatedly listening to audio recordings may also increase your scope for reflection to encourage your depth of understanding and allow alternative explanations to be evaluated.

Researcher-created audio recordings

As a researcher you can make an audio recording of an observational setting in which you are present. However, the unobtrusive nature of some audio recorders means it is possible to record verbal interactions without those present being aware that this is happening: an action that would raise serious ethical concerns related to numerous aspects discussed in Section 6.6. Issues related to data protection may also be raised in relation to this action (Section 6.8). Ethical approval to use such an intrusive approach in a covert way is extremely unlikely to be granted. For most research projects, only observer roles in which the researcher's purpose is revealed to informants and where their informed and formally expressed consent to be audio recorded is given are likely to be acceptable. Once this has been agreed we consider it important to place the recording device or microphone so it is clearly visible, providing informants with a visual reminder that the observation is being recorded. In such situations a 'recording' light provides a fuller visual reminder (Negrón, 2012).

Informant created audio recordings

Participatory audio involves providing informants with audio recorders, or asking them to use their smartphones, to record their experiences or perspectives. While you will invariably provide informants with some direction, they will have the freedom to choose what to record. Those whom you ask to make the recordings are primary informants, while those with whom they record interactions are secondary informants. Both groups need to be considered in relation to ethical concerns, and you will need to ensure that secondary informants are also given the choice about whether to have their social interactions audio recorded. Where the recordings do take place, you will need to ensure the recording device or microphone remains a visible reminder.

Data quality issues

Although audio recording offers potential advantages over conventional observation techniques, the quality of your data will depend on the quality of the recordings you make. You will need to think carefully about the nature of the data you require and evaluate the suitability of your smartphone or digital recorder. In particular, you need to consider recording capabilities such as being able to record several voices at different distances from the device, use of an external microphone such as a small clip-on or omni-directional microphone, quality of internal microphone for multidirectional recording, portability and

ease of use of the recorder, continuous recording capability and storage capacity (Negrón 2012). Poor-quality recorded data may make the process of analysis difficult and increase the likelihood of observer error and observer bias occurring (Sections 9.3 and 9.4).

Audio recording, in comparison to the video recording, will lack visual data, but where audio data are important, especially the recording of talk, the creation of high-quality audio recordings may produce helpful or even vital data. Audio recording does not necessarily involve the complete loss of 'visual' data where the researcher also uses a field notebook to record contextual data. Used in combination with field notes, high-quality audio recording may help to reduce the likelihood of observer error and observer bias occurring (Section 9.3).

Audio recording an observation is more intrusive than simply watching and making notes. Ethical issues related to privacy, confidentiality and use of the data, amongst others, may remain in the minds of informants leading to observer effects given the intrusive nature of this means to record data. For example, informants may remain concerned about the way in which a recording might be edited and then used. You therefore need to consider the full range of ethical issues that may arise and to remain sensitive to informants' on-going concerns about these. You will also need to act ethically in relation to non-informants who are inadvertently recorded.

9.9 Summary

- Choices need to be made about how to observe. These relate to:
  - The structure and formality of the research design.
  - The researcher's involvement in in the event being observed and their location.
  - Whether the researcher's identity and purpose are revealed or remain covert.
  - The natural or contrived nature of the observational setting.
- Observational roles where the researcher takes part in the activity being observed are collaborative observer, participant observer and complete participant.
- Observational roles where the researcher only observes the activity are nonparticipant observer, complete observer and observer as participant.
- Three main forms of observation are: participant observation, structured observation and Internet-mediated observation.
- Participant observation allows the researcher to participate in or closely observe the lives and activities of those whom they are studying. It is used to attempt to get to the root of 'what is going on' in a wide range of social settings and gain intricate and rich data.
- Participant observation has high ecological validity but may be affected by observer error, observer drift, observer bias and observer effects. These issues may be minimised or overcome by observer familiarisation, interpretive rigour, informant verification, habituation and the observer using strategies to explore and validate interpretations.
- Structured observation is used to observe and record systematically the incidence of particular behaviours, interactions or events. It is characterised by a high level of predetermined structure and quantitative analysis.
- Structured observation will involve the use of a coding schedule, which is usually developed and pilot tested before use.
- Structured observation may be affected by observer error, informant error, time error and observer effects. These issues may be minimised or overcome by those strategies summarised in relation to participant observation and by designing an unambiguous coding schedule.

- Internet-mediated observation involves the collection of data from online communities, with the researcher purely observing or participating in an online community to collect data.
- Internet-mediated observation may be affected by observer error, observer drift, observer bias and observer effects. The reliability and validity of these data may also be affected by the scope of the online community and the nature of data from Internet-mediated observation.
- Video recordings, static images and audio recordings can be used in the collection of observational data.
- Researchers and informants can create video recordings, static images and audio recordings in observational research. These recordings or images can be transformed into written or numerical data although they may also be treated as visual or audio data in their own right, and used in analysis and as visual representations in the research report.
- There are potential advantages, ethical concerns and data quality issues associated with the use of video recordings, static images and audio recordings that need to be evaluated prior to data collection.

Self-check questions

Help with these questions is available at the end of the chapter.

9.1 You are a project manager responsible for the overall management of a large project to introduce your company's technology into a new hospital. Some of your team members are co-located and others work virtually. You notice in hybrid project meetings that these engineers who are working remotely tend to be far more reticent than the other team members in volunteering ideas for solving problems.

This issue has coincided with the arrival of a management student from the local university who is keen to study a real-life management problem for her final-year undergraduate research project. You have asked her to study the experiences of these engineers in hybrid team working with a view to recommending any changes that may be necessary.

You ask her to start the research by sitting in on the project team hybrid meetings and, particularly, observing the behaviours of team members. What suggestions would you make to your student to help her structure her observation of the meetings?

9.2 You have been asked to give a presentation to a group of managers at the accountancy firm in which you are hoping to negotiate access for research. You wish to pursue the research question: 'What are the informal rules that govern the way in which trainee accountants work, and how do they learn these rules?'

You realise that talk of 'attempting to learn the trainee accountants' symbolic world' would do little to help your cause with this group of non-research-minded businesspeople. However, you wish to point out some of the benefits to the organisation that your research may yield. Outline what you believe these would be.

9.3 You are a bank branch manager. You feel your staff are too reluctant to generate interest from customers in relation to new accounts that the bank offers. You would like to understand the reasons for their reluctance.

a As the participant observer, how would you go about this?

b How would you record your observations?

9.4 You have been granted access to conduct observation in the department of an organisation where you previously undertook a work placement. You are considering seeking permission to video record some periods of observation. What issues would be raised by this?

Review and discussion questions

9.5 Compile a behaviour observation sheet similar to that in Box 9.7 in respect of either your job or that of a friend. Use this to compile a record of the behaviours observed.

9.6 Choose an everyday example of social behaviour, such as the way that motorists park their cars in 'open' (not multi-storey) car parks. Observe this behaviour (e.g. the distance from the entrance/exit that they park) and draw general conclusions about observed behaviour patterns. If you had wished to take photographs to support your observations, what ethical issues would you have needed to take into account?

9.7 Find an empty classroom and, using your smartphone with the camera set on the widest zoom setting, take photographs from each corner of the classroom and from the front and back. Repeat the same exercise with the camera set on the narrowest zoom setting. Discuss with a friend the differences in images due to (i) taking photographs from different positions and (ii) using different zoom settings.
How might you use these insights if video recording your own observations?

9.8 Find a current affairs (or similar) discussion on an 'on-demand' or 'catch-up' television service. Initially watch the programme to identify the main categories of behaviour that occur. Develop a draft coding schedule and watch the programme again to record the interactions evident in the discussion and then assess these interaction patterns.



Progressing your research project

Deciding on the appropriateness of observation

- Return to your research question(s) and objectives. Decide how appropriate it would be to use observation as part of your research strategy.
- If you decide that this is appropriate, explain the relationship between your research question(s) and objectives and observation. If you decide that using observation is not appropriate, justify your decision. Respond for each of the three forms of observation discussed in this chapter.
- If you decide that one or more of these forms of observation is appropriate, address the following questions for each type of observation that you consider using.
  - How will you record your observations? (As part of this consider the potential of video recording, use of static images and audio recordings, as well as more traditional forms of recording)
  - What practical problems do you foresee?
  - Which ethical concerns may arise (see Chapter 6)?
  - What threats to data quality are you likely to encounter?
  - How will you attempt to overcome these issues?
- If you decide that structured observation is appropriate, attempt to develop an observation (coding) schedule that will be suitable for your research, conduct a pilot test if possible at this stage, and amend the schedule if appropriate.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Massa, F.G. and O'Mahony, S. (2021) 'Order from chaos: How networked activists self-organize by creating a participation architecture', *Administrative Science Quarterly,* Vol. 66, No. 4, pp. 1037–1083. This paper has an extremely detailed methods section outlining the variety of forms of observation used in considerable detail.

Mintzberg, H. (1973) *The Nature of Managerial Work*. New York: Harper & Row. Appendix C has a full account of the methodology that Mintzberg employed. You will be struck by how such a seemingly simple methodology can lead to such important conclusions.

Kozinets, R.V. (2020) *Netnography: The Essential Guide to Qualitative Social Media Research* (3rd edn). London: Sage. This edition provides a valuable account if you are considering the use of online ethnography/netnography.

Negrón, R. (2012) 'Audio recording everyday talk', *Field Methods,* Vol. 24, No. 3, pp. 292–309. If you are thinking of using audio recording in observational research, you should find this article very helpful.

Spradley, J.P. (2016) *Participant Observation.* Long Grove IL: Waveland Press. The reissue of this classic text provides a clear and detailed account of the process of participant observation.

Case 9
Observing leadership and team dynamics using a simulation



Andrzej Kubik/Shutterstock

Wesley is an MBA Student with 20 years+ experience in the UK military and most recently three years' experience in wildlife conservation in Africa. As part of his research methods module Wesley developed a research proposal that focused on observing and reflected on Leadership.

During his MBA studies Wesley had completed a Leadership module, during which he and the other students had worked in groups of five in a simulation event where they trekked to the summit of Mount Kilamanjaro in Tanzania (Morrow et al. 2021). Wesley decided to utilise the simulation as observational research on Leadership and Team Dynamics. Wesley utilised his knowledge of Leadership Theories and Team Dynamics to design his observational research. Early theories on leadership argued that leaders were born with characteristics and behaviours that made them special people able to guide and influence others. One of these theories was called 'great men' and remained popular until the nineteenth century (Bass 2008; Yukl 2008).

Trait theory began to be contested in the mid-twentieth century (Northouse 2018). Subsequent research evidenced that other elements such as organizational and situational context, readiness of the followers, and interpersonal relationships, among others, are also key factors for good leadership (Bass 2008; Northouse 2018).

Experiential models offer techniques for the development of leadership. Computational and non-computational models have been proposed based on the idea that participants must experience situations involving the abilities or skills required for the exercise of leadership. These models are used in teaching and learning environments and have as their main feature the presentation of real-world situations that enable the participant to intervene, plan, make decisions, and evaluate the results of their actions (Faria et al. 2009).

Wesley's simulation used the dramatic context of a Mount Kilimanjaro trekking expedition to reinforce student learning in group dynamics and leadership. Students played one of five active roles on a team of trekkers attempting to reach the mountain summit. Each team had a sixth member (Wesley) who did not take an active part in the simulation. For each team the roles were as follows:

- Trek Leader and Guide (planning and evaluate roles based on Wesley's observations)
- Trek Doctor (decision-making and intervention role based on Wesley's observations)
- Trek Cook (intervene and evaluate role based on Wesley's observations)
- Marathon Runner (planning role based on Wesley's observations)
- Meteorologist (planning and interventionist role based on Wesley's observations)
- Observer (Wesley).

Wesley observed the trek leader and team members (participants) for 10 teams (10 different simulations).

During each round, of the simulation each team collectively discussed whether to attempt the next camp en route to the summit. Ultimately, each team had to hike over seven simulated days from Limosho Glades across the Shira Plateau and the Baranco Valley to the summit of Mount Kilimanjaro, their discussions and deliberations totalling approximately seven actual hours of real time. Team members analysed information on weather, member health conditions, supplies, goals and walking speed, and determined how much of that information to communicate to others in their team. Along the journey, the team also had to respond to two additional challenges that affected their ability to cope with altitude, trekking speed, health and overall success.

Drawing on the literature Wesley focused his observations on interpersonal interactions between all the team members. Within this he was particularly interested in:

- the common information effect (Gupta 2020), where information held by more members before team discussion has more influence on team judgements than information held by fewer members, independent of the validity of the information.
- discussion bias (Wu et al 2019), where shared information is judged as more important, accurate, and decision-relevant than unshared information.

During each round Wesley observed and made scratch notes. These he worked up into a fuller account after each round for each of the ten simulations.

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Questions

1 **a** What observational role has Wesley adopted in his research?
b Why do you think he has done this?

2 **a** If Wesley hadn't utilised the simulation, what problems could he have faced in gaining physical and subsequently cognitive access to participants?
b How did he manage these access issues?

3 What are the advantages of Wesley's approach of utilising a simulation for observational research?

4 What are the disadvantages of Wesley's approach of utilising a simulation for observational research?

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders.**



They are:

- Manufacturing in a textile company (focussing on the participant as observer role and the use of note taking and reflections in unstructured observation)
- Customer satisfaction on a long-hail tour holiday (focussing on the complete observer role and the use of note taking in unstructured observation)
- Exploring service quality in bank customers'/face-to-face experience (focussing on the complete observer role and the use of structured observation and photographs)
- Online images of tourist destinations (focussing on the nonparticipant role and the use of Internet blogs as secondary data).
- Strategy options in a mature market (focussing on the complete observer role, ethical issues and the use of note taking in unstructured observation).
- Observing work–life balance in my own organisation (focussing on the participant as observer role and the use of diaries and journals in unstructured observation)
- Observing religious tourists (focussing on the complete participant role and the use of scratch notes in unstructured observation)

Self-check answers

9.1 You could suggest that she start her attendance at meetings as observer as participant with an unstructured approach in order to simply get the 'feel' of what is happening. She should make notes of her general impressions of team members' general participation in meetings. She might also with permission video record these team meetings using the videoconferencing software. She could then analyse these data and develop an observational instrument which could be used in further meetings she attends. This instrument would be based on a coding schedule that would allow her to record, among other things, the amount of contribution by each person at the meeting and the content of that contribution.

Data collection at the meetings raises questions of research ethics. In our view, you, as the project manager, should explain to the team the role that the researcher is playing at the meetings and that the meetings are being recorded. It would be quite truthful to say at the meeting that the participation of all team members is being observed with the overall purpose of making the meetings more effective, although it need not be emphasised what gave rise to the project manager's initial concern.

9.2 The research question is very broad. It allows you plenty of scope to discover a host of interesting things about the world of the trainee accountant. You will, without doubt, emerge with a clear understanding of what they like about their work and what they do not like. This has practical implications for the sort of people that the firm ought to recruit, and how they should be trained and rewarded. You may learn about some of the short cuts practised by all occupations that may not be in the interest of the client. By the same token you will probably discover aspects of good practice that managers can disseminate to other accountants. The list of practical implications is numerous.

All this assumes, of course, that you will supply the managers with feedback based on your research findings. This raises issues of confidentiality, which you will need to have thought through before observing.

9.3 This is a difficult one. The question of status may be a factor. However, this would depend on your relationship with the staff. If you are, say, of similar age and have an open, friendly, 'one of the team' relationship with them, then it may not be too difficult. The element of threat that would attend a less open relationship would not be present.

You could set aside a time each day to work on the counter in order really to get to know what life is like for them. Even if you have done their job, you may have forgotten what it is like. It may have changed since your day. Direct conversations about account generation would probably not feature in your observations. However, you would need to have a period of reflection after each observation to think about the implications for your research question of what you have just experienced.

9.4 A number of issues may occur. You may have enjoyed your work placement and become an accepted member of your workgroup. However, you may find that you are viewed differently when you return as a researcher. As a member of the workgroup, you became an insider and aware of the views of your co-workers. As a researcher, you would be returning as an outsider, although with recollections of having been an insider. This may mean that your former colleagues are more distant than you might expect.

You now wish to return to observe your former colleagues and also to video record some periods of observation. You will need to explain your intentions to those who would be affected by your research and negotiate access at various levels (Section 6.2) to be able to collect reliable observational data. This may not be easy to achieve and will in any case be a time-consuming activity. It may be that your former colleagues are willing to become informants in your observational research and for their work-related activities and interactions to be video recorded; however, you should not expect this to be the case without needing to discuss and negotiate this with them.

Where you can negotiate access and gain informed consent, you will still need to remain vigilant of the ethical issues that we referred to earlier in this chapter. Observation is an intrusive research method. While there are potential benefits to be gained from video-recording observation, it is a very intrusive approach that may inhibit or alter the behaviours of your intended informants. In addition, there are technical and practical challenges to video-recording observation. These would require you to develop a sufficient level of competence before embarking on the use of this method to minimise the risk of poor-quality recorded data.

Get ahead using resources on the companion website at:
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Chapter 10



Collecting primary data using interviews and diaries

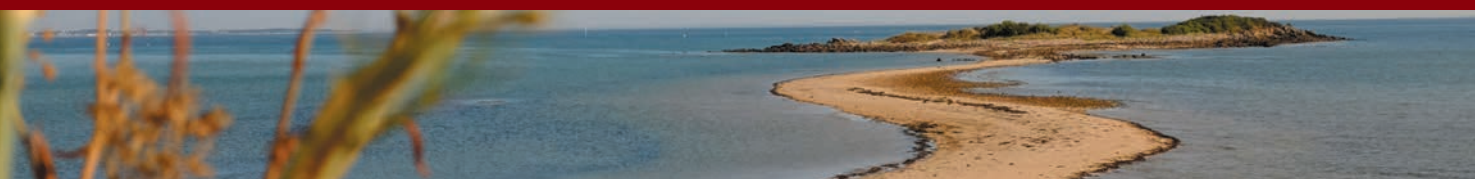
Learning outcomes

By the end of this chapter, you should be able to:

- classify interview types in terms of their structure, mode and medium, and understand their purposes;
- discuss the logistical and resource issues that affect the use of different types of interviews;
- identify potential data quality issues related to the use of one-to-one mode interviews using online, telephone and face-to-face media, and evaluate how to overcome these;
- develop your competence to undertake different types of one-to-one mode interviews using online, telephone and face-to-face media;
- highlight the advantages and disadvantages of different types of one-to-one mode interviews using online, telephone and face-to-face interview media;
- highlight the advantages and disadvantages of one-to-many and two-to-many mode group and focus group interviews using both online and face-to-face interview media;
- discuss the nature of visual interviews and ways to incorporate these using online and face-to-face interview media;
- explain how qualitative and quantitative research diaries can be used to collect primary data;
- discuss the advantages and issues of using research diaries;
- progress your research project by collecting primary data using research interviews and research diaries.

10.1 Introduction

The **research interview** is a purposeful conversation between two or more people, during which the interviewer asks concise and unambiguous questions and listens attentively to the interviewee's responses. Usually just referred to as interviews, they rely on establishing rapport between the interviewer and the interviewee, and can help you to gather valid and reliable



data to help answer your research question(s) and meet your objectives. Interviews can also be used to help refine your ideas where you have not yet fully formulated a research question or objectives.

In Section 4.2 we considered how our philosophical assumptions inform our views about the nature of reality, highlighting the diversity of research philosophies in business and management research. This also applies to interview-based research (Reisner and Whittle 2021),

Journalists' interviewing skills



LightField Studios/Shutterstock

Interviews occur constantly. Every day there is scope to watch and listen to interviews, or to read about them. Interviews of all sorts occur, such as those related to business, jobs, celebrities, the arts, current events, and news stories. Some are face-to-face while others are conducted virtually by telephone or online, using video telephony, video conferencing or online chat. Interviews may be accessed online, in newspapers and on television and radio programmes. Every time an event happens, those who witness it, those who are involved in it and those who have some expertise associated with it will be interviewed. However, despite the seeming ease with which interviews are undertaken, their conduct requires considerable skill.

One profession that relies on good-quality interviewing skills is journalism. The BBC Academy (n.d.) outlines key interviewing skills on its website. Interviewers need to think clearly about the purpose of each interview and to be aware that their first question will set the direction of an interview and establish its style. Think of a 'confrontational' interviewer you have seen or heard and contrast that with the style of a 'friendly, inviting' interviewer! Interviewers also need to be clear in the way they ask questions and not to be obscure or to use jargon. This means finding ways to ask questions about complex issues that are simple and direct. Open questions invite interviewees to describe or explain, or to develop a previous answer. Closed questions seek straightforward answers, like 'yes' or 'no'. In journalism, this type of question can be used to get to the heart of a particular matter and for this reason it is often called the 'killer' question. Where an interviewee wants to avoid directly answering such a question, its use will expose this reluctance to give a straightforward answer. The use of a 'killer' question is unlikely to be appropriate in business and management research interviewing, but the skills outlined on the BBC Academy (n.d.) downloadable guides and associated videos are likely to be helpful to business and management researchers.

philosophical assumptions underlying differing views regarding the use of interviews. If you adopt a critical realist philosophical position you are more likely to emphasise an objective view, your interviews being seen as a method to collect data from interviewees who are witnesses to a reality that exists independently from them. Within these assumptions, the research interview is seen as unproblematic, effective and reasonably structured means to gather data; providing you can gain access to appropriate participants. If you adopt an interpretivist (or social constructionist) philosophical position, you are more likely to emphasise your interviewees' views and cultures; considering them as social actors who interact with, interpret, and create their social world as well as being shaped by it. Your interviews are likely to be less structured, the data being socially constructed and co-produced by the views and interpretations of your participants and you as interviewer. You will be asking questions, responding to the participant's views, and interpreting the resulting data (Denzin 2001; Heyl 2005): having a central role in constructing meanings and being reflexive. These two views of the interview, drawing from their associated research philosophies, emphasise differences in purpose, structure and standardisation, the medium through which the interviews are operationalised, and the mode in which they are undertaken. They emphasise the need for you, as an interviewer, to reflect on and evaluate your philosophical assumptions and their influence on your approach to interviewing.

Interview is a general term for a variety of types. This variation is important since, the standardisation of questioning and amount of structure (Section 10.2), the medium through which it is operationalised and the mode in which it is undertaken (Section 10.3) need to be compatible with your research question(s) and objectives. Our main focus in this chapter is semi-structured and in-depth interviews; structured interviews (based on the use of researcher- or interviewer-completed questionnaires) being discussed in Chapter 11. Section 10.4 outlines the potential for using semi-structured and in-depth interviews. Section 10.5 identifies data quality issues associated with their use and discusses how to evaluate your own interviewing practice. Section 10.6 discusses preparing for semi-structured and in-depth interviews and the development of interview themes. The conduct of one-to-one face to face interviews, including phrasing questions, is considered in Section 10.7. Recognising that much of the associated advice can also be applied to other interview media, the conduct of online interviews and telephone interviews are considered in Sections 10.8 and 10.9 respectively. Section 10.10 considers group interviews and a distinctive form of these, focus groups; whereas Section 10.11 considers anther distinctive form of interview, the visual interview.

The chapter also considers the use of both quantitative and qualitative (research) diaries alongside interviews as well as to collect primary data (Section 10.12).

10.2 Standardisation and structure in questioning

One commonly used typology differentiates between standardised interviews and non-standardised interviews. Another commonly used typology differentiates between structured interviews, semi-structured interviews and unstructured interviews. These typologies overlap: standardised interviews and structured interviews refer to the same type; while non-standardised interviews may be divided into semi-structured and unstructured interviews (Figure 10.1). We use this three-fold typology of structured, semi-structured and unstructured to describe the nature of, and differences in questioning in research

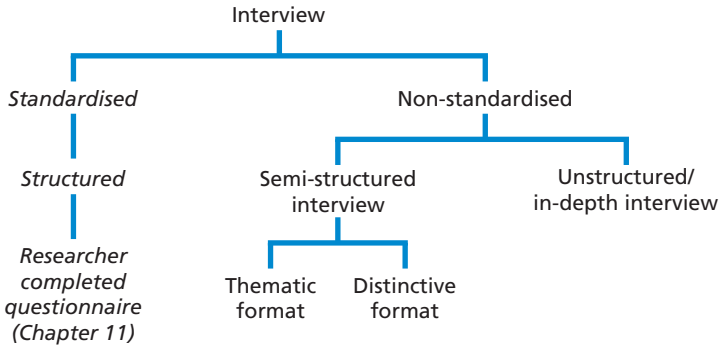


Figure 10.1 Interview structure

interviews, recognising that they refer to distinct but not entirely separate structures, within which there is scope for variation.

Structured interviews

Structured interviews are conducted using researcher-completed questionnaires. As we discuss in Section 11.2, such interviews are 'standardised', using a predetermined set of identical questions to collect comparable data from each participant .If you use a structured interview, you ask each participant the questions from the questionnaire or interview schedule exactly as written and in the same tone of voice so that you do not suggest any bias. Responses to each question are recorded on a standardised schedule, usually with pre-coded answers (Sections 11.5 and 12.3). The data are collected either for information, such as collecting attitudes and opinions (Section 11.5), or hypothesis testing (Section 12.9). As structured interviews are used to collect quantifiable data they are also referred to as 'quantitative research interviews'. In comparison, semi-structured and unstructured interviews are 'non-standardised'. These are often referred to as 'qualitative research interviews'.

Semi-structured interviews

Semi-structured interviews vary considerably in the degree of structure, drawing on one or more themes. Some have pre-set questions that the interview follows, whereas others are more open, the interviewer varying the order in which questions are asked and asking new questions dependent upon the research situation. Cassell (2015) distinguishes between two types:

- those that follow a thematic format in their questioning;
- those that have a different but distinctive format.

Thematic format semi-structured interviews

Thematic format semi-structured interviews collect data to answer your research question or address a research topic using a list of pre-determined themes and initial questions to guide the conduct of each interview. The interviews can be exploratory in nature,

collecting data about a particular topic. Alternatively, they can be explanatory in nature, the questioning being more structured around different theoretical aspects to support theory development.

Distinctive format semi-structured interviews

Distinctive format semi-structured interviews comprise a range of different structure formats. For each, the distinctive format usually forms a part of your interview, for example asking each participant to focus on a particular event such as a critical incident or encouraging participants to tell their stories. Other questions can also be asked to establish relevant contextual information. Each Distinctive format can be used for both exploratory and explanatory purposes. It may be used to generate stories about the participant's experiences as in a **narrative interview**, to gain insights through a chronological reflection on their life experiences as in a **biographical interview**, to focus on critical incidents as in a **critical incident** interview, to focus on a group of participants' perceptions or experiences as in a **focus group** or use visual images as in **visual interviews**.

Whatever the format, how you use your questioning will depend on your philosophical assumptions and your research question and objectives. If you adopt a critical realist position, you will believe that there is a truth waiting to be discovered that is external to the interpretations of your participants (Sections 4.2 and 4.4). Here you will use a more consistent approach in which you systematically explore each theme with every participant. This will allow you to compare your participants' responses to each theme to identify the underpinning reality that you seek to reveal.

Alternatively, where you adopt an interpretivist position (Section 4.4), the way in which you deal with your list of predetermined themes, and the associated questioning, is likely to be more flexible and contingent on what each participant says. The order in which you ask each participant questions will vary depending on the flow of the conversation and the data they share with you. You may omit a theme or modify your questions in a particular interview, given the context or some other characteristic that you encounter. New aspects to explore, including themes, may emerge from participants' interpretations or the research setting.

The way you develop your interview will also be likely to affect the nature of the semi-structured interviews you conduct. Themes may emerge from the findings of previously conducted unstructured interviews, and possibly from discussions with others such as your friends or project tutor. Either of these sources would suggest that you have commenced your research inductively (Section 4.5), possibly where you are using Grounded Theory Method (Section 5.5 and Section 13.9) or an inductive (data driven) Thematic Analysis (Section 13.6), Template Analysis (Section 13.7) or Explanation Building and Testing (Section 13.8). Here you will naturally follow an exploratory and emergent course of action and allow your interview themes and associated questions to evolve depending on what emerges.

Where themes used in your semi-structured interviews are derived from existing theory you will be commencing your data collection deductively, and your intention will be to test this theory in the context of your own research (Section 4.5). Here, questions about these theoretically deduced themes will need to be asked consistently across interviews to produce comparable and valid data to test the applicability of this theory in your research context. These semi-structured interviews may be used in conjunction with a theory testing approach in Thematic Analysis (Section 13.6), Template Analysis (Section 13.7) or deductive Explanation Building (Section 13.8).

Where a surprising fact emerges from the data you have already collected and analysed inductively, you will be likely to switch to deduction. The use of both induction

and deduction is associated with an abductive approach (Section 4.5). As you move to deduction, you will need to use associated questions in a consistent way in subsequent semi-structured interviews to test your emergent theory in the context of these interview settings. Apart from containing the list of themes and questions to be covered, your interview guide for this type of interview will also be likely to contain specific questions to initiate discussion, a possible list of prompts to promote further discussion, and comments to close it. These are discussed in Section 10.7. Data from a semi-structured or in-depth interview may be audio or video recorded with the consent of the participant alongside your making notes.

In-depth/unstructured interviews

In-depth interviews are informal and used to explore in depth a general area in which you are interested and are also referred to as **unstructured interviews**. They do not use predetermined themes or questions to structure or guide the course of the interview, although you will need to have at least some idea of the topic, event, experience, or aspect that you wish to explore with participants. You will start with a broad topic or idea that you wish to explore with your participants, giving them the opportunity to talk freely. These interviews are non-directive, the participant, rather than the interviewer, guiding the interview process (Cassell 2015). They have also been labelled an **informant interview** as the interviewee's perceptions guide the conduct of the interview and related discussion. By comparison, in a **respondent interview** the interviewer exercises greater direction, questions allowing the interviewee's opinions to emerge through their responses (Powney and Watts 1987).

Within an in-depth interview there is no list of pre-determined questions, rather questions and prompts are adapted and emerge during the interview from what your participant tells you rather than being determined beforehand. To minimise contaminating their responses, you need to ensure that prompts and questions emerge from what your interviewee tells you, clarifications being used to probe and explore meanings, rather than building on your own pre-conceived ideas.

Despite an in-depth interview being led by the participant, there is still scope for some variation. The conduct of an in-depth interview may be conversational; albeit one in which the participant is still the principal speaker with the interviewer focused on asking spontaneous questions and using prompts that build upon what the participant says, encouraging them to talk further. Alternatively, it may be directed almost entirely by the interviewee talking, with the researcher needing to ask very few questions or provide hardly any prompts. Mark undertook one such telephone interview with the owner of an SME about success. After his initial question, the participant required few prompts or further questions, offering a wide variety of insightful data on what success meant to them and why. In such a **phenomenological interview**, the focus is upon understanding the participant's lived experiences from their perspective by exploring the meanings and explanations they attribute to these (Cassell 2015). Such interviews are usually undertaken from an interpretivist position to gain an individual's in-depth insider account of a phenomenon such as success. With a phenomenological interview, you give the participants the overall topic and ask them to tell you about it, thereby not imposing your own frame of reference upon them. This means you will have very little control over the interview questioning compared to semi-structured interviews.

You may develop a research design that starts with in-depth interviews as an exploratory and emergent stage. These could be followed by semi-structured interviews to examine possible relationships between themes that have emerged from the analysis of data

from your in-depth interviews. Your semi-structured interviews could then be used to build well-grounded theories, or to test extant theories (Section 2.7). Through a process of convergence (Dick 2013), you use increasingly refined probing questions and compare current data with earlier data to move towards an emergent explanation or theory. This is similar to a grounded theory approach, although without the same level of procedural specificity (Section 5.5), participant selection being based on using heterogeneous (maximum variation) sampling (Section 7.9).

As a participant researcher or practitioner researcher you can both listen and engage in informal conversations, as well as pre-arrange semi and unstructured interview interviews. Where you engage in participant observation or use an action research strategy, your immersion in the research setting will help your taking part in natural, authentic conversations. Where permission (consent) is given by participants, these can generate useful research data.

The link between structure and research purpose

Qualitative research and, in particular, semi-structured and unstructured interviews, allow us capture and understand how people make meaning and sense of what is



Box 10.1 Focus on management research

The role of qualitative inquiries in the time of Covid-19

An editorial by Teti and colleagues (2020) in the International Journal of Qualitative Methods highlights how qualitative inquiries are the best method for capturing social responses to the pandemic and, in particular, to understand how people make meaning and sense of health and illness. They note how the open-ended nature and focus on 'how?' questions in individual and group interviews (as well as observations) can explore different viewpoints, meanings and motivations and highlight five essential contributions of qualitative methods during epidemics:

- 'People's health behaviours do not always fit into epidemiological models' (2020: 2) interviews highlighting that many different factors limit compliance with preventative measures.
- Additional negative impacts of the virus on 'vulnerable populations' (2020: 2), despite or because of preventative measures, are unlikely to be picked up by quantitative measures; for example, closing Schools removing access to free school meals.
- Qualitative measures are well suited to exploring the reasons epidemic solutions and strategies work or fail uncovering 'unexpected consequences or surprising outcomes' (2020: 2); for example, the impact of preventative measures such as social distancing on mental health.
- Qualitative reports of 'medical response experiences' (2020: 3) highlight the needs of medical and other first responders uncovering challenges such as limited testing availability and a lack of personal protective equipment.
- Ethnographic studies have highlighted the importance of 'getting community buy-in' (2020: 3) in achieving affective social responses to manage the outbreak.

Table 10.1 Purpose of different interviews structures

	Research purpose			
	Exploratory	**Descriptive**	**Explanatory**	**Evaluative**
Structured		✓✓	✓	✓
Semi-structured	✓		✓✓	✓✓
Unstructured	✓✓			✓✓

✓✓ = more frequent, ✓ = less frequent

happening (Box 10.1). Each of the interview structures we have outlined has a distinct purpose. Structured interviews are normally used to gather data that can be quantified and analysed quantitatively (Chapter 12), for example as part of a survey strategy. Semi-structured and unstructured (in-depth) interviews are used to gather qualitative data which are normally analysed qualitatively (Chapter 13), for example as part of a case study or Grounded Theory strategy. Such qualitative designs are likely to be used to answer 'what' and the 'how', and 'why', questions.

In Section 5.3 we outlined how the purpose of your research can be classified as either exploratory, descriptive, explanatory or evaluative. Different interview structures may be used to gather data for each kind of study (Table 10.1).

- In an exploratory study, in-depth interviews can be helpful to find out what is happening and to understand the context. Semi-structured interviews may also be used in an exploratory study. Both can be used to collect background or contextual material for your study, and are helpful where you adopt an inductive approach, such as in the development of a grounded theory (Sections 5.5).
- In a descriptive study, structured interviews can be used to identify general patterns. They are helpful where you adopt a deductive approach to test a theory, the standardisation making it easier to collect quantitative data on the same variables and test statistical propositions or hypotheses (Chapter 12).
- In an explanatory study, semi-structured interviews may help to understand relationships between variables, such as those revealed from a descriptive study (Section 5.5). Structured interviews may also be used in relation to an explanatory study, where quantitative data are collected. Research interviews used for an explanatory purpose may be useful in both inductive and deductive approaches because of the intention to explain why relationships exist (Section 2.5).
- In an evaluative study, you may find it useful to use one or more interview structures, depending on the nature of your study. Semi-structured interviews may be used to understand and evaluate the relationships. Research interviews used for an evaluative purpose may be useful in either inductive, deductive or abductive approaches (Section 4.5).

We can therefore see that the various types of interviews have a variety of purposes. The key is to ensure consistency between your research question(s) and objectives, the strategy you will employ and the methods of data collection you will use. Box 10.2 provides a checklist to help you in your deliberations about whether to use in-depth or semi-structured interviews.



Box 10.2 Checklist

To help you decide whether to use in-depth or semi-structured interviews

- ✔ Is your research exploratory or explanatory?
- ✔ Will it help to be able to probe interviewees' responses to build on or seek explanation of their answers and meanings?
- ✔ Will it help to seek personal contact in terms of gaining access to participants and their data?
- ✔ Are your data collection questions large in number, complex or open-ended?
- ✔ Will there be a need to vary the order and logic of questioning?
- ✔ Will the data collection process with each individual involve a relatively lengthy period?
- ✔ Will interviews allow you to reveal and explore social phenomena that you would not be able to observe in action?

10.3 Interview media and modes

We can also differentiate interviews by the medium in which they are conducted – online, face-to-face or telephone; and their mode – one-to-one or group (one-to-many, or two-to-many participants) (Figure 10.2).

Interview media

Online

The Covid-19 pandemic hastened a seismic change in the use of online media for synchronous communication, particularly through the use of cloud-based video communication platforms such as Zoom and Skype. Invariably, there has been a corresponding increase in potential participants' familiarity with the medium and an increased the use of online interviews for research, although they can be more difficult to conduct than face-to-face interviews due to the more limited visual cues you and your participant can sense. Synchronous and asynchronous online interviews (discussed in detail in Section 10.8) are increasingly

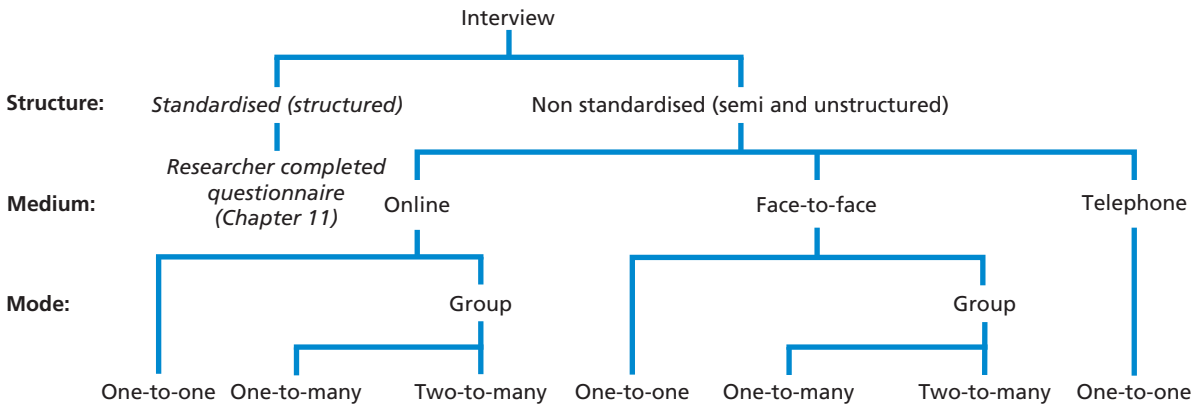


Figure 10.2 Interview structure, medium and mode

seen as more convenient or appropriate as problems of distance between participants, and associated travel costs, are reduced. However, the inevitable reduction in visual cues from the participant, alongside the security of the online platform and logistical issues such as availability of computing equipment and Internet need to be considered (Lobe et al. 2020). Online interviews are associated with both semi-structured and unstructured interviews and can be conducted in on-to-one, one-to-many and two-to-many modes.

Face-to-face

Despite the increase in the use of online interviews, face-to-face interviews, where you meet your participant in person, are still used widely. An advantage of this mode is that you meet each of your research participants, are more aware of visual cues, as well as verbal and paralinguistic (voice tone and non-verbal sounds) signals, and have a greater opportunity to build rapport while allaying any concerns that participants may have about sharing data with you. A face-to-face interview may encourage open discussion, leading to data that are rich and free from bias, given the scope to explore and check understandings during this meeting.

Telephone

Despite the increase in the use of video communication technologies, there may be some situations where you conduct an interview by telephone. Distances and the quality of Internet connections between you and your participants may mean that using a telephone is the only feasible way to conduct interviews, although these interviews are likely to be more difficult, an absence of visual cues meaning you and your participants will have to rely on verbal and paralinguistic signals in your communication. Its use is associated primarily with one-to-one interviews and is discussed in more detail in Section 10.9.

Interview modes

One-to-one interviews

Interviews may be conducted on a one-to-one basis, between you and a single participant. As we go on to outline, such one-to-one interviews may be conducted in person, through a face-to-face interview, over the telephone, or as an Internet-mediated interview (Figure 10.2).

Group interviews

There may be other situations where you conduct a semi-structured or in-depth research interview with a small number of participants to explore an aspect of your research through a group discussion that you facilitate. In some circumstances, two interviewers may conduct an interview, such as in the case of a group interview, where one interviewer leads the discussion and the other acts as principal note taker. Both one-to-many and two-to-many modes are used in group interviews where two or more participants take part in an interviewer managed discussion.

There are two different types of group interview. One type is referred to as a group interview and the other as a focus group (Figure 10.2). These titles are sometimes used interchangeably, although this should be avoided as each have a distinct purpose (Section 10.10). Be warned; a variety of terms are used interchangeably to describe group interviews, which are often wrongly assumed to have equivalent meanings (Boddy 2005).

These include focus group, group interview, group discussion and various combinations of these words!

In this chapter **group interview** is used as a general term for all semi-structured and in-depth interviews conducted with two or more participants and the same time. **Focus group** is used to refer to a specific type of group interview where the topic to be explored is predetermined and precisely defined and the role of the researcher is to facilitate or enable discussion amongst participants rather than lead this, or be the focal point of interaction (Krueger and Casey 2015). In this way, a focus group is a type of group interview, but not all group interviews should be labelled as focus groups.

10.4 The potential of semi-structured and in-depth interviews

Semi-structured and in-depth interviews can, dependent upon your methodological choice (Section 5.4), be used on their own in a quantitative research design, or as part of a multiple or mixed methods design. You may, as part of a survey strategy decide to use in-depth or semi-structured interviews initially to help identify the questions that should be asked in an online questionnaire. The data that you gather from such exploratory interviews will be used in the design of your questionnaire. Alternatively, semi-structured interviews may be used as part of a mixed methods design to explore, explain or validate themes that have emerged from analysing questionnaire data.

The potential for using such interviews is dependent upon four aspects:

- the research purpose;
- the need for personal contact (in some form);
- the questions to be asked;
- the time required from participants.

We examine each of these in turn.

Research purpose

Where you are undertaking an exploratory study, or a study that includes an exploratory element, it is likely that you will include in-depth or semi-structured interviews in your design. Similarly, an explanatory study is also likely to utilise interviews to help infer causal relationships between variables (Sections 2.4 and 11.4), understand reasons for decisions that participants have taken or understand reasons for their attitudes and opinions.

Semi-structured and in-depth interviews also provide the opportunity to 'probe' a response, where you want your interviewees to explain, or build on, their previous answers. This is important if, for example, you are adopting an interpretivist philosophy and wish to understand the meanings that participants ascribe to various phenomena (Section 4.4). Interviewees may use words or ideas in a particular way and probing their meanings will add significance and depth to the data. They may also lead the conversation into areas that you had not previously considered but which are significant for your understanding, helping you to address your research question and objectives, or formulate your research question. Interviews also afford each interviewee an opportunity to hear herself or himself 'thinking aloud' about things she or he may not have previously thought about. While you should be able to collect a rich and detailed set of data, you need to be

aware that how you interact with your interviewees and phrase questions will impact on the data you collect.

Need for personal contact

We have found that managers and employees are more likely to agree to be interviewed, rather than complete a questionnaire, especially where the interview topic is seen to be interesting and relevant to their current work. An interview provides them with an opportunity to reflect on events without needing to write anything down. It allows you to offer personal assurances about the way their data will be used (Sections 6.2 and 6.5).

In most research designs interviews will be pre-arranged, the interviewer and participant meeting at a specific time for an agreed period either virtually using cloud-based peer-to-peer software or telephone, or in a specified place. However, for some research designs, such as participatory inquiry (Section 4.3), or where as an internal or practitioner researcher you participate in the research setting rather than entering just to conduct a pre-arranged interview (Section 5.9), your scope to conduct interviews more spontaneously increases. Such participatory research designs include using participant observation (Section 9.3) or action research (Section 5.5).

Situations are likely to occur where you will consider the choice between using research interviews and other qualitative methods such as observation (Chapter 9). In this regard, a distinction has been made between contrived and natural data. **Natural** or naturally occurring **data** are those observed from real conversations that take place in everyday, authentic situations. **Contrived data** are those that result from a researcher organising an experiment, interview or survey (Speer 2008). For some research topics there are reasons why it is not possible to collect observed, natural data. These reasons relate to the taken-for-granted assumptions, sensitivity and hidden nature of some social phenomena (such as in personal relationships) that mean it is difficult to gain access to and observe these in action. Using interviews to explore such phenomena means that you can gain access to authentic accounts that you would not be able to observe in action. As a result, the distinction between natural and contrived data may be too rigid (Speer 2008).

Questions to be asked

An in-depth or semi-structured interview is likely to be the most advantageous approach to attempt to obtain data in the following circumstances:

- where there are a large number of questions to be answered;
- where the questions are open ended;
- where the order and logic of questioning may need to be varied (Box 10.3).

Time required from participants

Often the complexity of issues to be covered or their number and variety mean that a semi-structured or in-depth interview is the best or only means of collecting data. In our experience, where expectations have been established clearly about the length of time required and participants understand and agree with the objectives of the research interview, they are willing to be interviewed. We have found that our participants tend to be generous with their time, especially when their interview is arranged at a time convenient



Box 10.3 Focus on student research

The need to vary the order and logic of questioning

Val undertook a series of semi-structured interviews into the approaches used to manage public relations (PR) activities in 30 organisations. It soon became evident that it would not be meaningful to ask the same questions in each organisation. For example, some organisations had centralised PR as part of the marketing function, whereas in other organisations it was devolved to individual business units. Another significant theme was associated with the public-relations styles adopted. Some organisations adopted a 'press agency' approach where the main focus was to get the organisation or product mentioned in the media as often as possible, the nature of the mention being of secondary importance. Others adopted a 'public information' approach where the main aim was to get media exposure for the organisation or product.

The impact of these and other themes meant that it was not sensible to ask the same questions at each interview, even though many questions remained applicable in all cases and the underlying intention was to ensure consistency between interviews. It was not until each interview had started that Val was able to learn how these different themes were addressed within the particular organisation. Fortunately, the flexibility offered by using semi-structured interviews enabled her to do this.

for them. However, for those of you who fancy a free lunch, we do not want to raise your expectations falsely, and the start time for an interview should not be set with this in mind!

Your aim will be to obtain data in relation to each interview theme or the overall particular focus while respecting participants rights not to answer particular questions. Where you conduct the interaction skilfully an interview is more likely to achieve this than the use of a self-completed or interviewer-completed questionnaire. Where your participant does not answer to a particular question or questions, you are likely to have some idea why a response was not provided. This may lead you to revise the question or to compose an alternative. Section 6.7 considers the ethical issues associated with seeking to obtain answers.

10.5 Data quality issues and evaluating interviewing practice

Before discussing how to prepare for and conduct semi-structured or in-depth interviews we consider data quality issues associated with these types of research interview and how to evaluate your interviewing practice. This is because your preparation for and conduct of interviews will be influenced by the need to ensure quality data and, as part of this, your own interviewing practice. We also recommend you evaluate and reflect upon your own practice by undertaking a pilot interview before collecting data for your research.

Data quality issues

Reliability/dependability

The lack of standardisation in semi-structured and in-depth interviews can lead to concerns about reliability/dependability (Section 5.8, Table 5.6) and whether alternative researchers would reveal similar information. The concern about reliability/dependability in these types of interview is also related to issues about three types of potential bias. The first of these

is **interviewer bias** where the comments, tone or non-verbal behaviour of the interviewer creates bias in the way participants respond to questions. This may be because you impose your own beliefs and frame of reference through the questions that you ask. You may also demonstrate bias in the way you interpret responses. Where you are unable to gain interviewees' trust, or perhaps where your personal credibility is seen to be lacking, the value of the data given may also be limited, raising doubts about its validity and reliability.

One response to helping minimise interviewer bias is paying careful attention to phrasing your questions, so they do not lead the participant to a particular response (summarised later in Table 10.2). In addition, it is worth reiterating that findings are not necessarily intended to be repeatable, reflecting reality at the time they were collected, in a situation which may be subject to change. The assumption is that the circumstances being explored are complex and dynamic and the value of using in-depth or semi-structured interviews derives from their flexibility to explore the complexity of the topic. Consequently, ensuring such research could be replicated by other researchers is neither realistic nor feasible without undermining the strength of this type of research.

You still, however, need to explain your research design, the reasons underpinning your choice of strategy and methods, and how your data were obtained. This will allow others to understand the processes you used to reach your research findings. The use of in-depth or semi-structured interviews should not lead to a lack of rigour in relation to the research process – rather there is a need to use a rigorous design and ensure your explanation of how the data were obtained and analysed provides sufficient detail to show your findings are dependable.

Interviewee and participant bias

Interviewee or **response bias** can be caused by participants' perceptions about the interviewer, or perceived interviewer bias. However, the cause of this type of bias may not be linked to perceptions of the interviewer. Taking part in an interview is an intrusive process. This is especially true in the case of in-depth or semi-structured interviews, where your aim will be to explore events or to seek explanations. Although a participant may, in principle, be willing to participate, they may still be sensitive to the unstructured exploration of certain themes. Participants may decide not to reveal and discuss an aspect because this would intrude on sensitive information they do not wish, or are not empowered, to discuss. They may therefore provide only a partial 'picture' of the situation, casting themselves in a 'socially desirable' role, or their organisation in a positive (or even negative) fashion.

Participant bias results from the nature of the individuals or organisational participants who agree to be interviewed (Box 10.4). The amount of time required for an interview may result in unwillingness to take part by some biasing your sample (Section 7.9). This is an issue that you will need to consider carefully and attempt to overcome through the approach taken to sampling.

Cultural differences

Further concerns may arise from cultural differences between the interviewer and intended interviewees. Gobo (2011) sees the research interview as the product of individualistic societies, which may not be so well suited to societies and participants with a different cultural orientation. He argues that the research interview makes certain assumptions:

- it is acceptable to discuss issues with outsiders;
- issues may be considered public and able to be discussed rather than being kept private and restricted;
- it is permissible for a person to hold independent views and to speak as an individual.



Box 10.4 Focus on student research

Willingness (or otherwise) to be interviewed

Saffron's research project involved her interviewing people about their perceptions of the benefits of different hair products. She decided that the best way to conduct these interviews was, with the permission of the owner, to interview customers at her local hairdresser. Saffron discovered that although some of the customers were willing to be interviewed, others were not. A minority of customers, often smartly dressed in business suits, refused outright, saying that they had insufficient time. In contrast, others, particularly pensioners, were happy to answer her questions in considerable detail and appeared to wish to prolong the interview.

Gobo also refers to societies where there may be a tendency to respond to an interviewer's questions only by being positive or by agreeing.

Cultural differences that you as an interviewer may have to cope with may be more subtle. They may affect rapport and what the participant is willing to say, how the researcher interprets their words and meanings, or fails to understand these, and influence the questions that the interviewer asks. Where your research involves interviewing participants from a different culture, whether in a cross-national or multicultural setting, you will need to ensure that you minimise any form of bias or threat to reliability. Cultural reflexivity may well help here. This will involve you reflecting on the nature of the relationship between you and your intended participants and how differing and similar cultural customs may affect your interactions (Court and Abbas 2013). Prior to interviewing, you could visit a workplace and observe, listen or participate in informal conversations so that you become more familiar with the research setting. Such understandings will help you develop rapport with potential participants and gain their acceptance.

Cultural reflexivity will also involve you considering how to engage your participants and involve them. This is likely to include evaluating how best to conduct interviews: whether to conduct these in one-to-one or group mode; choosing the most appropriate level of structure and formality to use; and whether to attempt to gather data in a single interview or in more than one to develop rapport and understanding. It may also be appropriate to use a distinct format such as a narrative interview or a thematic format or engage in participatory forms of research such as action research or ethnography (Section 5.5). Adopting a culturally reflexive approach may help to overcome cultural differences that affect what is discussed and not discussed, clarify what is important and what is not, and reveal what should be followed up and explored.Box 10.5 offers a series of questions you can ask yourself to better understand and anticipate the cultural context in which an interview takes place.

Generalisability/transferability

An issue is often raised about the generalisability/transferability of findings from qualitative research interviews, although the validity/credibility of the data they produce is generally seen to be less of an issue (Section 5.8). Generalisability/transferability refers to the extent to which the findings of a research study are applicable to other settings. This may be questioned in relation to the statistical generalisability of qualitative research studies where these are based on a small sample. However, this should not be interpreted as meaning that a qualitative study is intrinsically less valuable than a quantitative study as a well-planned rigorous case study can produce valuable findings. As we noted in Section 10.2, such



Box 10.5 Checklist

To better understand an interview's cultural context

- ✔ Where is the interview location?
- ✔ Who chose the interview location?
- ✔ What are the interview location's characteristics?
- ✔ What meanings does the interview location have for the participant/interviewer?
- ✔ What is the cultural relationship between the participant and the interviewer?
- ✔ Are they any cultural norms that might influence what is said/not said?
- ✔ Are there any issues of status/gender/age that might influence what is said/not said?
- ✔ How can you as interviewer know what is not being said?
- ✔ (Where there is more than one researcher) What cultural/status/gender/age/other factors may affect relationships between the researchers?

Source: Developed from Court and Abbas (2013).

studies are more likely to be used to explore and explain and provide insights that can be used to develop theory, rather than to provide statistical generalisations about a population.

Interviews can also be used to test existing theory or for an emergent theory to be subsequently discussed in relation to a pre-existing theory. Where you can relate your research project to existing theory you will be able to demonstrate that your findings have a broader theoretical significance than the case or cases that form the basis of your work. It will be up to you to establish how the findings from your particular case or cases are related to existing theory to demonstrate their transferability or generalisability. In addition, your full description of the research questions, design, context, findings and resulting interpretations in your project report will allow other researchers to design similar research projects to obtain comparable data.

Validity/credibility

Validity/credibility refers to the extent to which the researcher has gained access to a participant's knowledge and experience, and can infer their intended meanings from the language used by that person. The scope to explore meanings during a semi-structured or in-depth interview may help to enhance the validity/credibility of the data collected, although forms of bias and cultural differences may impair this outcome.

Semi-structured and in-depth interviews can achieve a high level of validity/credibility (Section 5.9) where conducted carefully using clarifying questions, probing meanings and by exploring responses from a variety of angles or perspectives (Section 10.7). These can help you to build trust and rapport, collect sufficient data and provide you with the opportunity to ask participants to check these data. Credibility may also be achieved by accounting for negative cases (those that are counter to other cases) during analysis, in the explanations you develop and being reflective and reflexive about your research.

Evaluating your interviewing practice

Our discussion has already highlighted how semi-structured and in-depth interviews are complicated interactions in which you as interview face challenges of phrasing questions that are unbiased and unlikely to be misunderstood. Within each interview, you need to try and ensure that you have not dominated the verbal interactions either by directing what is said or in the amount you have spoken. You need to avoid leading the participant to answer in a particular way by offering them your own experiences ideas or views, or

potentially biasing their responses through the way you have phrased questions. You also need to minimise the likelihood of your participant being unwilling to answer or elaborate on the questions you ask.

We consider it important that you engage critically with your own interviewing practice and identify how it might be developed and improved early on in your research by undertaking at least one pilot interview. Reissner (2018) highlights four widely used practical strategies which can be used for this:

- Detailed examination of your interview interactions focussing on the conversation and associated contextual and cultural factors as knowledge is created through the interview.
- Engagement by immersing yourself in the data you have collected such as watching video recordings or listening to audio recordings or reading interview transcripts to learn what has worked well and identify interactional challenges.
- Reflection using reflective diaries or journals to capture your own insights into your interviewing practice through introspection and dialogue.
- Enlisting participants in reflexive dialogue to jointly examine how they respond to different aspects of the interviews, including the questions. However, this depends upon participants being willing to invest time beyond participating in the interview.

All but the last of these can, in particular, be aided by mapping the conversational space, and then immersing yourself in the data to look at your own interviewing practice including the cleanness of the language you have used to ask questions. We outline each of these next. The use of reflection is also outlined in Section 1.5, while further details regarding enlisting participants in reflexive dialogue can be found in Hibbert et al. (2014).

Mapping conversational space

Reissner (2018) argues that mapping and analysing the conversations that make up interviews can help you engage reflexively with your own interviewing practice, in particular, your questioning and listening and relationship with the participants. She proposes using a conversational space map (Figure 10.3) to represent the pattern of interactions between

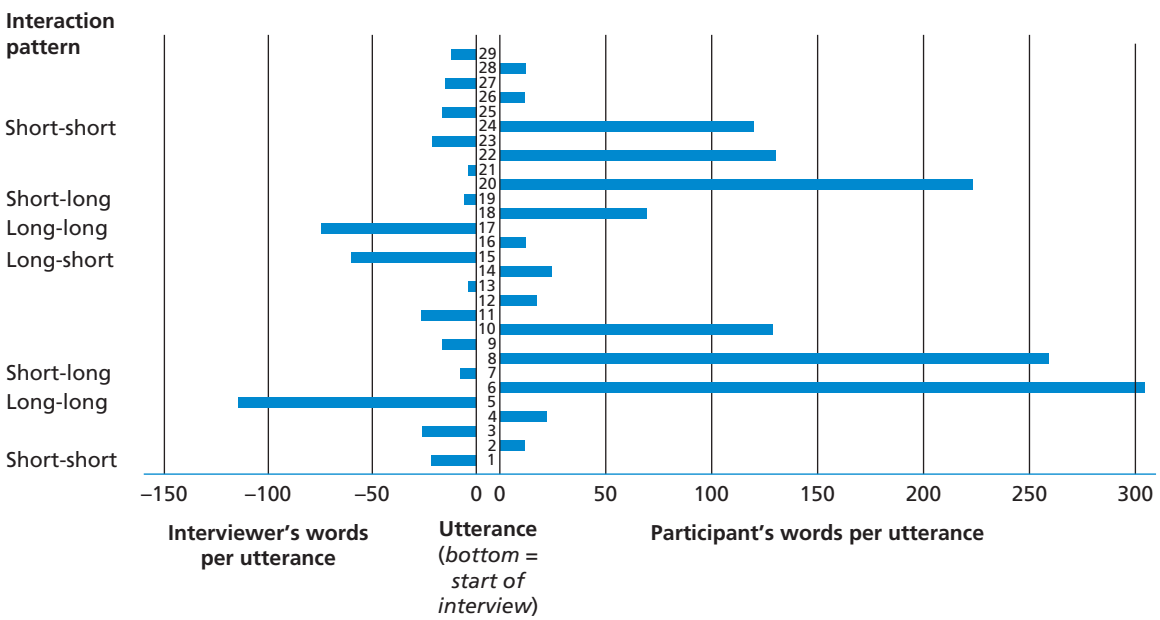


Figure 10.3 Conversational space map

the interviewer and participant, providing an overview of the interview dynamics within which more detailed analysis of your practice can be undertaken. Subsequent analysis of the interview transcript and the audio-visual or audio recording can help identify the actual reasons for these patterns and highlight potential issues. (Box 10.6)

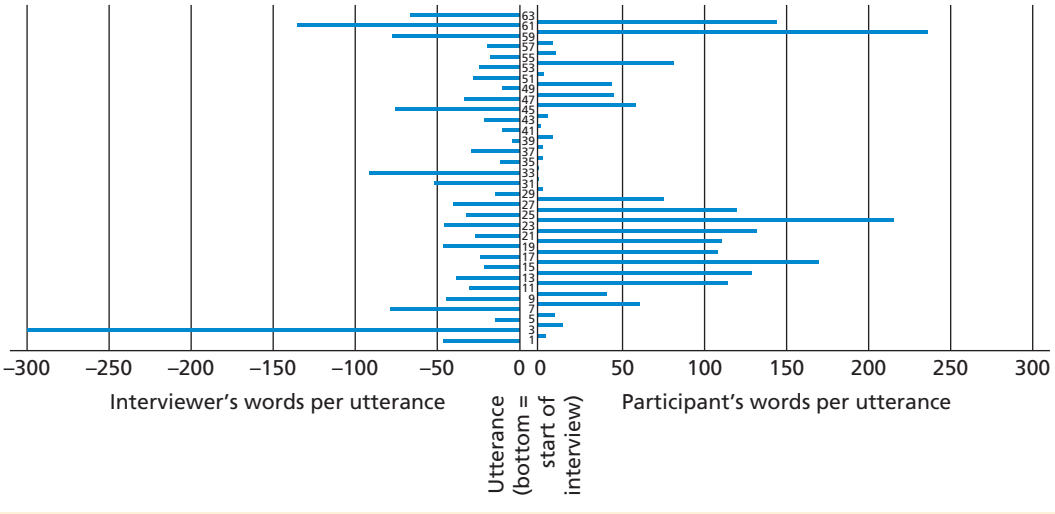
Each **conversational space map** represents visually the number of words in each utterance made by the interviewer and interviewee for an entire interview. It can be used to highlight the different interaction patterns between you as interviewer and the participant.

Box 10.6 Focus on student research

Using a conversational space map

Sophia had decided to use semi-structured thematic interviews. Prior to collecting data, she undertook, and video recorded a pilot interview using Zoom cloud-based video conferencing. Having reflected upon what she had said to the participant and her use of paralinguistic signals and visual cues she decided to examine the pattern of interaction with her participant, creating a Conversational Space Map of their interactional practice. This revealed that, although the participant spoke more than Sophia did, there were parts of the interview where she dominated the conversation. Looking at the first half of her interview, she felt her first few lengthy utterances were easily justified as she was explaining her study, reading the confidentiality statement, and asking demographic questions, which did not require lengthy answers. For the remainder of the interview, although there were places where her participant gave a longer response, Sophia felt she was talking too much. In contrast her participant was offering very short answers.

Sophia decided to re-examine the interview recording and transcript to try and understand why this might be. She noticed some of the questions she asked were vague and she had needed to clarify what she wished to know to the participant by asking supplementary questions. She also noted that although she had asked several closed questions that the participant had answered very briefly, her participant often seemed unwilling to elaborate on the answers given. She decided she needed to review the questions outlined on her interview checklist and think more carefully about her use of closed and open questions as well as how each could be phrased more precisely so her participants could better understand them and be encouraged to give fuller answers.



In Figure 10.3 the interview starts (at the bottom of the 'map') with a short-short pattern where the interviewer is collecting demographic data. Where this pattern continues, it can suggest the interviewer is finding it difficult establish flow or the participant is refusing to engage. This is followed by a long-long interaction where the interviewer puts their question in context. Such patterns where they continue can indicate that the interview is an exchange of ideas which may not be the purpose of the interview. The series of short–long interactions occur as the interviewer elicits answers through follow-up questions; often considered the ideal for interviews. The next interaction is a long–short interaction where the participant was reluctant to answer. This pattern, where it continues, can also indicate the interviewer is telling the participant too much about their own views and dominating the interview. After further interactions long-long and short-long interactions, the latter comprising follow-up questions, the interview closes with a series of short-short interactions.

Assessing language cleanness

We have already noted the importance of reviewing the impact of your questioning on responses and, in particular, the potential introduction of bias. Fortunately, Cairns et al. (2021: 9) offer a method for reviewing this called the **cleanness rating**. This method is derived from **clean language practice**, where the language used to ask questions minimises the potential for contaminating the participant's experiences. It assesses the extent each question constrains or enables the participant to respond from within their own world view. Within this, interview questions are placed a continuum from 'clean' to 'leading', their likely impact in terms of bias varying (Table 10.2).

Table 10.2 Language cleanness rating categories

Cleanness rating	Description	Extent of presupposition/ evaluation
Classically clean	Question only uses universal constructs and participant content.	none
Clean repeat	Recap of participant's words with no new content, presupposition, or evaluation.	none
Contextually clean – topic	Question introduces interview topic/theme with minimum superfluous content or supposition.	minimal
Contextually clean – logic	Question, while not classically clean, remains within logic of participant's description, with no new content, presupposition, or evaluation.	minimal
Mildly leading	Question/statement suggests or implies an answer or way of answering but participant's responses indicate no reason to doubt their responses.	present, but no reason to doubt
Strongly leading	Question/statement suggests or implies an answer and participant's responses raise doubts of authenticity.	present and gives reason to doubt
Other: Non leading comments or gestures	Comment/gesture/non-verbal utterance encourages participant to continue and indicates interviewer is attentive. Statement/question /response about the process.	none

Source: Developed from Cairns-Lee, H., Lawley, J. and Tosey, P. (2021, online first)

To use the cleanness rating, following an interview you:

1. Obtain a full transcript of the interview, and;
2. (Re)familiarise yourself with the context of the interview including the information provided to participants (e.g. information sheet, interview structure, mode, medium and type).
3. Examine each interviewer question or prompt in the context of the interviewees prior and subsequent responses.
4. Assign one of the six cleanness rating categories (Table 10.2) to the question asked.
5. If possible, ask a friend to also assess the interview and compare your ratings.

Undertaking a cleanness rating for your own interview questioning is especially helpful in developing your own interviewing skills. It is also helpful when writing about your method and providing a reflexive account of how you undertook your research and showing the extent your findings are meaningful.

10.6 Preparing for semi-structured or in-depth interviewing

Like all research methods, the key to a successful interview is careful preparation. We believe it is crucial that you plan precisely how you are going to demonstrate your competence and credibility to obtain the confidence of your interviewees and collect quality data.

To help ensure data quality, we now consider some key aspects that your preparation needs to include whatever the modes of interviewing or medium used. These are:

- contextual knowledge;
- explaining the interview's thematic or distinctive format prior to the interview;
- appropriateness of the intended interview medium;
- logistics and time management.

Contextual knowledge

You will already have some background knowledge from reviewing the literature (Chapter 3). You now need to become knowledgeable about the context in which each interview will take place. There is likely to be information online in organisational websites, national, local or specialist news sites and relevant trade association's websites. Organisational websites usually allow access company annual reports, other organisation-related and product information, market and financial data and press releases. Research databases providing access to relevant organisational information will be accessible through your university library or professional association. Such background information will help you to develop a good level of contextual knowledge which, in the interview, will help to demonstrate your credibility. It will also allow you to assess the accuracy of responses and encourage participants to offer a more detailed account of the topic under discussion. As you undertake later interviews, you will also be able to draw on the initial analysis that you made of data previously collected.

Successfully interviewing participants from different cultures requires some knowledge about those cultures. An in-depth interview offers the opportunity to explore meanings, including those that may be culturally specific, but you will need to be aware of cultural differences and their implications (Section 10.5). Brinkmann and Kvale (2015) highlight some of the verbal and paralinguistic signals and visual cues that may have contrary or

different meanings between cultures. For example, answering 'yes' to a question may indicate agreement in some cultures, but in others may be a way of indicating the question has been understood, or its importance recognised. A nod of the head indicates agreement in some cultures but in others it may mean something else. Brinkmann and Kvale (2015) note the importance of being aware of social conventions in a culture to understand how answers are constructed and not to cause offence. Cultural differences exist not only between countries but between groups, social classes and organisations and some prior knowledge about those you wish to interview will invariably be helpful.

Explaining the thematic or distinctive format

Your credibility as interviewer can be promoted through the supply of relevant information to participants before the interview. Providing participants with a list of the interview themes or outlining the distinctive format before the event as part of the information sheet (Section 6.7), where this is appropriate, should help this.

Themes

This list of themes (Box 10.7) can help to promote validity and reliability because it informs the interviewee about what you are interested in and provides them with the opportunity to prepare for the interview by assembling supporting organisational documentation from their files. Access to organisational documentation also allows for triangulation of the data provided (Sections 8.2 and 8.3). Our experience is that participants are generally willing to supply a photocopy or a PDF file of such material, subject to confidentiality concerns and the need to exclude personal details in the research report.

Interview themes may be derived from the literature that you read, the theories that you consider, your experience of a particular topic, common sense and discussions with co-workers, fellow students, tutors and research participants, or a combination of these approaches. You will need to have some idea of the broad theme (or themes) that you wish to discuss with your participants even if you intend to commence with exploratory, in-depth interviews as part of a Grounded Theory strategy to your research project (Section 5.5).



Box 10.7
Focus on student research

Developing interview themes

Karl was interested in understanding why some employees in his organisation used the online IT Help Desk while others did not. This subject was felt to be important in relation to perceptions about service-level agreements, service relationships and service quality. He decided to provide his interviewees with a list of themes that he wished to explore during interviews. After some deliberation and reading of the academic literature he came up with the following list of themes:

- when and how employees use the online IT Help Desk;
- the support employees feel they are receiving;
- the services employees feel the online IT Help Desk should be providing;
- employees' knowledge of service-level agreements;
- the extent to which employees consider the online IT Help Desk is meets their needs.

He subsequently used this list of themes to develop his interview guide (Box 10.8).



Box 10.8 Focus on student research

Extract from an interview guide

Karl was interested in understanding why some employees in his organisation used the online IT Help Desk while others did not. Using his interview themes (Box 10.7), he began to develop his guide:

Help Desk support

1 Have you used the online IT Help Desk?

- **a** *Probe*: In what ways? [asking for actual examples]
- **b** *Probe [using example(s) given]*: Can you tell me more about what happened when you used . . . [use example given]?
- **c** *Probe [if not used]*: Can you tell me why you have not used the online IT Help Desk?

2 What do you consider an online IT Help Desk should do?

- **a** *Probe*: In what way do you think they should . . . [use phrase from participant's response]?
- **b** *Probe*: why do you think they should . . . [use phrase from participant's response]?

Without at least some focus, your interview will lack a sense of direction and purpose. You should therefore start with a set of themes that reflect the variables being studied, or at least one or more general questions related to your research topic that you could use to start your interview. These can be incorporated into your interview guide (Box 10.8) and included as an appendix in your project report.

This lists topics that you intend to cover in the interview along with initial questions and probes that may be used to follow up initial responses and obtain greater detail from your participants. When creating your guide, you need to try to ensure that the order of questions is likely to be logical to your participants and that the language you use will be comprehensible. Using your guide, you will be able to develop and/or explore research themes through the in-depth or semi-structured interviews that you conduct to see whether you can identify and test relationships between them (Chapter 13).

Distinctive format

For distinctive format interviews, you will need to describe briefly the format of the interviews in your information sheet. For example:

> Narrative interview: in the interview you will be asked to tell your story about your experiences at [organisation name].
> Biographical interview: in the interview you will be asked talk about your career from your first job until now.
> Critical incidents interview: in the interview you will be asked to describe actual incidents or events that relate to particularly good or particularly bad customer service.
> Visual interview: in the interview you will be given a series of advertisements for household products and asked questions about the advertisement.

You will also need to prepare an interview guide and any additional materials, such as photographs for a visual interview.

Appropriateness of the intended interview medium

The medium through which you choose to conduct your interviews will influence the data you collect and whom you collect it from. As we discussed in Section 6.6, you should

Table 10.3 Selected attributes of interview media

Attribute	Online (video communication)	Telephone	Face to face
Interviewer's control of over interview environment	Minimal regarding suitability although can request. Not possible to know who else is present if out of camera view.	Minimal regarding suitability although can request. Not possible to know who else is present.	High
Participants' privacy[a]	Need to remove all possible identifiers from software, video background, alongside other confidentiality and anonymity aspects	Confidentiality and anonymity aspects	Confidentiality and anonymity aspects
Technology requirements	Web enabled, video communication	Telephone and audio recorder	Minimal other than audio/video recorder
Visual cues, verbal and paralinguistic signals	Visual and audio although limited by what camera shows, time lag between speech and video	Audio only	Visual and audio
Interview recording	Through the technology	Needs additional equipment	Needs additional equipment
Interview transcription	Automatic, but needs cleaning	Additional cost – voice recognition software can help	Additional cost – voice recognition software can help

[a] Discussed in Sections 6.7 and 6.8

Sources: Authors' experiences, Carter et al. (2021); Cassell (2015); Lobo et al. (2020);

choose the environment for your interviews with regard to your own personal safety. You should also think about the impact that the medium may have upon your participants and the way they respond during the interview (Table 10.3, Box 10.9).

The environment should be convenient for your participants, where they will feel comfortable and where the interview is unlikely to be disturbed. For face-to-face interviews, you will be able to decide, in some cases with the participant, where the interview will be conducted. However, for telephone and online interviews you have far less influence, while you will be able to discuss these requirements when arranging the interview and request the participant is in a space that is quiet with a good Wi-Fi/telephone connection, where they will not be overheard when talking normally, and where they are unlikely to be interrupted; unlike in Box 10.9, you will not be physically present.

You also need to try and ensure a location that is quiet so that outside noise will not reduce the quality of your recording of the interview. Each of us has experienced situations when conducting interviews where noise from outside the building or even from within it has been disruptive. In particular, Mark recalls an interview in a room where noise from building work outside meant that although he was able to hear the participant's responses clearly while the interview was taking place, much of the audio recording of this interview was unintelligible due to the sound of a very loud pneumatic drill! Similarly, we have all experienced those online conversations where conversations are interrupted by someone entering the room uninvited.

In many cases, the interview location will be arranged by those whom you interview. When you interview organisational participants such as managers in their offices, this has the advantage that they can find documents which support points they are making. Where you are undertaking an online interview, you will need try and impress on the participant the importance of not being disturbed.

The different interview media also offer different advantages in terms of being able to see or hear visual cues and verbal and paralinguistic signals relating to the participant's feelings and responding accordingly. These are most obvious in face-to-face interviews, online interviews reducing their utility due in part to the camera angle and time lags between video and audio, with only verbal signals being available for telephone interviews.

Technology requirements and the ability to easily record the interview also differ between media (Table 10.3). The availability of technology may in some cases limit participation from certain groups, particularly where a web-enabled device and Wi-Fi is needed and, in some cases, the authority to install the software (Carter et al. 2021).

Logistics and time management

Logistics

Before conducting interviews, you need to consider their scheduling. Thought needs to be given to the number of interviews it is feasible to undertake in a given period, including time required to compose notes and/or transcribe audio recordings of each one and undertake your initial analysis of the data collected (Section 13.4). Additional time and consideration will be required if you also need to translate your transcription into another language.

Conducting face-to-face interviews may become costly, particularly where participants are dispersed due to the need to travel, although this can be kept to a minimum by cluster sampling (Section 7.6) or using online (Section 10.8) or telephone (Section 10.9) modes. Choice of mode should be determined primarily by the nature of the research question and objectives, and the suitability of the mode for the intended participants rather than cost considerations. This highlights the need to examine the feasibility of the proposed question and research strategy in relation to resource constraints, including time available and expense, before proceeding to the collection of data.



Box 10.9 Focus on student research

Choosing an appropriate environment

Writing her reflective diary after her first interview Emily commented:

I had agreed a date, place and time for the interview with my participant, endeavouring to ensure this was convenient for them. Our interview lasted approximately 35 minutes and was conducted in a campus coffee shop. This was a convenient, quiet, but also somewhere where I felt we would be comfortable/relaxed.

An hours before the interview, I found out the café closed at 4 pm, exactly the time I had arranged the interview. I sent text messages, emails to try and arrange an alternative place for the interview but got no response. When I got there 10 minutes before the interview, only the bit selling coffees was closed! Phew! The rest of the coffee shop remained open, and my participant turned up having not seen my messages. The interview went ahead as planned and I apologised for not being able to buy them a cup of coffee. They thought it was quite funny, but next time I will check more carefully.

Interviewing is time-consuming. Where the purpose of the interview is to explore themes or to explain findings, you may need a fairly lengthy discussion. In such cases the time required is unlikely to be less than one hour and could easily exceed this, perhaps taking two hours or longer. This may have an adverse impact on the number and representativeness of those who are willing to be interview participants. Where managers or other potential participants receive frequent requests to participate in research projects, they are likely to have considered how much of their time they are willing to devote to such activities. It is therefore important for you to establish credibility with, and to engender the interest of, potential participants.

Time management

You need to consider very carefully the amount of time that will be required to conduct an interview. In our experience, this is usually underestimated. The likely time required should be highlighted in any initial contact, and it may be better to suggest that interviews are envisaged to last up to, say, one, one and a half, or two hours, so that a willing participant sets aside sufficient time. Some negotiation may be possible with an interested participant who feels unable to agree to a request for, say, two hours but who is prepared to agree to a briefer meeting. The interview can also be arranged at a time when the interviewee will be under least pressure.

Another possible strategy is to arrange two or more shorter interviews to explore a topic thoroughly. This allows participants to reflect on the themes raised and questions being asked, and provide a fuller account. To establish this option, it may be beneficial to arrange an initial meeting with a potential participant to discuss this request. A series of exploratory interviews may then be agreed. Consideration also needs to be given to the number of interviews that may be undertaken in a given period; it being easy to overestimate what is practically possible (Box 10.10). Where undertaking interviews at one establishment, it may be more practical to undertake several interviews in one day, although there is still a need to maintain concentration, make notes and write up information, and to conduct your initial analysis. Even in this situation, conducting more than three interviews per day is likely to be challenging.

It is likely that, having assessed the advantages and disadvantages (Table 10.5), you will have audio or video recorded your interview. You will therefore need to decide whether to work directly from the recording or to produce a transcription of all or parts of the recording. This decision will depend on your research strategy and the way in which you intend



Box 10.10 Focus on student research

Calculating the number of in-depth interviews to be undertaken in one day

Firoz arranged two interviews in a capital city during the course of a day, which involved travelling some miles across the city during the lunch hour. Two interviews appeared to be a reasonable target. However, he massively underestimated the time required forgetting to allow for: the total travelling time to and from the city; the time to find the appropriate buildings; the transfer time during a busy period; the time to conduct the interviews; the need to maintain concentration, to probe responses, to make initial notes and then to write these up without too much time elapsing. Because of his experience, Firoz decided not to conduct more than one interview per day where significant travel was involved, even though this necessitated more journeys and greater expense.



Box 10.11 Checklist

To prepare for your semi-structured or in-depth interview

- ✔ What level of knowledge about your research topic will be required to demonstrate your competence and credibility to gain the confidence of your participants?
- ✔ What level of contextual knowledge will be required to demonstrate your competence and credibility to gain the confidence of your participants?
- ✔ What level of knowledge about the culture of your participants will be required to gain their confidence before they are willing to share data?
- ✔ What will be thematic focus or distinctive format you wish to use during your interview?
- ✔ What type of information will it be useful to send to each participant prior to the interview?
- ✔ What did you agree to supply to your participant when you arranged the interview? Has this been supplied?
- ✔ Have you considered the impact that your interview location may have on participants' responses and for your own personal safety?
- ✔ Have you considered the appropriateness of the interview medium and the impact it may have on participants' ability to take part and their responses?
- ✔ Have you considered logistical issues, particularly the time needed to operationalise your interviewing?

to analyse your qualitative data (Chapter 13). For example, using a Grounded Theory strategy (Section 13.9) is likely to mean that you will need to transcribe fully each interview. Each hour of audio recording is likely to take at least seven hours to transcribe or to process ready for entry into computer-assisted qualitative data analysis software, unless you are a very competent audio-typist, or you know one who will undertake this task for you! Use of software to assist the transcription of audio recordings may also be helpful.

Where it is necessary to translate your interview, care will be needed to ensure that the meanings contained in the original or source language are reproduced authentically in the translated language. However, translation may be more problematic than just technically producing language equivalence. Chidlow et al. (2014) discuss the need to go beyond translational equivalence and to use a contextualised approach to promote understanding. We consider potential problems associated with translations in Section 11.5 and outline different translation techniques in Table 11.4, together with their respective advantages and disadvantages.

Box 10.11 provides a checklist of the key points considered in this section to help you to prepare for semi-structured or in-depth interviews.

10.7 Conducting one-to-one face-to-face interviews

We first consider conducting one-to-one face-to-face semi-structured or in-depth interviews before using this as a comparator for interview forms using other modes and media. The aspects we discuss here are intended to help maximise the reliability/dependability and validity/credibility of the data produced. They are, in many instances are also applicable to one-to-many and two-to-many modes as well as different forms of online and telephone interviews. These aspects relate to the:

- interviewer appearance;
- opening the interview;

- approach to questioning;
- use of different types of questions;
- behaviour during the interview;
- demonstrating attentive listening skills;
- summarising and testing understanding;
- dealing with difficult participants;
- recording data;
- evaluating your interview practice.

We discuss these in turn. Key points are summarised as a checklist at the end of this section (Box 10.16).

Interviewer appearance

Your appearance may affect the perception of the interviewee. Where this has an adverse effect on your credibility in the view of interviewees, or results in a failure to gain their confidence, it can affect the reliability of the information provided. Where appropriate you should consider wearing a similar style of clothing to those to be interviewed. For example, your interviewees would not expect you to wear the same workwear that they need to put on to work on the production line. Rather, you will need to wear clothing that will be generally acceptable for the setting within which the interview will occur (Box 10.12).

Opening the interview

Where the interviewee has not met you before, the first few minutes of conversation will have a significant impact on the outcome of the interview – again related to the issue of your credibility and the level of the interviewee's confidence. Often such interviews occur in a setting that is unfamiliar to you. Despite this, it is your responsibility to manage the conversation. You will need to explain your research to the participant and, hopefully, gain consent (Section 6.7). As part of this you will need to establish your credibility and gain the interviewee's confidence. During initial discussions the interviewee is often uncertain about sharing information, and about how their data will be used. They need clarification about the exact nature of the data that you wish to obtain. We have found the participant information sheet (Section 6.7, Box 6.17) and consent form (Box 6.18) are both extremely



Box 10.12 Focus on student research

Checking out the dress code

Mal arranged to visit the administration centre of a large insurance company on a Friday to conduct one-to-one interviews with staff drawn from its telephone sales division. He felt that it was appropriate to wear fairly 'formal' clothes to match what he thought would be the dress code of the organisation. Indeed, for four days of the working week this assumption would have been appropriate. However, the organisation had recently introduced the practice of not wearing such formal work clothes on Fridays. Mal found himself the only one dressed formally in the organisation on the day of his visit. Taking lunch proved to be a memorable experience, as he mingled with everyone else dressed in jeans and tee shirts, etc. His 'mistake' proved to be an amusing opening at the start of each interview rather than a barrier to gaining access to participants' data. Indeed, it might not have been appropriate for him to match the 'dress-down' style of participants too closely.



Box 10.13 Focus on student research

Opening a semi-structured interview

As part of her research project, Beth undertook a series of face-to-face semi-structured interviews with freelance consultants working for a range of organisations. She covered the following points at the start of each interview:

- The participant was thanked for considering the request for access and for agreeing to the meeting.
- The purpose of the research and its progress to date were outlined briefly. As part of this, the participant was given an information sheet to keep.
- The previously agreed right to confidentiality and anonymity was reiterated by stating that nothing said by the participant would be attributed to him/her without first seeking and obtaining permission.
- The participant's right not to answer any question was emphasised and that the interview would be stopped if the participant wished.
- The participant was told about the nature of the outputs to which the research was intended to lead and what would happen to the data collected during and after the project.
- The offer to provide a summary of the research findings to the interviewee was also restated and the participant was told when this would happen.
- The request to audio record the interview was restated and, where agreed, this was used subsequently.
- Before the substantive discussion started, Beth again requested permission to undertake the interview, summarised the themes to be covered, confirmed the amount of time available and requested that the participant read and signed the informed consent form.

All these points were dealt with within the first few minutes of the interview.

helpful in reducing such anxieties. There may also be a degree of curiosity on the part of the interviewee about why they were asked to participate. This can offer an opening for you to start a conversation, probably before the main interview commences. It may be relevant to ask participant about their role within the host organisation. However, you need to make sure that these opening moves to demonstrate credibility and friendliness, are not overstated, do not introduce bias, or that too much time is used, and the interviewee starts to become bored or restive.

The start of the interview needs to be shaped by you. It is your opportunity to minimise, wherever possible, the participant's uncertainties about providing data, establish their rights, and based upon this, hopefully, obtain informed consent. Box 10.13 provides a structure that you can adapt for starting your interviews.

Your assurance that confidential information is not being sought should make participants more relaxed and open about the data that they are willing to provide. Combined with assurances about anonymity, this should increase the level of confidence in your trustworthiness and reduce the possibility of interviewee or response bias. You can also demonstrate your commitment to confidentiality by not naming other individuals or organisations that have participated in your research, or by talking about data you have already obtained.

Approach to questioning

Your approach to questioning should reduce the scope for bias during the interview and increase the reliability of the information obtained. Your questions need to be phrased clearly, so the participant can understand them, and asked in a neutral voice tone. They

need to direct the participant to the research focus to elicit useful and interesting responses. These can be followed up using appropriately worded probing questions.

Questions and prompts that lead the participant, or which indicate bias on your part, therefore need to be minimised. Cairns-Lee et al. (2021) offer a typology of question features which may result in bias by potentially leading participants' responses:

1 Introduced content, where the interviewer uses terms that have not previously been used by the interviewee, resulting in the interviewee adopting the interviewer's terms;

2 **a** Presupposition of structure and context, where the structure or syntax of the question presupposes a situation exists which the interviewee has not already stated;

b Presupposition of a logical relationship, where the interviewer's question or prompt presupposes a cause-and-effect relationship that the interviewee has not already stated;

3 Evaluation where the interviewer expresses an opinion or raises a doubt or objection to something already stated by the interviewee.

These, along with example-biased questions and non-leading alternatives are outlined in Table 10.4.

Interviewing without introducing bias, however unintentional, is exceptionally difficult, even for experienced interviewers. Even though you may be able to spend time crafting your initial opening questions and potential prompts, there is no guarantee you will be able to follow these during your interview. The spontaneous nature of semi-structured and unstructured interview questioning will almost certainly result in unintentional leading as you will have little chance to craft your questions. It is therefore important to assess the cleanness of the language used in your questions and the impact in relation to the

Table 10.4 Leading interview questions

Leading feature	Example-biased question (nature of leading)	Example non-leading alternative
Introduced content	Can you outline the freedom you have in how you work on a project? [introduces the metaphor of 'freedom', and presupposes this is related to how work on a project]	How do you work on a project?
Presupposition of a situation	Is it hard to decide which project to work? [presupposes the participant can decide which project they work on]	Can you tell me anything else about project working? [followed by prompting if the participant raises the issue of deciding which project to work on]
Presupposition of a relationship	How did the change impact on your workload? [presupposes the change did impact on participant's workload]	And when the change happened, what happened to you? [followed by prompting if the participant says there was impact]
Evaluation	Presumably this job requires only basic skills? [evaluates the skills required as being only basic, undermining participant's own opinion of self]	And what kind of skills are needed for this job?

Source: Developed from Cairns-Lee, H., Lawley, J. and Tosey, P. (2021, online first)



Box 10.14 Focus on student research

(Mis)understanding terminology

Sven was conducting an interview with the European sales manager of a large multinational corporation. Throughout the interview the sales manager referred to the European Division. Sven assumed that the sales manager meant continental Europe. However, by chance, later questions revealed that, for this organisation, Europe extended into parts of Asia, including Turkey, the United Arab Emirates, Saudi Arabia, Kuwait and Israel. Until this point in the interview, Sven had assumed that these countries were the responsibility of another sales manager!

responses given (Table 10.2), and recognise explicitly where bias may have been introduced in your findings.

Long questions or those that are really made up of two or more questions (known as double-barrel questions) should also be avoided if you are to obtain a response to each aspect that you are interested to explore. Questions should also avoid overtly theoretical concepts or jargon since your understanding of such terms may vary from that of your participants. If theoretical concepts or specific terminology need to be used, you will have to check that both you and the participants have the same understanding (Box 10.14).

When asking questions, it is important that, wherever possible, these are grounded in the real-life experiences of your participants and are discussed using their terminology and words. One approach to questioning (and distinctive interview format) which makes use of key participant experiences is the **critical incident technique**. In this, participants are asked to describe in detail a critical incident or number of incidents that are relevant to the research question. A **critical incident** is defined as an activity or event where the consequences were so clear that the participant has a definite idea regarding the effects (Keaveney 1995).

It is also important to consider when to ask sensitive questions. Leaving these until near the end of an interview will provide your participant with some time to develop trust and confidence in you and to allay any doubts about your intentions, as Box 10.15 illustrates. This also affects the nature of questions you may ask early in an interview, as you attempt to build trust and gain your participant's confidence. When asking potentially sensitive questions, their wording needs to avoid any negative inferences related to, for example, responsibility for failure or error.



Box 10.15 Focus on student research

Establishing trust and asking sensitive questions

Sam recalls an occasion when her treatment by her participants altered as her group interview progressed. For the first hour of a two-hour interview, it appeared to her that the participants were convinced that she was really there to sell them a consultancy service. When they accepted that she was not going to try to sell them something, the mood of the interview changed, and they became much more relaxed and responsive to the questions that Sam wished to ask. It was at this point that she was able to ask and pursue more sensitive questions that could have led to the interview being terminated during the period when the participants mistrusted her motives.

Use of different types of questions

Formulating appropriate questions to explore areas in which you are interested is critical to achieving success in semi-structured or in-depth interviews. It is also important to word your questions factually and avoid introducing new content, presupposing a situation or relationship or offering a prior valuation (Table 10.4). We now discuss the types of question that you can use during semi-structured and in-depth interviews.

Open questions

The use of **open questions** allows participants to define and describe a situation or event. An open question is designed to encourage the interviewee to provide an extensive and developmental answer and can be used to reveal attitudes or obtain facts. It encourages the interviewee to reply as they wish. An open question is likely to start with, or include, one of the following words: 'what', 'how' or 'why':

'What is your current role in the organisation?'
'How does your organisation recruit new employees?'
'Why did your organisation open an office in Singapore?'

Probing questions

Probing questions are used to explore previous responses that are of significance to the research topic. Although often worded like open questions they request a particular focus or direction, often repeating some of the participant's own words, in the case of the next question 'successful':

'How do you know if this new marketing strategy is successful?'
'What happened next?'
'And why is that?'

Questions may also be left unfinished, for example:

'That's interesting . . . '
'Tell me more about . . . '

Probing questions can also be used to seek an explanation where the response does not reveal the reasoning involved or where you do not understand the interviewee's meaning:

'How do you plan to develop your use of digital marketing during the next two years?'
'That's interesting: do you mind telling me more about this relationship between the shift to the partnered product development model and the expansion of the established products division?'

The use of reflection may also help you to probe a theme. This is where you will 'reflect' a statement made by the interviewee by re-using some of their words, in the next question 'did not understand the need for advertising':

'Why do you think that these employees did not understand the need for advertising?'

The intention will be to encourage exploration of the point made without offering a view or judgement on your part. Where an open question does not reveal a relevant response,

you may also probe further using a supplementary question that rephrases the original question.

Specific and closed questions

These types of question may be used as introductory questions when you commence questioning about a particular interview theme:

'Could you tell me about the change to the pricing policy?'
'Can you outline the production process?'

They can also be used to obtain specific information or to confirm a fact or opinion (Section 11.3):

'How old are you?'
'How many people responded to the customer survey?'
'Has the old Central Region been merged with the Southern Region?'
'What is your opinion of the new training programme?'

Other means to prompt responses

There are several ways of prompting further answers to a question you have asked. These include:

- follow-up expressions, such as: 'Ah', 'Oh' or 'Um';
- short follow-up statements, such as: 'That's interesting';
- short follow-up questions, such as: 'Will you please tell me more?', 'When did that happen?' or 'What happened before?';
- short reflective questions where you repeat what you have just been told to reflect it back, such as: 'So that was when . . . ?' or 'So, they felt the investment had been worthwhile?';
- interpretation and extension questions, where you seek to explore the implications of an answer, such as: 'So what do you see as the implications of the move to online retailing?';
- silence, where the participant is effectively invited to fill this by offering more information;
- using these devices in combination to explore a theme, but you will need to be careful if you use this approach as it may be interpreted as being overbearing, stressful and confrontational. It will be more productive and ethical to maintain an even pace and respectful stance when asking questions.

Questions to avoid

In phrasing questions, remember that you should avoid using leading questions or proposing answers (Section 11.4). A classic example of a leading question is:

'So, tell me, is this the first time you have cheated in a test?'

Behaviour during the interview

Appropriate behaviour by the researcher should also reduce the scope for bias during the interview. Comments or non-verbal behaviour, such as gestures, which suggest

your own opinions, should be avoided. Rather, a neutral (but not an uninterested) response to the interviewee's answers should be used to ensure your own opinions do not bias responses. You should enjoy the interview opportunity, or at least appear to do so; any appearance of boredom on your part is hardly likely to encourage your interviewee!

Your posture and tone of voice may also encourage or inhibit the flow of the discussion. You should sit slightly inclined towards the interviewee and adopt an open posture, avoiding folded arms. This should provide a signal of attentiveness to your interviewee. Tone of voice can also provide a signal to the interviewee. You need to project interest and enthusiasm through your voice, avoiding any impression of anxiety, disbelief, astonishment or other negative signal.

Demonstrating attentive listening skills

The purpose of a semi-structured or in-depth interview is to find out and understand your participant's views, explanations and meanings. This type of interaction will not be typical of many of the conversations that you normally engage in, where those involved often compete to speak rather than concentrate on listening. You therefore need to listen attentively, attending to and being sensitive to your participants by spending the time needed to listen to them to build your understanding. However, you will need to keep your own opinions to yourself so as not to introduce bias.

It will be necessary for you to explore and probe explanations and meanings, but you must also provide the interviewee with reasonable time to develop their responses, and you must avoid projecting your own views.

Summarising and testing understanding

You can test your understanding by summarising responses provided by the interviewee using their own words and phrases as much as possible. This will allow your participant to confirm whether your summary is adequate, add further points, and correct your understanding where appropriate. This can be a powerful tool for avoiding a biased or incomplete interpretation. It may also offer a means to explore and probe the interviewee's responses further.

In addition, you may also ask the interviewee to read through the factual account that you produce of the interview (Section 5.11). Where the interviewee is prepared to undertake this, it will provide a further opportunity for you to test your understanding and for the interviewee to add any further points of relevance that may not previously have been apparent. Beware, participants may wish to amend their grammar and expressions to reflect written language rather than their spoken words.

Dealing with difficult participants

Inevitably, during your interviews you will meet some participants who are difficult to interview. It is imperative that you remain polite and do not show any irritation. Although it is impossible for us to highlight all possible difficulties, the most common difficulties are summarised in Table 10.5, along with suggestions about how to deal with them. However, while reading Table 10.5, the best advice we can give is to undertake practice interviews in which a colleague introduces one or more of these 'difficulties' and you have to deal with them!

Table 10.5 Difficult interview participants and suggestions on how to address them

Recognised difficulty	Suggestion
Participant gives only monosyllabic answers, these being little more than 'yes' or 'no'	Reasons for this are varied. If it is due to limited time, or worries about anonymity, then this can be minimised by careful opening of the interview (Box 10.12). If the participant gives these answers despite such precautions, try phrasing your questions in as open a way as possible; also use long pauses to signify you want to hear more.
Participant repeatedly provides long answers that digress from the focus of your interview	Although some digression should be tolerated, as it can lead to aspects in which you are interested, you will need to impose more direction. This must be done subtly so as not to cause offence, such as by referring to an earlier relevant point made and asking them to tell you more, or requesting that they pause so you can note down what they have just said.
Participant starts interviewing you	This can suggest that you have created rapport. However, you need to stress that you are interested in their opinions and that, if they wish, they can ask you questions at the end.
Participant is proud of their status relative to you and wants to show off their knowledge, criticising what you do	This is extremely difficult ,and you will have to listen attentively and be respectful. Remember you are also likely to be knowledgeable about the research topic, so be confident and prepared to justify your research and the research design you have chosen.
Participant becomes noticeably upset during the interview and, perhaps, starts to cry	Another difficult one for you. You need to give your participant time to answer your question and, in particular, not do anything to suggest that you are feeling impatient. If your participant starts crying or is obviously very distressed, it is probably a good idea to explain that the question does not have to be answered. Do not end the interview straight away as this is likely to make the participant even more upset.

Source: King (2004); authors' experiences

Recording data

Where possible we believe it is beneficial to audio record an interview, and also make notes as it progresses. Using both methods to record interview data has several advantages. Notes provide a backup if the audio recording does not work. Making notes can help you to maintain your concentration, formulate points to summarise back to the participant to test your understanding and devise follow-up probing questions. Note taking demonstrates to your participant that their responses are important to you. It also allows you to record your own thoughts and any events that would not be evident from the audio recording. For example, if you think there may be a relationship between themes that you wish to explore later, if your interviewer uses a facial expression or provides another non-verbal cue, or if someone enters the room, you can make a note about each of these. Most people have their own means of making notes, which may range from an attempt to create a verbatim account to a diagrammatic style that records key words and phrases, perhaps using mind mapping (Section 2.3).

The task of note making in this situation will be a demanding one. As you test your understanding of what your participant has told you, this will allow some time to complete your notes concurrently in relation to the aspect being discussed. Most participants recognise the demands of the task and act accordingly. For example, Adrian recalls one participant who paused at the end of the main part of each of his answers to allow notes to be completed before adding some supplementary data that could also be noted down. However, the actual interview is not the occasion to perfect your interviewing skills, and we advise you to practise in a simulated situation: for example, by watching an interview on television and attempting to produce a set of notes.

To optimise the value from the interview you should create a full record, including contextual data as this will help you interpret what your participants say and when you write about your methods in your project report (Box 10.16). If you cannot do this immediately after the interview, this should be done as soon as possible. There is the possibility that



Box 10.16 Focus on research in the news

The last mogul: an interview with Universal Music's Lucian Grainge

By Ann Nicolaou and Andrew Edgecliffe-Johnson

Within this piece drawing on an interview with Lucian Grange, the authors provide a considerable amount of contextual detail:

Somehow, he [Lucian Grainge] emerged with no significant lung damage. He looks healthy and upbeat as he tells the story publicly for the first time, perched at the head of a conference table that could easily fit two-dozen staff. Today it is just us and some Purell sanitiser bottles, in the type of work-from-home paradise that wealthy CEOs have enjoyed for the past year and a half. The outdoor patio where we sit is flanked by orange and lemon trees, wafting citrus through the air. It's sunny, but not too sunny. The temperature hovers around 24C. A light breeze blows in from the Pacific Ocean. Peak California.

Grainge sizes up the day ahead of him, peppering an assistant with questions. 'We've got the team meeting at 11. Then I have a Zoom. And apparently, we're doing photos at 1, can that be quick? I'm not doing an album art cover. And Abel is coming at 2, right? But that is late for lunch, so we will eat before.' He drifts into a story about a famous pop star showing up at 11 pm to a 7 pm dinner at Nobu. 'The reality is in California, kitchens close at 9.40. They only keep the kitchen open because they know that you're coming with someone.'

There is a vulnerability and scrappiness about Grainge, even as he perches at the top of the business. 'I love to be underestimated' is a phrase he repeats on several occasions. Asked whether falling gravely ill from coronavirus has changed him, he says 'No' definitively before continuing. 'I've been through quite a lot. You don't get from nowhere, to where I am, without always trying to prove yourself. What happened yesterday, happened yesterday. I love the next move and I love winning. I don't romanticise the past.'



Source: Extract from 'The last mogul: an interview with Universal Music's Lucian Grainge' *Financial Times,* 16 September 2021. Copyright © 2021 The Financial Times Ltd

you may mix up data from different interviews, where you carry out several of these within a short period of time and you do not complete a record of each one at the time it takes place, compromising the trustworthiness of your data. In addition to your notes from the actual interview, you should also record the following **contextual data**:

- the location of the interview (e.g. the organisation, the place);
- the date and time;
- the setting of the interview (e.g. was the room quiet or noisy, could you be overheard, were you interrupted?);
- background information about the participant (e.g. role, post title, gender);
- your immediate impression of how well (or badly) the interview went (e.g. was the participant reticent, were there aspects about which you felt you did not obtain answers in sufficient depth?).

You may be wondering how, if you are recording these data, you can still ensure the anonymity of your participants where this has been promised. As we outlined in Section 6.7, the best course of action is to ensure that your data are completely and genuinely anonymised. To help achieve this you should store the contextual data separately from your interview transcripts. We suggest that you should only be able to link these two sets of data by using a 'key', such as an impersonal code number. Where it is absolutely necessary to retain a 'key' that allows participants to be linked to their data using their real name, this 'key' should be kept securely and separately, not by those who control the data.

Audio recording the interview where permission is given, making notes, compiling a full record of the interview immediately or soon after it has occurred and producing a set of contextual data and related memos (Chapter 13) are all means to control bias and produce reliable data. Most interviewers audio record their interviews, where permission is given. Audio recording interviews has both advantages and disadvantages, and these are summarised in Table 10.6.

Permission must be granted before starting to audio record an interview. You should explain why you believe this is beneficial and to provide guarantees about your participant's rights over its use. Where it is likely to have a detrimental effect, it is better not to use a recorder. However, most participants adapt quickly to the use of the recorder. It is more ethical to allow your them to control the recorder so, if you ask a question that they are prepared to respond to, but only if their words are not audio recorded, they have the option to switch it off (Section 6.7). It will inevitably be necessary to make notes in this situation.

Table 10.6 Advantages and disadvantages of audio recording the interview

Advantages	Disadvantages
Allows the interviewer to concentrate on questioning and listening	May adversely affect the relationship between interviewee and interviewer (possibility of 'focusing' on the audio recorder rather than the interview process)
Allows questions formulated at an interview to be accurately recorded for use in later interviews where appropriate	May inhibit some interviewee responses and reduce reliability
Can re-listen to the interview, especially during data analysis	Possibility of a technical problem
Accurate and unbiased record provided	Time required to transcribe the audio recording (Section 13.4)
Allows direct quotes to be used	
Permanent record for others to use	

Source: authors' experience.

Evaluating your interview practice

After each interview it is worth making brief notes regarding how you felt it went and any specific issues. Subsequently you can listen to your recording and evaluate your interviewing practice (Section 10.5). The checklist in Box 10.17 is designed primarily to help you conduct one-to-one face-to-face interviews. However, many of the questions asked are also applicable to other interview modes and media.

Box 10.17 Checklist

To help you conduct one-to-one face-to-face interviews

Appearance at the interview

- ✔ How will your appearance at the interview affect the willingness of the participant to share data?

Opening the interview

- ✔ How will you open the interview to gain the confidence of your participant?
- ✔ What will you tell your participant about yourself, the purpose of your research, its funding and your progress?
- ✔ What concerns, or need for clarification, may your participant have?
- ✔ How will you seek to overcome these concerns or provide this clarification?
- ✔ In particular, how do you intend to use the data to which you are given access, ensuring, where appropriate, its confidentiality and your participant's anonymity?
- ✔ What will you tell your participant about their right not to answer particular questions and to end the interview should they wish?
- ✔ How will you explain the structure of the interview?

Asking questions and behaviour during the interview

- ✔ How will you use appropriate language and tone of voice, and avoid jargon when asking questions or discussing themes?
- ✔ How will you word open questions cleanly to obtain relevant data?
- ✔ How will you word probing questions cleanly to build on, clarify or explain your participant's responses?
- ✔ How will you avoid asking leading questions that may introduce forms of bias?
- ✔ Have you devised an appropriate order for your questions to avoid asking sensitive questions too early where this may introduce participant bias?
- ✔ How will you maintain a check on the interview themes that you intend to cover and to steer the discussion where appropriate to raise and explore these aspects?
- ✔ How will you avoid overzealously asking questions and pressing your participant for a response where it is clear that they do not wish to provide one?
- ✔ How will you avoid projecting your own views or feelings through your actions or comments?
- ✔ How might you identify actions and comments made by your participant that indicate an aspect of the discussion that should be explored to reveal the reason for the response?
- ✔ How will you listen attentively and demonstrate this to your participant?
- ✔ How will you summarise and test your understanding of the data that are shared with you to ensure accuracy in your interpretation?
- ✔ Where appropriate, how will you deal with a difficult participant while remaining polite?

Recording data during the interview

- ✔ How will you record the interview data? Where this involves using an audio recorder, have you requested this and provided a reason why it would help you to use this technique?
- ✔ How will you allow your participant to maintain control over the use of an audio recorder, where used, if they wish to do this?
- ✔ Have you practised interviewing to ensure you can carry out all tasks, including listening, note taking and identifying where you need to probe further?

Closing the interview

- ✔ How will you draw the interview to a close within the agreed time limit and thank the participant for their time and the data they have shared with you?

10.8 Conducting one-to-one online interviews

Interviews may also be conducted electronically via the Internet using video communication technologies, email or texts. These are collectively referred to as either **online interviews** or **electronic interviews**. A distinction is made between electronic interviews conducted in real time (**synchronous**) and those not conducted in real time (**asynchronous**). An **asynchronous online interview** will be conducted through exchanges of text. This will use email or text messaging but will involve gaps in time or delays between the interviewer asking a question and the participant providing an answer (Figure 10.4). In this way it is sometimes partly undertaken offline. A **synchronous online interview** will be conducted in real time using email, instant messaging or video communication technologies (Figure 10.4). In this section we briefly discuss asynchronous email and text interviews, and synchronous email and video-based interviews and the advantages and disadvantages associated with each.

Asynchronous email interviews

An email interview is generally described as asynchronous because it is not necessary to ask questions and answer these sequentially without any time gaps. However, it may be possible to conduct an email interview in one period, where the interviewee responds immediately to each question and emails continue to be exchanged until the interviewer draws it to a close and thanks the interviewee for her/his participation. This may be after a pre-arranged period has been reached.

Using email interviews

Each **email interview** consists of a series of emails each containing one or small number of questions and the replies to these. Although you can send one email containing a series of questions, this would really be an online questionnaire (Sections 11.2 and 11.6). After making contact and obtaining agreement to participate, you initially email a question or small number of questions, or introduce a topic to which the participant will (hopefully) reply. You then respond to each reply by asking further questions, raising points of clarification and pursuing ideas that are of further interest. Email interviews may last for some time where there is a delay between each question being asked and an answer being received. This can be advantageous in terms of allowing time for reflection on the part of the interviewer, in forming appropriate questions, and the participant, in terms of providing a considered response, but it may also mean that the interviewee may lose focus and interest so that the email interview ends without all questions being answered. Like all forms of text-based interview data are recorded as they are typed, removing problems

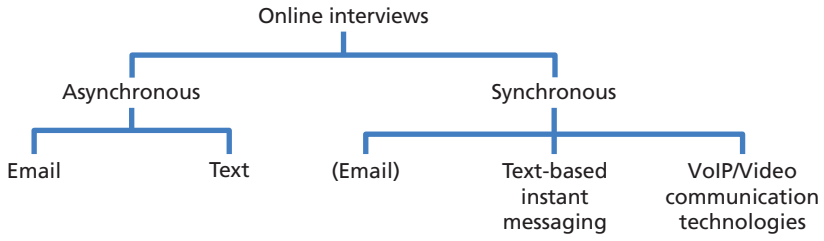


Figure 10.4 Forms of online interview

associated with other forms of recording and transcription such as cost, accuracy and participants' apprehension.

Synchronous text-based interviews

An electronic interview conducted by text-based instant messaging is synchronous because the technology uses real-time transmission. However, there still may be time gaps between the interviewer asking a question and the interviewee providing a response, so it may extend over several periods when both are online. For research topics where the researcher wishes to ask personal or sensitive questions, the anonymity offered by the interviewer and interviewee typing synchronously to each other is likely to produce reliable and useful data. For these types of research topic, the lack of face-to-face contact may prove to be an advantage rather than a disadvantage (Pearce et al. 2014).

Video-based interviews

Video-based interviews using video conferencing or telephony have become far more widely used since the Covid-19 pandemic. They may be conducted using a Voice over Internet Protocol (VoIP) or web conferencing service between two or more people. Many of the associated platforms can also be used to produce an audio-visual recording of the interview and an initial transcript (which will need checking) providing that the research participant consents to this. However, as platforms differ in their functionality, it is important to ensure that the one you intend to use meets your and your intended participants' needs (Lobe et al. 2020).

Using video-based interviews

Using this technology has significant advantages where the population you wish to interview are geographically dispersed, although you may need to be cognisant of you and your participant being in different time zones. However, it is limited to those with access to the necessary technology and, in some instances, permission to install the software. In addition, responses are likely to be shorter and less detailed than for face-to-face interviews (Carter et al. 2021). Alongside concerns about the security of data on these platforms (Lobe et al. 2020), there are several aspects associated with using video interviews that need to be considered. These include (Carter et al. 2021):

- ensuring that the proposed technology is accessible by both yourself and the participant and will allow the desired level of interaction;
- deciding how you wish the chat and mute functions to be set at the start of the interview and subsequently whether you wish participants to be able to access or control them;
- (for group interviews) deciding whether to use break-out rooms for small sub-group discussions;
- deciding whether to allow screen sharing;
- ensuring participants' usernames are switched off to preserve and they can use virtual or blurred backgrounds to help preserve anonymity;
- considering including questions about the use of the online platform to refine your methodology.

In addition to the practical advice offered in Box 10.18 online interviews using video conferencing have their own set of ethical issues that you will need to consider (Sections 6.6 and 6.7).



Box 10.18 Checklist

Advice for interviewing undertaking interviews video conferencing

- ✔ Follow the advice in Box 10.17 as appropriate.
- ✔ Practise by recording yourself and evaluate your questions for cleanliness of language.
- ✔ Make sure the participant knows the weblink (and password) and date and time for the video conference prior to the interview.
- ✔ Do not show meeting identifiers or passwords in the email subject line.
- ✔ Ensure participant(s) need a password to join the meeting.
- ✔ Ensure the location you are using has strong and consistent Internet access.
- ✔ Test your equipment prior to the interview and, if possible, have a back-up in place.
- ✔ Manage participants to prevent others to joining the 'meeting' without an invitation.
- ✔ Use the waiting room to screen participants.
- ✔ Only allow participants to join the 'meeting' after the host (interviewer) has arrived.
- ✔ Subject to permission being granted, video record and automatically transcribe the 'meeting'.
- ✔ Ensure data are not stored within the video conferencing app by turning off participant screen-sharing and saving and storing all recordings directly (with password protection) in accordance with your university's data management protocol.

10.9 Conducting one-to-one telephone interviews

Most semi-structured or in-depth one-to-one interviews occur either face-to-face or online. However, they may also be conducted by telephone, using either a voice/listening-only mode or a video calling service, highlighting the blurred boundary between telephone and online media. In this section we focus on voice/listening only mode, contrasting such telephone interviews with face-to-face interviews.

Telephone versus face-to-face

The purpose of your interview will be broadly the same regardless of whether it is conducted by telephone or face-to-face. However, the way in which an interview is conducted is likely to affect its outcomes. Irvine et al. (2012) compared the nature of spoken interactions in two sets of semi-structured interviews: six conducted by telephone and five carried out face-to-face. The aim of their study was to evaluate the impact of the interview medium on the nature of spoken interactions, based on actual data that had been transcribed systematically. Their analysis revealed five areas of interactional differences between telephone and face-to-face interviews.

Telephone interviews were generally shorter than face-to-face ones although there was a great deal of variation between these interviews. Possible explanations relate to less rapport developed and greater effort required, with the implication that telephone interviews may be less suitable for research studies that are designed to rely on richly detailed and in-depth accounts. In telephone interviews, participants spoke for less time and generally gave shorter answers, being more likely to ask if their responses were adequate. This may be related to lack of visual cues, reduced scope to discuss the purpose of the research at the start of interviews, less rapport developed and greater task orientation in this interview mode. Conversely, while telephone participants spoke for less time, the researcher spoke for slightly more, markedly altering the balance between the two.

Telephone participants were slightly more likely to ask the researcher to clarify or repeat her questions. This did not mean they experienced difficulty in their understanding; instead, this may be explained by the quality of the phone connection, the effort and concentration required in a listening-only mode of interview and resulting fatigue, and the need for interview questions to be phrased clearly and succinctly.

In face-to-face interviews, the researcher was more likely to interact with the participant during an answer, such as by summarising the answer to show understanding. This may be due to greater rapport being developed during face-to-face interviews and because during telephone interviews the interviewer needed to concentrate more on listening given the absence of non-verbal prompts or signals. Researchers using face-to-face interviews used verbal acknowledgements (e.g. by saying 'Yeah', 'Ah', 'Oh', 'Um', etc.) to the interviewee more frequently than in telephone interviews. This appears surprising as use of verbal acknowledgements may be expected to be more frequently used in telephone interviews to compensate for the lack of visual contact. Possible explanations suggested may be because of the need to concentrate on listening during telephone interviews and also because the researcher used the lack of visual contact to concentrate on taking notes.

Telephone interviews are associated with several disadvantages. Vogl (2013) places these disadvantages into two broad categories: the limited scope for personal contact, and the reliance on verbal and paralinguistic signals during a telephone interview. We discuss each of these briefly.

Personal contact when using voice/listening during a telephone interview is limited. A telephone interview may be perceived as impersonal and relatively anonymous, and it may be more difficult to establish rapport and trust as a result. Conducting a telephone interview will also be difficult if your participants are uncomfortable using this medium. This may lead to issues of (reduced) reliability where your participants are reluctant to engage in an exploratory discussion by telephone, or even a refusal to take part.

Telephone interviews place reliance on verbal and paralinguistic signals. Such interviews conducted using voice/listening-only exclude visual cues between participant and interviewer aiding understanding. Verbal signals refer to what the interviewer or participant utters, such as:

'that's interesting, may I ask you to say more about . . . ';
'I am not sure I understand your question, please can you rephrase it?'

Paralinguistic signals refer to any vocal effects used by a speaker that affect the way words are spoken or sounds are used, and which often convey meaning in their own right. Such effects include voice quality, tone or pitch of voice, rhythm or rate of speech, stress placed on individual words, syllables or sounds and on groups of words known as prosodic or sentence stress, and sounds made using the breath such as a sigh or use of 'hmm' or 'mm'. The focus here is on how things are said as opposed to just what is being said.

Using telephone interviews

Using the telephone to conduct an interview means in the absence of visual cues, you as interviewer will need to concentrate more on how something is said as well as what is said to be sensitive to any nuances used by the interviewee. Listening only may help to provide focus in this interaction but without the scope to recognise, explore and understand visual signalling this will be demanding.

There are invariably practical issues that need to be managed when using telephone interviews. These include your ability to control the pace of a telephone interview and to record data. Conducting an interview by telephone and taking notes is difficult and

demanding. The normal visual cues that allow your participant to control the flow of data shared are absent. As the interviewer, you will be unable to witness the non-verbal behaviour of your participant, which may adversely affect your interpretation of how far to pursue a particular line of questioning. You may also encounter difficulties in developing more complex questions in comparison with a face-to-face interview situation.

Conducting one-to-one interviews by telephone can offer advantages associated with access, speed and lower cost. You may be able to interview participants with whom it would otherwise be otherwise impractical due to the distance and prohibitive costs involved and time required. Even where 'long-distance' access is not an issue, conducting interviews by telephone can still offer advantages associated with speed of data collection and lower cost. It may also be safer for the researcher to conduct interviews by telephone in some circumstances.

For some (Holt 2010; Trier-Bieniek 2012), the limited scope for personal contact and reliance on verbal and paralinguistic signals are not considered disadvantageous. Not meeting participants can support the production of open and full accounts due to the anonymity of a voice/listening-only mode reducing inhibitions to discuss very personal matters. The use of the telephone can also allow participants to choose a suitable time of day to be interviewed, to stop an interview in progress when this became unavoidable and to rearrange a time for it to continue, and to move around their environment when necessary to avoid being overheard.

As with all interviews, establishing rapport is important to achieve in-depth answers in telephone interviews. However, there may be less small talk to build such rapport in the initial stage of a telephone interview (Irvine 2011). This more task-oriented approach can set the mood for what follows, leading to a quicker pace and less depth. In those telephone interviews where greater rapport is established, more in-depth answers are likely and greater exploration of these is possible. Irvine (2011: 215) suggests that telephone interviewers 'consider ways of establishing a more relaxed conversational style prior to asking specific interview questions'.

Audio recording of telephone interviews is usually relatively straightforward with a mobile phone, if you have your participant's consent. However, for some makes of phone you may need to download a separate app. After your interview we recommend you evaluate your interview practice (Section 10.5). Your reflections and notes should help you to improve your approach to your next telephone interview. rapport and trust.

10.10 Conducting group interviews and focus groups

Semi-structured and in-depth interviews may also be conducted as group interviews both online and face-to-face, one or more interviewers asking questions and records responses with a group of participants. Typically group interviews (and focus groups) involve between 4 and 12 participants, the precise number depending upon the nature of the participants, the topic matter and the skill of the interviewer. Some suggest a narrower range of participants of between 6 and 8, especially if conducted online. Inevitably, the more complex the subject matter the smaller the number of interviewees. Participants are normally chosen using non-probability sampling, often with a specific purpose in mind (Section 7.9), such as they are typical of the group being researched or they represent those who are critical to a particular operation. For many group interviews the underlying reason is that you believe you will learn a great deal from these specific individuals, the group's dynamics adding depth to the data as shared meanings emerge (Dodds and Hess 2020). Krueger and Casey (2015: 43) refer to such participants as being 'information rich'.

If using group interviews, or specifically focus groups, consideration of the following issues is helpful.

- Where your research project (or part of it) occurs within an organisation, the request to participate in a group interview may be received as an instruction rather than allowing them choice about whether to take part. This often occurs where the request is sent in the name of a manager or because of your own position in the organisation, and is likely to lead to some non-attendance or to unreliable data. In our experience, participants often welcome the chance to 'have their say'. However, you need to exercise care in wording the request that is sent to them to take part. You will also need to exercise similar care in your introduction to the group when the interview occurs, providing a clear assurance about confidentiality.
- Once your sample has been selected, participants should be grouped so as not to inhibit each individual's possible contribution. This may be due to perceptions about status differences or because of the dominance of certain individuals. We would advise using a series of horizontal slices through an organisation so that, within each group, participants have a similar status and similar work experiences. (Using a vertical slice would introduce perceptions about status differences and variations in work experience.) In this way, group interviews can be conducted at several levels within an organisation. A reference may be made about the nature of the group to provide reassurance, and you may consider asking people to introduce themselves only by their first name without referring to their exact job.
- To realise the benefits of a group interview, it is important to encourage every person to participate. This commences when you ask each person to introduce himself or herself. You may also need to encourage contributions by drawing group members into the discussion, particularly where some appear reluctant to take part. This needs to be managed sensitively and participation is likely to increase naturally as group members become more familiar with each other. Occasions may occur during a group interview when participants talk over one another, and you will need to manage the flow of contributions while ensuring that each participant has an opportunity to offer her or his contribution. Where one or two people dominate the discussion, you should seek to reduce their contributions by encouraging others:

  'What do you think, Yuksel?'
  'How does Emma's point relate to the one that you raised, Kristie?'
  A question posed more generally to other group members should also have the effect of inhibiting the contribution of a dominant member:
  'What do other people think about this?'
  'What are your views of Johan's suggestion?'

As interviewer you can manage the discussion.

- You can try to reduce the contribution of a dominant member by temporarily minimising eye contact with them and draw others into the discussion by looking or gesturing in their direction.
- You will need to remain attentive throughout the interview, appearing friendly and relaxed in your approach but also purposeful and interested, encouraging each member to take part and providing opportunities to listen to and discuss contributions.
- You will need to ensure that participants understand each other's contributions and that you develop an accurate understanding of the points being made. Asking a participant to clarify the meaning of a particular contribution, where it has not been understood,

and testing understanding through summarising should help to ensure this: 'Can you explain what you mean by . . . ? [repeat phrase just said by participant]

- You should choose a neutral location rather than, say, in a manager's office, where participants may not feel relaxed. There should be no likelihood of interruption or being overheard.
- You should, where possible, arrange the seating in a circular fashion so that everyone will be facing inward and so that they will be an equal distance from the central point of this circle.
- Finally, students often ask, 'When will I know that I have undertaken sufficient group interviews or focus groups?' Writing about focus groups, Krueger and Casey (2015) suggest that you should plan to undertake three or four group interviews with any one type of participant. If after the third or fourth group interview you are no longer receiving new information, you will have reached **saturation**, in which case you will have heard the full range of ideas.

The demands of conducting all types of group interview, including focus groups, and the potential wealth of ideas that may flow from them mean that it is likely to be difficult to manage the process and note key points at the same time (Box 10.19). We have managed to overcome this in two ways: by audio recording group interviews or using two interviewers. To audio record a group interview you will need the consent of each participant. Where two interviewers are used, one person facilitates the discussion, and the other person makes notes. We would recommend that you use two interviewers, even if you are audio recording the group interview, as it will allow one interviewer to concentrate fully on managing the process while the other ensures the data are recorded. As with one-to-one interviews, your research will benefit from the making of notes about the nature of the interactions that occur in the group interviews that you conduct. We would not advise you to undertake more than one group interview in a day on your own because of the need to write up your notes immediately and the danger of forgetting or confusing data.



Box 10.19 Focus on management research

Using group interviews

Dodds and Hess (2020) undertook nine group interviews with vulnerable people and their support group during the Covid-19 pandemic. The interviews explored a sensitive topic, youth alcohol consumption and family communication, and were moved online during the pandemic. Initially, group interviews were conducted face-to-face in the participants' own homes, but to comply with social distancing policies they were undertaken using an online video conferencing platform. For both face-to-face and online group interviewers there were two researchers, one acting as interviewer and the other as a notetaker.

The researchers found online group interviewers were easier to manage than face-to-face group interviews in terms of group dynamics. Shy participants were able to hide partially out of camera giving them a perceived safety barrier and enabling them to speak without having to look directly at the interviewer. In comparison to face-to-face interviews, noticeably more sensitive information was shared around drinking behaviour and personal experiences with alcohol when interviewed online. Online groups interviews were considered engaging and convenient and easy to set up. However, while communication was clear with both groups, the researchers felt conversations flowed better in face-to-face group interviews. They also noted participants were worried about privacy issues online.

Using group interviews

In a group interview your role is to ensure that all participants have the opportunity to state their points of view in answer to your questions and to record the resulting data. The interview tends to be relatively unstructured and fairly free flowing in terms of both breadth and depth of topics. The onus is on you to explain the interview's purpose, to encourage participants to relax, and to initiate, encourage and direct the discussion. You will need to both encourage participants to provide answers to questions, and allow them to range more freely in discussion where this may reveal data that provide you with important insights. Thus, once you have opened the interview (Box 10.12), and the discussion is established, you will need to manage it carefully.

Group interactions can lead to a highly productive discussion as participants respond to your questions and evaluate points made by the group. However, as the opportunity to develop an individual level of rapport with each participant is less (compared with a one-to-one interview), a group effect where certain participants effectively try to dominate the interview may emerge. Some participants may agree publicly with the views of others, while privately disagreeing, any reported consensus, in reality, being a view that nobody wholly endorses and nobody disagrees with (Stokes and Bergin 2006). You therefore need to test the validity of emergent views by trying to encourage involvement of all group members and pursuing the interview's exploratory purpose using open and probing questions. A high level of skill will be required for you to be able to conduct this type of discussion successfully, as well as to try to record its outcomes.

Despite this reference to the potential difficulties of using group interviews, there are distinct advantages arising from their use (Box 10.19). The presence of several participants allows a breadth of points of view to emerge and for the group to respond to these views. A dynamic group can generate or respond to a number of ideas and evaluate them, thus helping you to explore or explain concepts. You are also likely to benefit from allowing your participants to consider points raised by other group members and to challenge one another's views. However, while group interviews, and in particular focus groups, are able to identify principal issues accurately, they are not able to provide the depth and detail in relation to specific issues that can be obtained from individual interviews (Stokes and Bergin 2006).

Group interviews can also help to identify key themes that will be used to develop items that are included in a subsequent questionnaire. For example, the initial use of group interviews can lead to a 'bottom-up' generation of concerns and issues, which subsequently inform a questionnaire's content.

Using focus groups

Focus groups are well known because of the way they have been used by political parties to test voter reactions to particular policies and election strategies, and in market research to test reactions to products, as well as being used in academic research (McNaughton and Myers 2007). A **focus group**, sometimes called a 'focus group interview', is a group interview that focuses upon a particular issue, product, service or topic by encouraging discussion among participants and the sharing of perceptions in an open and tolerant environment (Krueger and Casey 2015). Participant interaction is a key feature of focus group design, although this focus on enabling interactive discussion is used for two distinct purposes.

Positivist or critical realist researchers use the focus group to encourage interactions between participants as an effective means to articulate pre-held views about a particular issue or topic. The aim of using focus groups in this way is to reveal these pre-held views. Interpretivist researchers use focus groups to construct meanings through social

interactions and sense making about a topic. The aim of using focus groups for this purpose relates to the ability to analyse how participant interactions and group dynamics lead to the construction of shared meanings (Belzile and Oberg 2012).

If you are running a focus group, you will probably be referred to as the **moderator** or 'facilitator'. These two labels emphasise the dual purpose involved in running a focus group, namely to:

- keep the group within the boundaries of the topic being discussed;
- generate interest in the topic and encourage discussion, while at the same time not leading the group towards any particular opinion.

In some focus groups, the moderator's role may be less evident in comparison to the researcher's role in other group interviews. This is because the moderator's role is to facilitate and encourage group interaction. However, while some parts of a focus group may be largely non-directive, other parts may require greater direction from the moderator.

The purpose of a focus group is likely to affect the level of interviewer-led structure and intervention that is required. Focus groups used to reveal participants' views are likely to be associated with greater structure; those used to study how participants interact are likely to be associated with less structure. Exploratory focus groups are likely to be more unstructured, while those with a theoretical, impression-gathering, diagnostic or explanatory purpose are likely to be semi-structured.

Focus group participants are selected because they have certain characteristics in common that are relevant to the topic being discussed. Group discussions may be conducted several times, with similar participants, to enable trends and patterns to be identified. The size of a focus group may vary according to the nature of the topic. A focus group designed to obtain views about a product is likely to be larger than one that explores a topic related to a more emotionally involved or sensitive construct, such as attitudes to performance-related pay or the way in which employees rate their treatment by management. You may also choose to use smaller groups as you seek to develop your competence in this interviewing technique.

10.11 Conducting visual interviews

Most interviews are based on people talking and listening, even though face-to-face interviews also contain a visual dimension, where visual cues are used to guide their conduct and aid understanding (Section 10.7). The subordinate status of this visual dimension in conventional interviews is altered when the visual aspects are included to create a distinctive format. In a **visual interview**, visual images are used to elicit interviewee accounts and interpretations and stimulate dialogue, the visual becoming fully integrated in the production of participant meanings.

One approach used in visual interviews is **photo-elicitation**. In this technique a participant is given one or more photographic or digital images to interpret. The participant will be asked to focus on and explain the objects or activity in the image from their perspective, constructing meanings related to the image (Box 10.20). At its simplest, this means that you provide a participant with an image to elicit a story. Settings shown in many images will be familiar to the participants and can be used to elicit an insider's verbal account from therm. These images may either be found from those that already exist or created by the researcher or created by research participants (Box 10.20).

Visual interviews can use other types of images to stimulate dialogue and elicit participant accounts and interpretations. We discuss different types of visual image in Section 9.7.



Box 10.20 Focus on management research

Use of photo-elicitation based on participant photography

In a study published in the *International Journal of Consumer Studies,* Vermaak and de Klerk (2017) used a photo-elicitation technique in visual interviews based on participant photographs. The focus of their study was to explore millennial consumers' experiences of using retail dressing rooms. The researchers conducted two sets of research interviews with a purposive sample of female consumers aged between 18 and 25 years, who were given the task of shopping for clothes.

The first set of interviews explored consumer expectations about using retail dressing rooms. At the end of this first interview, each participant was provided with a digital camera to take photographs of any feature of a dressing room that positively or negatively impressed her in a retail store she visited.

Each participant's photographs were then used by the researchers during a second interview to elicit responses about this experience. Vermaak and de Klerk (2017: 13) report that they used questions to elicit responses from participants, like: 'Why did you take this photo?' or 'What did you think about this dressing room?' Responses to these questions were explored by using probing questions such as, 'Why do you say so?'

These may also be found or created by the researcher, or created by the participant, before being used in a visual interview. We now discuss visual interviews based on researcher-found or created images and visual interviews based on participant-created images.

Using researcher-found or created images

In this format of visual interview, you introduce visual images during the interview and asks the participant to interpret what they see. This type of visual elicitation may also be used during one-to-one interviews and group interviews both online and face-to-face. One digital image may be introduced at a time or a few images may be presented simultaneously. An individual image may show a particular situation or aspect related to the research topic. It may be an image of the research setting. Each image presented individually will be intended to elicit interpretation and stimulate discussion. Several images shown simultaneously will represent different attributes of a topic. For example, in consumer research participants could be asked to discuss the relative merits of the attributes shown, possibly being requested to choose from amongst these or to rank them.

You may also use visual images to gather contextual details or background information about the research setting. These will allow contextual and mundane details to be seen, discussed and evaluated, which would often be missed in a conventional talking and listening interview. You may also introduce other types of visual image such as an organisation chart to be able to understand the broader context within which the research is being conducted.

Visual interviews can use images of the research participants taken by the researcher. These images are explored using a particular photo-elicitation technique known as **autodriving**. This technique was developed and refined by Heisley and Levy (1991). The term autodriving refers to an informant interview that is 'self-driven' by the participant talking about visual images of themself. You will initially enter the setting where your research participant lives, works or conducts their daily activities and observe them taking visual images that capture aspects of the activity being observed. Images you selected to represent key aspects of this activity will then be used in an interview with the participant who features in them, to elicit their interpretations of what is shown. Autodriving captures the participant's actions and interactions in the setting placing them in the role of an

outsider looking in on a scene in which she or he takes a part. The interviewer uses these visual images to elicit the participant's insider perspective of what is shown, producing insights that would be unlikely to be revealed using any other method.

Using participant-created images

A more participatory approach will range from a researcher encouraging participants to create their own images, which can then be explored in visual interviews (Box 10.20), through collaborative forms of visual research in which participants are involved in different aspects of the research process, including taking, selecting, analysing and interpreting images, to the use of a participant-led approach known as photovoice (Section 9.7). The level of participation increases over this range of possibilities from passive participation to active and fully engaged participation.

We discussed participatory approaches in Section 9.7, including the use of participatory video, participatory audio and participant photography. These approaches involve research participants using their mobile phone or being provided with a camera and given the freedom to choose what to record related to the focus of the research. A further participatory approach exists that may be used before or during the conduct of a visual interview. This is **participant drawing** where a participant is asked to create a drawing using paper and pencil to represent her or his feelings about an issue, or some aspect of his or her experience (Box 10.21). Techniques of participant photography or drawing are

Box 10.21 Focus on student research

Using participant drawing in an interview

As part of her research Heather wanted her participants to reflect on what they saw as the essence of leadership. She decided to ask each of them to 'sketch' what they considered to be the essence of leadership at the start of their interview. Although some participants were initially reluctant to draw, protesting that their drawings would not be 'any good', offering colour pens and paper to each participant resulted in 30 drawings. Most were relatively quickly sketched in 5 to 10 minutes. Despite the initial hesitation from some participants, most were pleased with their sketches. Heather used each participant's drawing as the basis for their subsequent interview. Drawings such as the one included in this box highlight aspects of leadership such as taking followers on a journey



(the path), through troubled times (the clouds and rain) and areas where it might be difficult to see what was going to happen next (the trees), to a successful finish (the chequered flag) where things were brighter (the sun shining).

Source: Developed from Cairns-Lee, H. (2017)

sometimes used to facilitate interaction with children or participants who are less articulate but may be used successfully with many types of participants.

In an approach where the researcher encourages participants to create their own images, a visual interview is still likely to be based on the interviewer eliciting interpretations from each participant. However, you will also need to explore the participant's reason for creating each image, whether literal or abstract (Box 10.21). This will include asking why they chose to take the image, the significance of the objects, activity or interaction shown in the image, and how the image represents their experience or viewpoint. Exploring images may encourage a participant to 'relive' an experience or reflect on its personal significance. The emphasis in this process will be to facilitate participant interpretation, to understand subjective perspectives using a non-judgemental approach.

A participatory approach may involve participants collaborating in various aspects of a research project, possibly through all stages from design to presentation. In this approach the role of the participant in a visual interview is more likely to be that of a collaborative discussant. One technique associated with greater participation is **reflexive photography**. This involves participants engaging in participant photography and reflective interviews to explore how their experiences are situated within social structures and attitudes related to class, gender, race, role and other social categories. This technique will involve participants in several stages of participant photography and reflection, often involving group interviews in which participants meet to present, discuss and analyse their photographic or digital images (Ozanne et al. 2013).

Related to reflexive photography and often led by participants, **photovoice** involves participants using participant photography centred on a research focus of social concern and meeting with other participants in group discussions to present, discuss and analyse images that they have created. Images are then selected by the participants to represent this issue of social concern. These are presented in a public exhibition with the aim of generating wider public support and action, or to change public policy.

10.12 Using diaries and diary studies

We already mentioned diaries as a distinctive format for collecting data when we considered the use of video diaries in observation (Section 9.6). Used in research interviews, a **diary** is a systematic, participant-centred data collection procedure that participants complete over time to record their data prior to being interviewed. The diary entries record data longitudinally as the data are collected consecutively rather than at a single point in time, the time horizon ranging from a few days to months (Section 5.6) (Box 10.22). The period over which the diary will be completed or created will be agreed between the researcher and the participants, although extended use of diaries is likely to lead to participant fatigue and attrition. Diaries are designed to record data about participants' experiences, activities, social interactions, behaviours, attitudes, emotions or sense of well-being. More broadly, diaries provide an unobtrusive means to understand complex processes in organisations. A research project based on the use of research diaries is often called a **diary study**. Research participants in a diary study may be referred to as diarists or diary-keepers.

Diaries allow data to be collected at multiple points in time. This may involve you asking your participants to complete or create a diary entry on a daily basis, or at some other interval depending on the frequency of the activity or aspect that your research is designed to focus upon. This activity or aspect may occur more than once a day, or less often than daily. Box 10.22 provides examples of research participants being asked to complete timed diary entries more than once a day, for a pre-arranged number of days or weeks.



Box 10.22 Focus on management research

Quantitative diary studies

In a study published in the *Journal of Management,* Vogel and Mitchell (2017) undertook research on the ways employees respond to diminished self-esteem after suffering from abusive supervision. Based on a theoretical model that examined the effects of abusive supervision on affected employees' workplace behaviours, which was mediated by sense of self-esteem and moderated by intention to leave, they undertook three field studies. The third of these was based on a quantitative diary study, referred to as a 'daily diary design'. For this study, they used 85 participants. These participants were given a link to an initial questionnaire that was used to measure demographic data about each participant, traits related to their self-esteem, their intentions to remain in or leave their employment and scope for alternative employment. The 83 participants who completed the initial questionnaire within one week were then sent daily questionnaires to complete during the last hour of each working day for 21 days. The measures in this daily questionnaire included those to assess, 'daily abusive supervision', 'daily self-esteem', 'turnover intentions' and 'daily workplace deviance'.

In a quantitative diary study published in the *Journal of Organizational Behaviour,* Prem et al. (2017) focused on the within-individual effects of time pressure and learning demands on knowledge workers' scope to thrive at work. In total, 124 participants took part in this 5-day diary study, in which each participant completed questionnaires three times each day: during the morning, afternoon and at the end of the working day. Prior to commencing this five-day diary study, participants completed a general questionnaire. The daily questionnaires were based on abbreviated scales and measured time pressure and learning demands in the morning, appraisal of the challenges and hindrances related to work in the afternoon, and learning and sense of vitality in the final daily questionnaire.

In a quantitative diary study published in the *Academy of Management Journal,* Uy et al. (2017) examined the relationship between surface acting at work, resulting emotional exhaustion and next-day work engagement. They also examined the moderating effects of giving and receiving help at work. Their analytical focus in examining these relationships was at the within-individual level. After completing an online initial, background questionnaire, the 102 participants took part in this 5-day diary study, with each participant completing a questionnaire before commencing work, a second questionnaire at the end of the working day while still in the workplace and a third questionnaire at home before going to bed.

Diarists are encouraged to record activities or events soon after they occur, so their perceptions of their experiences are foremost in their minds. This allows more accurate recall of what they experienced, when and where it occurred, how they were involved and how they feel about it. This is likely to be advantageous when compared to interviews that ask participants to recollect a past activity or event when their perceptions and feelings about it have been lessened by time. In this way, data from diaries should have high internal validity/credibility/authenticity (Section 5.8). Repeatedly collecting data through the completion or creation of multiple diary entries is also likely to produce rich data sets. This should allow frequencies, patterns and themes to be recognised in these data, and discussed in an interview. Diary data are collected unobtrusively since diarists complete or create their own entries without the researcher being present.

Diary entries may be recorded in writing, where participants complete paper-based questionnaires or create hand-written entries, they may be completed online where participants complete questionnaires or word process entries, and in qualitative studies they

may be recorded as audio diaries or video diaries (Whiting et al. 2018; Crozier and Cassell 2016). These means to record diary entries will each have implications for participants. Your choice of method to record diary data will need to consider its suitability for the context of the research and for the circumstances of individual participants. We first look at types of diaries in research, and then explore advantages, issues and strategies associated with their use.

Types of diaries

Like interviews, diaries may be highly structured and formalised, using pre-specified questions and responses, or less structured and informal, where participants are asked to write, type or audio record their responses to pre-determined open questions. The first type is used in a quantitative diary study and the second type is used in a qualitative diary study.

Quantitative diary study

A **quantitative diary study** will be composed of a series of identical, reasonably short questionnaires that are designed to be self-completed by a participant (Section 11.2). This will enable repeated measurements to be obtained from each participant at regular intervals through the course of the study. Participants may be asked to complete a questionnaire every day and to date this, while in some studies they will be asked to complete more than one questionnaire per day, which they will be asked to date and state the time at which it was completed. A quantitative diary study may last from a few days to several weeks, depending on the nature of the research objectives and the purpose of the research (Box 10.22).

Completing a quantitative research diary will demand both time and dedication from those who agree to participate, especially where they need to complete more than one entry (questionnaire) each day. The different media for delivery and return of questionnaires in Section 11.2 (for example, online or by hand) are also relevant for quantitative diary entries and need to facilitate ease of completion and return. Uy et al. (2017) facilitated this by asking their participants to complete paper diary entries, which were issued every day in person by a researcher and once completed, were deposited in a 'drop box' in the workplace. In some circumstances this approach will not be appropriate. Biron and Van Veldhoven (2016) produced booklets that contained an initial, longer questionnaire, the diary entries composed of shorter questionnaires and a set of instructions, which were either given out to participants, or posted to them. At the end of the study, these booklets were either collected in person or returned using the postage paid self-addressed envelope provided. In some circumstances, you will be able to ask your participants to access a daily diary online, which they can then complete and return electronically.

The completion of daily questionnaires in a quantitative diary study allows analysis to be conducted on variations between participants' responses (referred to as a **between persons analysis**), as well as providing the basis for subsequent interviews. Where participants complete more than one daily questionnaire daily, differences such as levels of stress or exhaustion of individuals at different times of each working day can be considered.

Qualitative diary study

A **qualitative diary study** comprises participants writing or typing diary entries, or audio or videorecording their spoken thoughts alongside a date and time. Qualitative diary entries will either be created at regular intervals, usually daily, or alternatively, related to the occurrence of a particular event or activity. These options are referred to as an interval-contingent approach and event-contingent approach, depending on the focus of

the research question and research objectives. Qualitative research diaries are used in longitudinal studies, ranging from a few days to three months, although extended use of this method may be associated with participant fatigue and attrition. A qualitative diary study is also likely to be conducted with a small number of participants, ranging from 4 to 12 (Box 10.23).

Qualitative diary studies are designed to produce accounts of participants' experiences, and their thoughts and feelings related to these (Box 10.23). Their production can be structured by providing participants with a diary template or prompt sheet containing a number of open questions to which you ask them to respond. You may ask diarists to describe:

- what was experienced?
- why did it occur?
- when and where did it occur?
- how were you involved?
- what were the outcomes?
- how do you feel about it?

However, this semi-structured approach may be seen as making assumptions about the nature of participants' experiences and imposing a rational and structured approach to their entries.

Alternatively, you may wish participants to reflect more on their subjective interpretations of their experiences, in which case you may wish to provide them with a less structured template that offers guidance about their purpose in creating diary entries but without a framework of questions to which to respond. In either case, the support that you offer to your diarists will be important in terms of the relevance, quality and quantity of the data that they produce in their research diaries (Day and Thatcher 2009). This is likely to include at least some guidance about creating diary entries to prevent participants dropping out of a diary study because of uncertainty about what to record (Crozier and Cassell 2016) (Box 10.23).

Crozier and Cassell (2016) also recognise that qualitative research diaries are suitable to encourage participants to produce discursive and narrative accounts, which can be used to understand how individuals react to particular events and cope with these (Box 10.23). Qualitative research diary entries can also be used to generate reflective accounts, where a diarist uses an entry to evaluate an earlier experience or set of experiences retrospectively.

While qualitative diary entries may be created unobtrusively by participants, some potential diarists may nevertheless find this process to be difficult or intrusive. Keeping a diary will be unfamiliar to many participants, who may not feel that they have the skills and struggle to express their thoughts and feelings. This sense of struggle may be related to the feeling that what they are being asked to do is intrusive; thoughts and feelings that they normally keep to themselves or only share with significant others will now be recorded and shared with people who they do not know or trust. Some participants may be uncertain about what will happen to the sensitive data which they create. While some will welcome and relish the opportunity to create a qualitative research diary, others may be reticent and self-conscious. You will therefore need to consider how you communicate with intended participants about issues related to informed consent, participant guidance and support, privacy, the avoidance of risk and harm, the voluntary nature of participation, anonymity and confidentiality, responsibility in the way data are handled, analysed and reported, and subsequently managed, if you wish to use this research method (Sections 6.6 and 6.7).



Box 10.23 Focus on management research

Examples of qualitative diary studies

In a study published in *Qualitative Research in Psychology,* Day and Thatcher (2009) asked eight participants to keep hand-written qualitative research diaries. The pages in each diary were headed with a printed date to encourage completion of entries. Other support provided to participants included sending text message reminders to complete entries and the opportunity to discuss any issues about this task with one of the researchers. This study was conducted over a period of three months, and while participants were not expected to complete an entry every day because of the event-based nature of the research, some did by explaining why a particular day's activities were not relevant to the research focus.

In an audio diary study published in the *Journal of Occupational and Organizational Psychology,* Crozier and Cassell (2016) selected six participants to represent a small but diverse sample with regard to age and gender. The choice of this relatively small sample was related to the in-depth, individual level of the analysis, which was designed to focus on within-individual variability. Participants were asked to audio record entries twice a week for four weeks. A message was sent to each participant by mobile phone on the day an audio diary entry was scheduled to be recorded. Participants were provided with a set of instructions for audio recording and a prompt sheet to provide some structure and guidance about what to comment and reflect on in their audio recordings. This list of 10 prompts indicates the semi-structured nature of this approach, although in the spirit of a semi-structured approach (Section 10.2) participants were advised to be flexible in the way they used these prompts depending on their relevance to the situation. The individual recordings that participants produced varied from less than 2 minutes to 12 minutes each. In total, the six participants produced 287 minutes of audio recordings.

Using diaries

Your successful use of a diary study will depend on planning your study very carefully and attempting to anticipate all possible issues. Depending on the quantitative or qualitative nature of your diary study, this will include pilot testing your proposed instructions, guidance notes, questionnaires, template or prompt sheet in a suitable context to evaluate these, and making changes where necessary. You will need to consider your participants and discuss the nature of their participation carefully with them, gain informed consent and provide assurances and information related to ethical, participatory and logistical issues. As a diary study will demand both time and dedication from participants, you will need to discuss the requirements of participation. Establishing informed and realistic expectations before commencement may help to reduce participant attrition. This will include clear expectations about what to include in a qualitative diary entry, how to complete a quantitative diary, the frequency of diary entries, the likely time required to complete or create each entry, the way entries will be recorded and any logistical issues related to this, and the overall duration of the diary study.

Achieving positive outcomes when you conduct a diary study will depend on the instructions, research diary and support provided to participants. The instructions should include a short, clear statement that informs participants about what they need to do, when or how often and how to contact the researcher to ask for advice. In a qualitative diary study the instructions will also include a template or prompt sheet to guide participants as they compose diary entries. Providing participants with a suitable means to complete regular questionnaires or create diary entries will be vital. You will need to

ensure that the means you use, be it online, paper-based or audio/audio-visual recording, is appropriate for your participants and to the setting of your research. An inappropriate or difficult to use diary technique is likely to lead to a poor outcome.

The support you offer your participants in a diary study will also be very important. Contact during the early days of the study will enable you to find out whether participants are experiencing problems in completing diary entries and allow an opportunity to resolve these and deal with any concerns or doubts. Assurances given at this stage may help to avoid participant attrition. You may also send each participant a message by mobile phone on the day a diary entry is scheduled to be recorded. After participants have become used to completing or creating diary entries, you may feel more confident about the conduct of the study. However, there is still a risk that participants may stop completing entries at agreed intervals, or even stop participating. Keeping in contact may help to avoid these possibilities. In a longer diary study lasting several weeks you should consider contacting your participants regularly to check if any issues have arisen. Some participants may relish the task of completing or creating their diary and some of these may not welcome regular checking; you will therefore need to be sensitive to this type of participant, as well as to others who welcome reminders or need reassurance to keep participating.

Depending on the means you are using to conduct your diary study you will also need to consider the return of diary entries or complete diaries at the end of the study. You will need to recognise that participants will have invested a great deal of time and dedication to completing or creating their diaries. They will have become involved in the research project. You will need to consider offering them a debriefing at the time they complete their diaries and later when you have analysed the data and produced your report. An interview with each participant at the time you collect or receive the completed diary, or final diary entry, may be very helpful to you in terms of making sense of the data you have gathered. We summarise these as a checklist for preparing to use diaries (Box 10.24).



Box 10.24 Checklist

Preparing to use diaries

- ✔ develop a short clear statement about the purpose of your diary study and what participants need to do;
- ✔ state how often and when diary entries should be created or completed, related to the use of an interval-contingent or event-contingent approach;
- ✔ state how many diary entries each participant should produce in total and over what period of time;
- ✔ recognise the scope for participant fatigue and attrition, leading to non-completion;
- ✔ consider the logistical difficulties participants may face in accessing, completing and returning individual diary entries or completed diaries;
- ✔ provide a template or prompt sheet to guide participants, taking into account that:
  - too little guidance or support in an unstructured qualitative diary study may lead to uncertainty and adverse consequences for participation, and for the relevance, quality and quantity of data that are produced;
  - provision of a diary template or prompt sheet in a semi-structured qualitative diary study should be sufficient to facilitate relevant, high quality responses without being restrictive;
- ✔ provide an appropriate means for participants to complete and return their diary entries;
- ✔ state how to contact the researcher to ask for advice;
- ✔ decide whether you will interview participants to help understand and interpret their data.

10.13 Summary

- The use of semi-structured and in-depth interviews allows you to collect rich and detailed data, although you will need to develop a sufficient level of competence to conduct these and to be able to gain access to the type of data associated with their use.
- Interviews can be differentiated according to the standardisation and structure of questioning, the mode adopted to conduct them, and medium through which they are operationalised:
  - Standardisation and structure: structured (standardised) or unstructured (semi-structured or in-depth);
  - Mode: one-to-one or group (one-to-many or two-to-many);
  - Medium: online, telephone or face-to-face.
- Semi-structured and in-depth research interviews can be used for exploratory, explanatory and evaluative research purposes.
- The potential for semi-structured and in-depth interviews is dependent upon the purpose of your research, need to establish personal contact, the nature of the questions you wish to ask and the length of time required from participants.
- Your research design may incorporate more than one type of interview.
- It is important to consider data quality issues and evaluate your interviewing practice, including the cleanliness of your questions to assess the credibility of your data.
- Data quality issues related to reliability/dependability, forms of bias, cultural differences and generalisability/transferability may be overcome by considering why you have chosen to use interviews, and careful preparation.
- In preparing for semi-structured and in-depth interviews you need to consider the interview context, its structure, medium, and logistical and time management issues.
- In conducting semi-structured and in-depth interviews you need to consider the appropriateness of your appearance, opening comments when the interview commences, approach to questioning, appropriate use of different types of question, nature of your behaviour during the interview, demonstration of attentive listening skills, scope to summarise and test understanding, ability to deal with difficult participants and how you will record data accurately and fully.
- Apart from one-to-one interviews conducted on a face-to-face basis, you should consider conducting such interviews online or by telephone. In using these media, you need to consider additional aspects that are medium specific alongside many of those considered for face-to-face interviews.
- Group interviews or focus group interviews have advantages associated with participants interacting and discussing your questions. However, they are considerably more difficult to manage than one-to-one interviews.
- Visual images or diaries may be used as a distinctive format interview depending on the purpose of your research.
- Data may also be collected using a quantitative or qualitative diary study.

Self-check questions

Help with these questions is available at the end of the chapter.

10.1 What type of interview would you use in each of the following situations:
a a market research project?

b a research project seeking to understand whether attitudes to working from home have changed?

c following the analysis of a questionnaire?

10.2 What are the advantages of using semi-structured and in-depth interviews?

10.3 During a presentation of your proposal to undertake a research project, which will be based on semi-structured or in-depth interviews, you feel that you have dealt well with the relationship between the purpose of the research and the proposed methodology, when one of the panel leans forward and asks you to discuss the trustworthiness and usefulness of your work for other researchers. This is clearly a challenge to see whether you can defend such an approach. How do you respond?

10.4 Having quizzed you about the trustworthiness and usefulness of your work for other researchers, the panel member decides that one more testing question is in order. He explains that interviews are not an easy option. 'It is not an easier alternative for those who want to avoid statistics', he says. 'How can we be sure that you're competent to get involved in interview work, especially where the external credibility of this organisation may be affected by the impression that you create in the field?' How will you respond to this concern?

10.5 What are the key issues to consider when planning to use semi-structured or in-depth interviews?

10.6 Mark is just about to undertake a semi-structured interview using Zoom. Looking at the screenshot below, what advice would you give him before he admits his participant to the interview?



Source: © 2022 Mark NK Saunders

10.7 Which circumstances will suggest the use of visual interviews based on researcher-created images, even where the researcher favours using visual interviews based on participant-created images wherever possible?

10.8 You are designing a qualitative diary study but are not sure whether to ask your participants to record their diary entries on paper, word process them or to create an audio diary. You decide to brainstorm the merits of each approach. What points might be included in this consideration?

Review and discussion questions

10.9 Watch and, if possible, record a television interview such as one that is part of a chat show or a documentary. It does not matter if you record an interview of only 10 to 15 minutes' duration.

- **a** As you watch the interview, make notes about what the participant is telling the interviewer. After the interview, review your notes. How much of what was being said did you manage to record?
- **b** If you were able to record the television interview, watch it again and compare your notes with what was actually said. What other information would you like to add to your notes?
- **c** Either watch the interview again or another television interview that is part of a chat show or a documentary. This time pay careful attention to the questioning techniques used by the interviewer. How many of the different types of question discussed in Section 10.7 can you identify?
- **d** How important are the visual cues and verbal and paralinguistic signals given by the interviewer and the interviewee in understanding the meaning of what is being said?

10.10 With a friend, each decide on a topic about which you think it would be interesting to interview the other person. Separately develop your interview themes and prepare an interview guide for a semi-structured interview. At the same time, decide which one of the 'difficult' participants in Table 10.5 you would like to role-play when being interviewed.

- **a** If possible, conduct and audio record both interviews using a cloud-based video-conferencing platform. If this is not possible either audio record or ensure the interviewer takes notes.
- **b** Watch each of the recordings – what aspects of your interviewing technique do you each need to improve?
- **c** If you were not able to record the interview, how good a record of each interview do you consider the notes to be? How could you improve your interviewing technique further?
- **d** As an interviewer, ask your friend an open question about the topic. As your friend answers the question, note down their answer. Summarise this answer back to your friend. Then ask your friend to assess whether you have summarised their answer accurately and understood what s/he meant.

10.11 Obtain a transcript of an interview that has already been undertaken. If your university subscribes to online newspapers such as ft.com, these are a good source of business-related transcripts. Alternatively, typing 'interview transcript' into a search engine such as Google or Bing will generate numerous possibilities on a vast range of topics!

- **a** Examine the transcript, paying careful attention to the questioning techniques used by the interviewer. To what extent do you think that certain questions have led the interviewee to certain answers?
- **b** Now look at the responses given by the interviewer. To what extent do you think these are the actual verbatim responses given by the interviewee? Why do you think this?

Progressing your research project

Using research interviews

- Assess whether interviews will help you to answer your research question and address your objectives. Where you do not think that they will be helpful, justify your decision. Where you think that they will be helpful, respond to the following points.
- Which structure(s), mode(s) and medium(s) of interview will be appropriate to use? Explain how you intend to use them and how they will fit into your chosen research strategy.
- Draft a topic focus to explore during in-depth interviews or list of themes to use in the conduct of semi-structured or in-depth interviews and use your research question(s) and objectives to assess this or these.
- What threats to the trustworthiness of the interview data you collect are you likely to encounter? How will you seek to overcome these?
- What practical problems do you foresee in conducting your interviews? How will you attempt to overcome these practical problems?
- Ask your project tutor to comment on your judgement about using interviews, the relationship between these and your proposed research strategy, the fit between your topic focus or interview themes and your research question(s) and objectives, the issues and threats that you have identified, and your suggestions to overcome these.
- Use the questions in Box 1.4 to guide your reflective diary entry.

Using research diaries

- Assess whether the use of a research diary study will help you to answer your research question and address your objectives. Where you do not think that this will be helpful, justify your decision. Where you think that this will be helpful, respond to the following points.
- Which research strategy or strategies do you propose to use? What will be the implications of this strategy or strategies for the type of diary study that you use and the way in which you will analyse your data?
- Which issues are likely to arise in relation to using this diary study? Which strategies will you use to anticipate and seek to overcome these?
- Ask your project tutor to comment on your judgement about using a diary study and its relationship to your proposed research strategy, the issues you have identified that may affect its conduct and your strategies to anticipate and seek to overcome these.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

BBC Academy (n.d.) *Interviewing: Preparing for the interview.* Available at https://downloads.bbc.co.uk/academy/academyfiles/TVNewsInterviewing/Interviewing%20-%20Preparing%20for%20an%20interview.pdf [Accessed 18 Dec. 2021]. This brief guide is part of a set which also includes *Asking the right questions.* Both guides have hyperlinks to informative videos.

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Case 10
Conducting audio diary studies of work-life conflict



baona/E+/Getty Images

Yu Yan is studying for a Masters in Human Resource Management and is keen to focus upon work–life conflict in her research project. She has studied the literature and is intrigued by the cultural assumptions that underpin what she considers to be more westernised views of work-life balance. Yu Yan is from a Chinese background and her view is that as the literature suggests (Xiao and Cooke 2012), work–life conflicts in China are treated more as facts of life that one has to deal with, rather than challenges that individuals, families and organisations should strive to resolve, a more typical view in the literature on Western organisations (Radcliffe and Cassell 2014).Yu Yan is keen to investigate her hunch that the experiences of Chinese and UK families are different. In her research methods course she has been excited by more qualitative methods of research, where there is the opportunity to ask people directly about their experiences. She is keen to find out the types of work–life conflicts people experience and how they deal with them.

Yu Yan has read about the use of face-to-face interviews and diary studies (Radcliffe and Cassell 2014) in accessing the daily experiences of work-life conflict and balance. However, the recent Covid pandemic has made her concerned about face-to-face interviews and she is keen to collect qualitative data by other means. Her research suggests that one way of accessing such data is by audio or video diary studies where informants are asked to record their views regularly (Whiting et al. 2018; Crozier and Cassell 2016).

In preparing to discuss the choice of methods with her project tutor, Yu Yan decides to undertake a pilot study on some of her fellow students. She asks two of her friends to record their views at two times each day, at midday and again at 6 p.m. They are asked to answer the question 'What work–life conflicts did you experience?' and 'How did you manage them?' In describing her pilot data to her project tutor, she expresses a concern that the data collected may not be as insightful as it could be, indeed she had expected a little more commentary in the recordings. Additionally, she is uncertain about what to do about the non-verbal aspects of the video data collected, for example should she be focusing on analysing gestures and facial expressions? Her project tutor suggests two ways of addressing these concerns. First, given that Yu Yan wants to know about how people deal with work–life conflict, she does not necessarily need visual data. Therefore, an audio diary may be more appropriate. Second, the formal questions that Yu Yan asked may have put too much structure on the data collection process and that a more free-flowing method of data collection led by the participants may be more appropriate. She suggests to Yu Yan that studies that have used video or audio diaries have used clear instructions to encourage the 'digital diarist' (Whiting et al. 2018) to talk about what is important to them as and when it is convenient.

After the meeting with her project tutor, Yu Yan is excited and optimistic about her project. From her family and friendship networks and through snowball sampling she has already found 20 people who are ready to record their views on their mobile phones and send their accounts back to her. Half of these people come from Chinese backgrounds, so she is hoping to be able to make some comparative conclusions about different approaches to work-life conflict. Yu Yan has asked

the 20 diarists to record their data over a two-week period. She decides to leave them in peace while they do the task, and she works on her literature review. Four weeks later, she contacts her participants asking that they submit their diary entries to her so she can start to analyse the data. As she prepares for her next meeting with her project tutor where she will give an overview of the data she has collected, she is disappointed to find that there is little consistency in the data. Some participants have made plenty of recordings, but they are outside of the two-week period. Some have made very little with three participants admitting that they forgot to record anything. She is worried that some of the participants say that they don't think that they have experienced any examples of work–life conflict during the period and therefore haven't recorded anything.

Yu Yan is feeling downhearted when she meets with her project tutor. Her project tutor re-assures her that she has enough data to write a very interesting dissertation, but perhaps there are things she can learn from the experience about the methodological approach she has used. In seeking to ensure that participants provided lots of free-flowing data, Yu Yan may not have provided enough structure for her participants.

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Questions

1. One of the challenges that Yu Yan faced was that of attrition, that participants who had agreed to participate did not complete their audio diaries. What could she have done to ensure that they engaged with the research?
2. Yu Yan found that the data she collected was very different for different participants. How could she have ensured that there was more consistency in the data collected?
3. What advice would you have given Yu Yan about planning her research study, and what she might have done differently?

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.



They are:

- Students' use of work-based learning in their studies (focussing on the use of multiple methods comprising documents and one-to-one interviews conducted face-to-face)
- Equal opportunities in the publishing industry (focussing on the use of in-depth, one-to-one interviews face-to-face)
- Students' and former students' debt problems (focussing on focus groups)
- Organisations in a flash (focussing on the use of semi-structured one-to-one interviews face-to-face)
- How do you network your SME? (focussing on the use of language in a face-to-face focus group transcript)
- Visualising consumption (focussing on use of participant's images and focus groups).

Self-check answers

10.1 The type of interview that is likely to be used in each of these situations is as follows:

a A standardised and structured interview where the aim is to develop response patterns from the views of people. The interview schedule might be designed to combine styles so that comments made by interviewees in relation to specific questions could also be recorded.

b The situation outlined suggests an exploratory approach to research, and therefore an in-depth interview would be most appropriate.

c The situation outlined here suggests that an explanatory approach is required in relation to the data collected, and in this case a semi-structured interview is likely to be appropriate.

10.2 Reasons that suggest the use of interviews include:

- the exploratory or explanatory nature of your research;
- situations where it will be significant to establish personal contact, in relation to interviewee sensitivity about the nature of the information to be provided and the use to be made of this;
- situations where the researcher needs to exercise control over the nature of those who will supply data;
- situations where there are many questions to be answered;
- situations where questions are complex or open-ended;
- situations where the order and logic of questioning may need to be varied.

10.3 Certainly politely! Your response needs to show that you are aware of the issues relating to reliability/dependability, bias and generalisability/transferability that might arise. It would be useful to discuss how these might be overcome through the following: the design of the research; the keeping of records or a diary in relation to the processes and key incidents of the research project as well as the recording of data collected; attempts to control bias through the process of collecting data; the relationship of the research to theory.

10.4 Perhaps it will be wise to say that you understand his position. You realise that any approach to research calls for particular types of competence. Your previous answer touching on interviewee bias has highlighted the need to establish credibility and to gain the interviewee's confidence. While competence will need to be developed over time, allowing for any classroom simulations and dry runs with colleagues, probably the best approach will be your level of preparation before embarking on interview work. This relates first to the nature of the approach made to those whom you would like to participate in the research project and the information supplied to them, second to your intellectual preparation related to the topic to be explored and the particular context of the organisations participating in the research, and third to your ability to conduct an interview. You also recognise that piloting the interview themes will be a crucial element in building your competence.

10.5 Key issues to consider include the following:

- planning to minimise the occurrence of forms of bias where these are within your control, related to interviewer bias, interviewee bias and sampling bias;
- considering your aim in requesting the research interview and how you can seek to prepare yourself in order to gain access to the data that you hope your participants will be able to share with you;
- devising interview themes that you wish to explore or seek explanations for during the interview;

- sending a list of your interview themes to your interviewee prior to the interview, where this is considered appropriate;
- requesting permission and providing a reason where you would like to use an audio recorder during the interview;
- making sure that your level of preparation and knowledge (in relation to the research context and your research question and objectives) is satisfactory to establish your credibility when you meet your interviewee;
- considering how your intended appearance during the interview will affect the willingness of the interviewee to share data.

10.6 Before starting the interview Mark needs to:

- ensure his appearance is appropriate for the intended participant;
- either blur the background or, alternatively, tidy the room;
- adjust the lighting in the room so a large part is not in shadow;
- check his microphone is unmuted;
- not start recording unless the participant consents;
- look at the screen and remember to smile.

10.7 An important circumstance in which a researcher chooses to use researcher-created images is where these images are taken of the research participants. These images will show participants engaged in some activity in the research setting, enabling the researcher to use them to elicit participants' insider accounts of what is shown. A researcher may also take images to explore with participants in visual interviews where this will help the researcher to understand aspects of the research setting. The researcher may be using a combination of research methods to collect data, such as a form of participant observation and in the process of conducting observation may take images which he or she wishes to explore with informants. Access may also be an issue prompting the use of researcher-created visual images, where the researcher is given permission to take images in a particular setting while research participants are not given this right.

10.8 One key point might be to see if your research question or one or more of your research objectives suggests an obvious choice. It might be the case, for example, that you require an audio diary because you are interested in analysing the performative way in which the diary is recorded – which would be lost in any written version of a research diary. The act of creating audio diaries may also lead to more spontaneous diary entries, in which participants speak with greater fluidity offering you a less edited version of their thoughts that captures emotions more easily and which may possibly lead to greater depth compared to written versions. Audio diaries may also be easier for some groups who have problems in writing or problems with sight (Crozier and Cassell 2015).

A hand-written or word-processed diary may each lead to the creation of considered, full-length entries with ample detail carefully woven into composed accounts. These forms of diary keeping may encourage a more structured approach, and be more suitable for particular types of participant. Written or word-processed diaries may be more appropriate where you wish to encourage the use of a particular approach, such as a descriptive, discursive or evaluative style. Hand-written diaries may promote greater free style compared with word-processed diaries, which may be helpful during analysis. Conversely, word-processed diaries may provide you with a well-structured set of entries which are easy to use during data analysis. Use of word-processed diaries may also be particularly suitable for some groups of participants.

These may only be some of the points you have included in considering the merits of using either hand-written diaries, word-processed diaries, or audio diaries. In the context of a given research project there are likely to be many points that may be considered. By brainstorming these, an informed and appropriate choice may be made.

Get ahead using resources on the companion website at:
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- Follow live links to useful websites.

Chapter 11



Collecting primary data using questionnaires

Learning outcomes

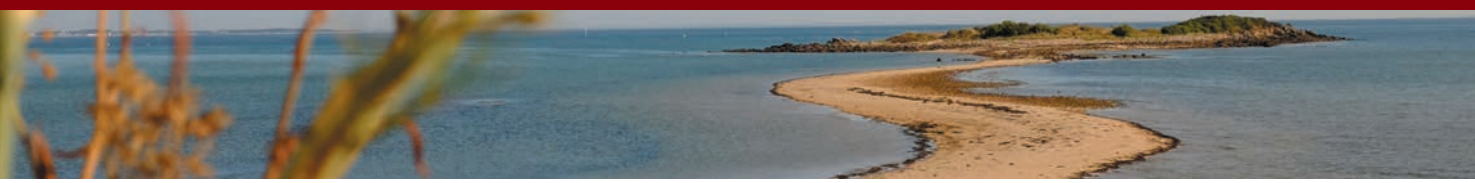
By the end of this chapter, you should be able to:

- identify the advantages and disadvantages of using questionnaires to collect data;
- distinguish between a range of self-completed (online, SMS, postal, delivery and collection) and researcher-completed (telephone, face-to-face) questionnaires;
- identify the different types of data questions collect;
- outline ways of establishing validity and testing reliability;
- select, justify and operationalise the use of appropriate questionnaire design and distribution methods to answer research questions and to meet objectives;
- justify pilot testing a questionnaire;
- take appropriate action to enhance response rates and to ensure the validity and reliability of the data collected;
- progress your research project by collecting data using a questionnaire.

11.1 Introduction

Within business and management research, the greatest use of questionnaires is made within the survey strategy (Section 5.5). However, both experiment and case study research strategies can make use of these methods. Although you probably have your own understanding of the term 'questionnaire', it is worth noting that there are a variety of definitions. Some people reserve it exclusively for questionnaires where the person answering the questions records their own answers, when it is **self-completed**. Others use it as a more general term to include interviews in which precisely the same set of questions are asked, and the respondent's answers are recorded by the researcher.

In this book we use **questionnaire** as a general term to include all procedures for data collection in which each person is asked to respond to the same set of questions in a



predetermined order (De Vaus 2014). An alternative term, which is also widely used, is **instrument** (Ekinci 2015). The term therefore includes both questionnaires where questions are answered without a researcher being present (self-completed) and those where the researcher completes the questionnaire for the respondent. An overview of questionnaires that fall within this broad heading are outlined in the next section (11.2), along with their attributes and relative advantages and disadvantages for different completion modes and questionnaire mediums.

Please rate your experience . . .

Questionnaires are a part of our everyday lives. For modules in your course, your university has probably asked you and your fellow students to complete online module evaluation questionnaires, thereby collecting data on students' views. Similarly, when we visit a tourist attraction, have a meal in a restaurant or travel by air, there is often the opportunity to complete a visitor feedback form, comment card or passenger survey. Airlines are no exception, wanting to collect data from their passengers so they can enhance their customers' experiences. While on a flight, and normally as the plane is nearing the destination, each passenger is asked via the aircraft's inflight entertainment system if they would be willing to answer a few questions about their experiences. If a passenger is willing, they then click on the 'passenger survey' icon displayed on their seat back screen and the first of the questions appears. Subsequently, they can rate their experiences by answering a series of closed (choice) questions using the plane's inflight entertainment system. The



Source: Matej Kastelic/Shutterstock

questionnaire starts with a brief introduction emphasising the importance of passengers' opinions in helping the Airline to improve:

> *Here at [Airline Name] we are dedicated to the continual improvement of our services and to the airline itself. To assist us in achieving this and to be in with a chance of winning 10,000 air miles we would be grateful if you could tell us what you thought of your experience flying with us today – thank you.*

This is followed by closed questions such as those given below. Other topics about which questions are often asked include the service given by the cabin crew, the quality of the inflight entertainment system and the overall value for money of the airline. Personal details are also usually collected from each passenger, including their name, gender, age, country of origin and email address; passengers are informed that this will enable the airline to contact them, if they win the prize.

How did you check-in for your flight?

Online ☐ Check-in counter ☐ Kiosk ✔

Please rate your check-in experience for each of the following:

	Excellent	Very good	Good	OK
Ease of finding the check-in area	☐	☐	☐	☐
Waiting time in queue	☐	☐	☐	☐
Politeness of check-in staff	☐	☐	☐	☐
Knowledge and helpfulness of check-in staff	☐	☐	☐	☐

The use of questionnaires is discussed in many research methods texts. These range from those that devote a few pages to it, to those that specify precisely how you should construct and use them, such as Dillman et al.'s (2014) **tailored design method**. Because each person (respondent) is asked to respond to the same set of questions, the questionnaire provides an efficient way of collecting responses from a large sample prior to quantitative analysis (Chapter 12). However, before you decide to use a questionnaire, we should like to include a note of caution. Many authors (for example, Bell and Waters 2018) argue that it is far harder to produce a good questionnaire than you might think. You need to ensure that it will collect the precise data that you require to answer your research question(s) and achieve your objectives. This is of paramount importance because, like when the airline in the vignette is asking passengers to complete a questionnaire, you are unlikely to have more than one opportunity to collect the data. In particular, you will be unable to go back to those individuals who choose to remain anonymous and collect additional data using another questionnaire. These, and other issues, are discussed in Section 11.3.

The design of your questionnaire will affect the response rate and the validity and reliability of the data you collect (Section 11.4). These, along with response rates, can be maximised by:

- careful design of individual questions;
- clear and pleasing visual presentation;
- lucid explanation of the purpose;
- pilot testing;
- carefully and appropriately planned and executed delivery and return of completed questionnaires.

Our discussion of these aspects forms Sections 11.5 through to 11.8. In Section 11.5 we discuss designing individual questions, translating them into other languages and question coding. Constructing the questionnaire is discussed in Section 11.6 and pilot testing it in Section 11.7. Operationalising the distribution of the questionnaire is considered in Section 11.8 along with actions to help ensure high response rates.

11.2 Questionnaires: an overview

When to use questionnaires

We have found that many people use a questionnaire to collect data without considering other methods such as examination of archive and secondary sources (Chapter 8), observation (Chapter 9) and semi-structured or unstructured interviews (Chapter 10). Our advice is to evaluate all possible data collection methods and to choose those most appropriate to your research question(s) and objectives. Questionnaires are usually not particularly good for exploratory or other research that requires large numbers of open-ended questions (Section 10.2). They work best with standardised questions that you can be confident will be interpreted the same way by all respondents (Robson and McCartan 2016).

Questionnaires tend to be used for descriptive or explanatory research. Descriptive research, such as that undertaken using attitude and opinion questionnaires and questionnaires of organisational practices, enable you to identify and describe the variability in different phenomena. In contrast, explanatory or analytical research allows you to examine and explain relationships between variables, in particular cause-and-effect relationships. Alternatively, research requiring respondents to complete a quantitative diary regularly may use a short questionnaire administered repeatedly. These purposes have different research design requirements, which we discuss later (Section 11.3).

Although questionnaires may be used as the only data collection method, it can be better to link them with other methods in a mixed or multiple method research design (Section 5.4). For example, a questionnaire to discover customers' attitudes can be complemented by in-depth interviews to explore and understand these attitudes (Section 10.2).

Questionnaire completion modes and mediums

The design of a questionnaire differs according to its completion mode – whether it is completed by the respondent or a researcher and the medium through which it is distributed and returned or collected (Figure 11.1). **Self-completed questionnaires** are usually completed by the respondents and are often referred to as surveys. Such questionnaires are usually distributed to respondents online (**online questionnaire**), respondents either accessing the questionnaire through a web browser using a hyperlink (**Web questionnaire**)

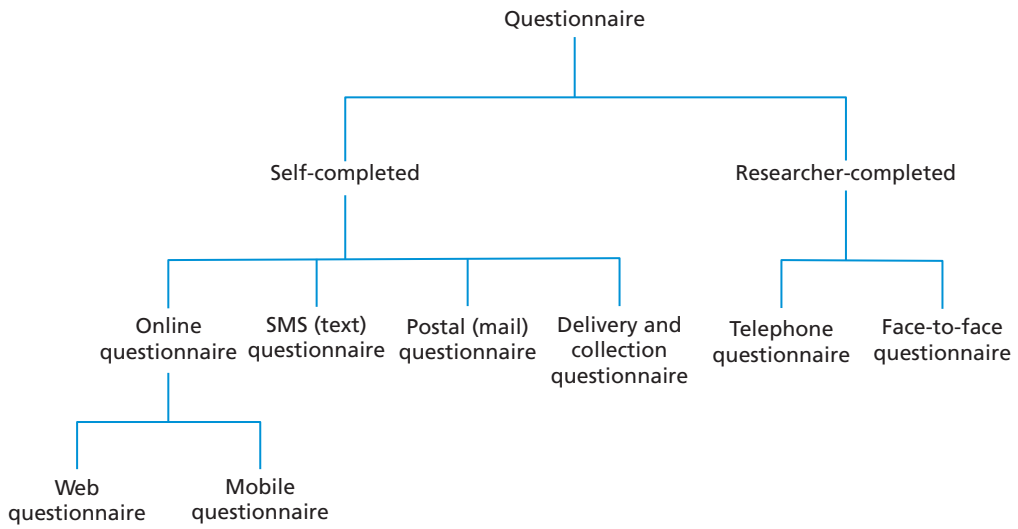


Figure 11.1 Questionnaire completion modes and mediums

on their computer, tablet or smartphone; or directly such as via a QR (quick response) code scanned into their smartphone or camera equipped device (**mobile questionnaire**). However, it is worth noting that such devices are increasingly blurring into each other (Kozinets 2020).

Questionnaires can also be delivered to each respondent's smartphone as a series of SMS (short message service) texts (**SMS questionnaires**), posted to respondents who return them by post after completion (**postal** or **mail questionnaires**) or delivered by hand to each respondent and collected later (**delivery and collection questionnaires**). Responses to **researcher-completed questionnaires** (also known as interviewer-completed questionnaires) are recorded by the researcher or a research assistant on the basis of each respondent's answers. Researcher-completed questionnaires undertaken using the telephone are known as **telephone questionnaires**. The final of these, **face-to-face questionnaires**, refers to those questionnaires where the researcher or a research assistant physically meet respondents and ask the questions face-to-face. These are also known as **structured interviews** but differ from semi-structured and unstructured (in-depth) interviews (Section 10.2), as there is a defined schedule of questions from which the researcher or research assistant should not deviate.

The choice of questionnaire

Your choice of questionnaire will be influenced by a variety of factors related to your research question(s) and objectives (Table 11.1), and in particular the:

- characteristics of the respondents from whom you wish to collect data;
- importance of reaching a particular person as respondent;
- importance of respondents' answers not being contaminated or distorted;
- size of sample you require for your analysis, taking into account the likely response rate;
- types of question you need to ask to collect your data;
- number of questions you need to ask to collect your data.

These factors will not apply equally to your choice of questionnaire, and for some research questions or objectives may not apply at all. The completion mode and medium you choose will dictate how confident you can be that the respondent is the person whom you wish to answer the questions and thus the reliability of responses (Table 11.1). Even if you address a postal questionnaire to a company manager by name, you have no way of ensuring that the manager will be the respondent. The manager's assistant or someone else could complete it! Online questionnaires, delivered by an emailed hyperlink, offer greater control because most people read and (hopefully) respond to their own emails. Similarly, SMS questionnaires, although only suitable for short questionnaires, are likely to be answered by the actual respondent as most people read and reply to text messages sent to them. With delivery and collection questionnaires, you can sometimes check who has answered the questions at collection. By contrast, researcher-completed questionnaires enable you to ensure that the respondent is whom you want. This improves the reliability of your data. In addition, you can record some details about non-respondents, allowing an assessment of the impact of bias caused by refusals.

Any contamination or distortion of respondents' answers will reduce your data's reliability (Table 11.1). Sometimes, if they have insufficient knowledge or experience, they may deliberately guess at the answer, a tendency known as **uninformed response**. This is more likely when the questionnaire has been incentivised (Section 11.8). Respondents to self-completed questionnaires are relatively unlikely to answer to please you or because they believe certain responses are more **socially desirable** (Dillman et al. 2014). They may, however, discuss their answers with others, thereby contaminating their response. Respondents to telephone and face-to-face questionnaires are more likely to answer to please due to their contact with you, although the impact of this can be minimised by good interviewing technique (Sections 10.7 to 10.9). Responses can also be contaminated or distorted when recorded. In extreme instances, research assistants may invent responses. For this reason, random checks of research assistants are often made by survey organisations. When writing your project report you will be expected to state your response rate (Section 7.5). When doing this you need to be careful not to make unsubstantiated claims if comparing with other questionnaires' response rates. While such comparisons place your response rate in context, a higher than normal response rate does not prove that your findings are unbiased (Rogelberg and Stanton 2007). Similarly, a lower than normal response rate does not necessarily mean that responses are biased.

The questionnaire you choose will affect the number of people who respond (Section 7.5). Researcher-completed questionnaires will usually have a higher response rate than self-completed questionnaires (Table 11.1). The size of your sample and the way in which it is selected will have implications for the confidence you can have in your data and the extent to which you can generalise (Section 7.5).

Longer questionnaires are more likely to result in careless responding than shorter ones, sometimes being reduced when their completion is supervised (Bowling et al. 2021). The presence of a researcher (or the use of cloud-based survey design, data collection and analysis software such as Qualtrics Research core™ and SurveyMonkey™) means that it is also easier to route different subgroups of respondents to answer different questions using a filter question (Section 11.4). The suitability of different types of question also differs between completion modes and questionnaire mediums.

Your choice of questionnaire completion mode and medium will also be affected by the resources you have available (Table 11.1), and in particular the:

- time available to complete the data collection;
- financial implications of data collection and entry;
- availability of research assistants and field workers to assist;
- cloud-based survey design, data collection and analysis software.

Table 11.1 Main attributes of questionnaires

Attribute	Medium					
	Online	**SMS**	**Postal**	**Delivery and collection**	**Telephone**	**Face-to-face**
Population's characteristics for which suitable	IT literate individuals with access to the Internet, often contacted by email	Individuals with a mobile telephone	Literate individuals who can be contacted by post; selected by name, household, organisation, etc.		Individuals who can be telephoned; selected by name, household, organisation, etc.	Any; selected by name, household, organisation, in the street, etc.
Confidence that right person has responded	High with email	High as have mobile phone number	Low	Low but can be checked at collection	High	
Likelihood of contamination or distortion of respondent's answer	Low, except where questions relate to use of Internet or associated technologies	Low	May be contaminated by consultation with others		Occasionally distorted or invented by researcher/ research assistant	Occasionally contaminated by consultation or distorted/ invented by researcher/ research assistant
Size of sample	Large, can be geographically dispersed			Dependent on number of field workers	Dependent on number of researchers/ research assistants	
Likely response rate[a]	Variable to low, 30–50% reasonable for Web within organisations, otherwise 10% or even lower	Low, often 10% or even lower	Variable, 30–50% reasonable		High, 50–70% reasonable	
Feasible length of questionnaire	Equivalent of 6–8 A4 pages, minimise scrolling down	Short, as few questions as possible, preferably no more than 3	6–8 A4 pages		Up to half an hour	Variable depending on location
Suitable types of question	Closed questions but not too complex; complicated sequencing fine if uses cloud-based software; must be of interest to respondent	Closed questions but not too complex; Questions need to be kept as succinct as possible	Closed questions but not too complex; simple sequencing only; must be of interest to respondent			Open and closed questions, including complicated questions; complicated sequencing feasible

Attribute	Medium					
	Online	**SMS**	**Postal**	**Delivery and collection**	**Telephone**	**Face-to-face**
Time taken to complete collection	2–6 weeks from distribution (dependent on number of follow-ups)	Almost immediate	4–8 weeks from posting (dependent on number of follow-ups)	Dependent on sample size, number of research assistants, etc.	Dependent on sample size, number of researchers/research assistants, etc., but slower than self-completed for same sample size	
Main financial resource implications	Cloud-based software subscription, purchase of list of respondents' email addresses or data panel participants	Cloud-based software subscription, purchase of list of mobile phone numbers or data panel participants	Outward and return postage, photocopying, clerical support, data entry	Research assistants, travel, photocopying, clerical support, data entry	Research assistants, telephone calls, clerical support; photocopying and data entry if not using CATI[b]; survey tool if using CATI	Research assistants, travel, clerical support; photocopying and data entry if not using CAPI[c]; survey tool if using CAPI
Role of researcher/ research assistants in data collection	None			Delivery and collection of questionnaires; enhancing respondent participation	Enhancing respondent participation; guiding the respondent through the questionnaire and recording responses; answering respondents' questions	
Data input[d]	Automated through cloud-based software		Closed questions can be designed so that responses may be entered using optical mark readers after questionnaire has been returned		Response to all questions entered at time of collection using cloud-based software or CATI[b]	Response to all questions can be entered at time of collection using cloud-based software or CAPI[d]

[a]Discussed in Section 7.5. [b]Computer-aided telephone interviewing. [c]Computer-aided personal interviewing. [d]Discussed in Section 12.4.
Sources: Authors' experience; Baruch and Holtom (2008); De Vaus (2014); Dillman et al. (2014); Saunders (2012); van de Heijden (2017)

The time needed for data collection increases markedly for delivery and collection and researcher-completed questionnaires where the samples are geographically dispersed (Table 11.1). One way you can overcome this constraint is to select your sample using cluster sampling (Section 7.6). For online questionnaires, **computer-aided personal interviewing (CAPI)** or **computer-aided telephone interviewing (CATI)**, you will need to consider the availability (and often the cost) of obtaining lists of email addresses or telephone numbers. For postal questionnaires you will need to consider the costs of reproducing the questionnaire, postage and entering the data for computer analysis. For telephone questionnaires you will also need to consider the cost of telephone calls rather than post. If you are working for an organisation, postage costs may be reduced by using *Freepost* for questionnaire return. This means that you pay only postage and a small handling charge for those questionnaires that are returned by post. However, the use of freepost rather than a stamp may adversely affect your response rates (see Table 11.5).

Data collected by questionnaires will, almost without exception, be analysed by computer. Virtually all cloud-based survey design, data collection and analysis software such as Qualtrics XM™ and SurveyMonkey™ allow you to design your questionnaire, capture, automatically code and save the data, and subsequently analyse the data within the software or export it as a data file for external analysis (Box 11.1). Data capture is most straightforward for closed questions where respondents select their answer from a prescribed list. Cloud-based survey software usually offers you the choice of exporting your data as either the actual text, or numeric codes (Box 11.1). For other questionnaires, responses will need subsequently to be coded, entered (typed) and saved in your analysis software (Section 12.4). As a rough rule, you should analyse questionnaire data by computer if they have been collected from 30 or more respondents.

11.3 Deciding what data need to be collected

Research design requirements

Unlike in-depth and semi-structured interviews (Chapter 10), the questions you ask in questionnaires need to be defined precisely prior to data collection. Whereas you can prompt and explore issues further with in-depth and semi-structured interviews, this will not be possible using questionnaires. In addition, the questionnaire offers only one chance to collect the data as it is often impossible to identify respondents or to return to collect additional information. This means that the time you spend planning precisely what data you need to collect, how you intend to analyse them (Chapter 12) and designing your questionnaire to meet these requirements is crucial if you are to answer your research question(s) and meet your objectives.

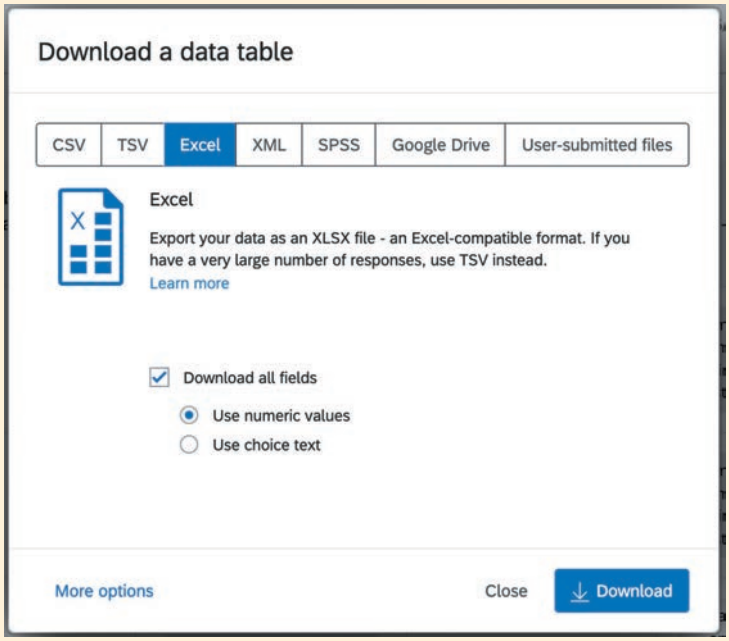
For most business and management research, the data you collect using questionnaires will be used for either descriptive or explanatory purposes. For questions where the main purpose is to describe a population's characteristics either at a fixed time or at a series of points over time to enable comparisons, you will normally need to deliver your questionnaire to a sample. The sample needs to be as representative and accurate as possible where it will be used to generalise about a population (Sections 7.4–7.6). You will also probably need to relate your findings to earlier research. It is therefore important that you select the appropriate characteristics to answer your research question(s) and to address your objectives. You will need to have:

- reviewed the literature carefully;
- discussed your ideas with colleagues, your project tutor and other interested parties.

Box 11.1 Focus on student research

Using cloud-based software to design a questionnaire

Ben's research project involved emailing a hyperlink to a Web questionnaire to small and medium-sized enterprise owners to discover how they defined small business success. He designed his questionnaire using the cloud-based survey software Qualtrics as this would either allow him to analyse his data within the software or download his data as a matrix (table) of numeric codes (values) and use analysis software such as an Excel spreadsheet, IBM SPSS Statistics or a database.



Source: Copyright © 2021 Qualtrics LLC. Used With Permission.

For research involving organisations, we have found it essential to understand the organisational context in which we are undertaking the research. Similarly, for international or cross-cultural research it is important to have an understanding of the countries and cultures in which you are undertaking the research. Without this it is easy to make mistakes, such as using the wrong terminology or language, and to collect useless data. For many research projects an understanding of relevant organisations can be achieved through browsing company websites (Section 8.2), observation (Sections 9.3 and 9.4) and in-depth and semi-structured interviews (Section 10.4).

Explanatory research is usually deductive, using data to test a theory or theories. This means that, in addition to those issues raised for descriptive research, you need to define the theories you wish to test as relationships between variables prior to designing your questionnaire. You will need to have reviewed the literature carefully, discussed your ideas

widely and conceptualised your own research clearly prior to designing your questionnaire (Ghauri et al. 2020). In particular, you need to be clear about which relationships you think are likely to exist between variables:

- a dependent variable that may change in response to changes or manipulations in other independent variables;
- an independent variable that, when changed or manipulated, may causes changes in dependent variables;
- a mediating variable that transmits the effect of an independent variable to a dependent variable;
- a moderating variable that affects the relationship between an independent variable and a dependent variable;
- a control variable that needs to be kept constant to avoid it influencing the effect of the independent variable on the dependent variable.

As these relationships (Table 5.4) are likely to be tested through statistical analysis (Sections 12.8 to 12.13) of the data collected by your questionnaire, you need to be clear about the detail in which they will be measured at the design stage. Where possible, you should ensure that questions are compatible with those used in other relevant research so that comparisons can be made (Box 11.2).



Box 11.2 Focus on management research

Developing compatible questions to enable comparisons

In their article in the *Industrial Relations Journal*, Felstead and colleagues (2019) conceive and develop a short measure of job quality that is compatible with existing national skills and employment surveys. In developing their measure, they argue that three principles apply. First, that job quality needs to comprise a set of work features that can enhance or diminish worker wellbeing. Second, it needs to focus on attributes of the worker's actual job and not their personal circumstances or background. Third, there are a variety of attributes, such as pay that have the capability of enhancing or reducing worker wellbeing.

As Felstead and colleagues wished to design a short, easy to use online quiz, they could only use a relatively small number of questions. They also wanted to allow quiz takers to benchmark their own answers with the findings from the representative national Skills and Employment Survey. This meant that they had to replicate as far as possible questions used in this survey.

Their resultant quiz comprised 21 questions. Of these 20 represented job demands and job resources using rating (scale) questions. Questions relating to job demands included 'How often does your job involve you working at very high speed?' For this question respondents were asked to choose one of seven responses ranging from 'never' to 'all of the time' (Felstead et al. 2019, p. 10). Questions relating to job resources, included 'How much influence do you *personally* have on deciding what tasks you are to do?' with the four possible responses ranging from 'none' to 'a great deal' (Felstead et al. 2019, p. 10). The final question, which was open ended, asked respondent to, in their own words, rate their job and explain their rating.

The quiz can be taken at https://howgoodismyjob.co.uk/

Types of data that can be collected

Dillman et al. (2014) distinguishes between three types of data that can be collected using questionnaires:

- factual and demographic;
- attitudes and opinions;
- behaviours and events.

These distinctions are important as they relate to the ease of obtaining accurate data and influence the way your questions are worded (Box 11.3). **Factual** and **demographic variables** contain data that are readily available to the respondent and are likely to, assuming the respondent is willing to disclose, be accurate. These variables include characteristics such as age, gender, marital status, education, occupation and income. They are used to explore how attitudes and opinions, and behaviours and events, differ, as well as to check that the data collected are representative of the total population (Section 7.5). **Attitude** and **opinion variables** contain data that respondents may have needed to think about before answering. They are likely to be influenced by the context in which the question was asked; recording how respondents feel about something or what they think or believe is true or false. **Behaviour** and **event variables** are also likely to be influenced by context. They contain data about what people did (behaviours) or what happened (events) in the past, is happening now, or will happen in the future.

Ensuring essential data are collected

A problem experienced by many students and organisations we work with is ensuring that data collected will enable the research question(s) to be answered and the objectives achieved. Although no method is infallible, one way is to create a **data requirements table** (Table 11.2). This summarises the outcome of a six-step process:

1. Decide whether the main outcome of your research is descriptive or explanatory.
2. Use your aim and objectives or overarching research question(s) to develop more specific investigative questions about which you need to gather data, noting how each relates to theory and key concepts in the literature.
3. Repeat the second stage if you feel that your investigative questions are not sufficiently precise.
4. Keeping in mind relevant theory and key concepts in the literature, identify the variables about which you must collect data to answer each investigative question.
5. Establish the level of detail required from the data for each variable.
6. Use (with acknowledgement) or adapt existing measurement questions or develop new questions to capture the data at the level required for each variable.

Investigative questions state with precision and depth those questions you need to answer in order to address satisfactorily overarching research question to meet your aim and objectives (Sections 2.5 and 2.6). They need to be generated with regard to your research question(s) and objectives. Some investigative questions may need subdividing into more detailed investigative questions. For each you need to be clear whether you are interested in facts/demographics, attitudes/opinions or behaviours/events (discussed earlier), as what appears to be a need to collect one sort of variable frequently turns out to be a need for another. We have found theory and key concepts from the literature, discussions with interested parties and pilot studies to be of help here.

Box 11.3 Focus on student research

Opinion, behaviour and attribute questions

Emily was asked by her employer to undertake an anonymous survey of financial advisors' ethical values. In particular, her employer was interested in the advice given to clients. After some deliberation she came up with three questions that addressed the issue of putting clients' interests before their own:

Emily's choice of question or questions to include in her questionnaire was dependent on whether she needed to collect data on financial advisors' attitudes, opinions, or behaviours. Question 2 would collect data on respondents' opinions about financial advisors placing their clients' interest before their own. This question asks respondents how they feel. In contrast, question 3 asks respondents whether financial advisors in general place their clients' interests before their own. It is therefore concerned with their individual opinions regarding how financial advisors act. Question 4 focuses on how often the respondents placed their clients' interests before their own. Unlike the previous questions, it is concerned with their actual behaviour rather than their opinion.

2 How do you feel about the following statement? 'Financial advisors should place their clients' interest before their own.'

	strongly agree	❑
	mildly agree	❑
(please tick the appropriate box)	neither agree nor disagree	❑
	mildly disagree	❑
	strongly disagree	❑

3 In general, do financial advisors place their clients' interests before their own?

	always yes	❑
	usually yes	❑
(please tick the appropriate box)	sometimes yes	❑
	seldom yes	❑
	never yes	❑

4 How often do you place your clients' interests before your own?

	81–100% of my time	❑
	61–80% of my time	❑
(please tick the appropriate box)	41–60% of my time	❑
	21–40% of my time	❑
	0–20% of my time	❑

To answer her research questions and to meet her objectives Emily also needed to collect data to explore how ethical values differed between subgroupings of financial advisors. One theory she had was that ethical values were related to age. To test this, she needed to collect demographic data on respondents' ages. After some deliberation she came up with question 5:

5 How old are you?

	Less than 30 years	❑
	30 to less than 40 years	❑
(please tick the appropriate box)	40 to less than 50 years	❑
	50 to less than 60 years	❑
	60 years or over	❑

Table 11.2 Data requirements table

Research aim/objectives/question(s):

Type of research:

Investigative questions	Variable(s) required	Detail in which data measured	Relation to theory and key concepts in the literature	Measurement question included in questionnaire ✓

You should then identify the variables about which you need to collect data to answer each investigative question and decide the level of detail at which these will be measured. Again, your literature review and associated research can suggest possibilities. However, if you are unsure about the detail needed you should measure at a more precise level. Although this is more time-consuming, it will give you flexibility in your analyses. In these you will be able to use analysis software to group or combine data (Section 12.2).

Once your data requirements table is complete (Box 11.4), it must be checked to make sure that all data necessary to answer your investigative questions are included. When



Box 11.4 Focus on student research

Data requirements table

As part of his work placement Greg was asked to discover employees' attitudes to the outside smoking area at his organisation's restaurants and bars. Discussion with senior management and colleagues at the restaurant where he worked and reading relevant literature helped him to firm up his objective and investigative questions and the level of detail in which the data were measured. In addition, he wanted to be able to compare his findings with earlier research by Jackson and Taylor (2015) in the journal *Tourism and Hospitality Research* and Louka et al. (2006) in the *Journal of Health Psychology*.

One of his objectives is included in the extract from his table of data requirements:

- **Research objective:** To establish employees' attitudes to the outside smoking area at restaurants and bars.
- **Type of research:** Predominantly descriptive, although wish to examine differences between restaurants and bars, and between different groups of employees.

Investigative questions	***Variable(s) required***	***Detail in which data measured***	***Relation to theory and key concepts in literature***	***Check included in questionnaire ✓***
• *Do employees feel that restaurants and bars should provide an outside smoking area for smokers? (opinion)*	• *Opinion of employee to the provision of an outside smoking area for smokers*	• *Feel . . . very strongly that it should, quite strongly that it should, no strong opinions, quite strongly that it should not, very strongly that it should not [NB will need separate questions for restaurants and for bars]*		



Box 11.4 Focus on student research (*continued*)

Investigative questions	*Variable(s) required*	*Detail in which data measured*	*Relation to theory and key concepts in literature*	*Check included in questionnaire ✓*
• *Do employees' opinions differ depending on . . .*	• *(Opinion of employee – outlined above)*	• *(Included above)*		
• *. . . whether or not a smoker? (behaviour)*	• *Smoker*	• *Smoker, former smoker or non-smoker*	• *use these 3 groups from Jackson and Taylor (2015)*	
• *. . . nationality (factual)*		• *Country of origin*	• *Louka et al. (2006) highlights differences between nationalities*	
• *How representative are the responses of employee? (demographic)*	• *Gender of employee* • *Job* • *Number of hours worked*	• *Male, female* • *Will need to obtain a list of jobs from the organisation* • *Actual hours worked on week of questionnaire*	• *Note: UK government defines full-time work as at least 35 hours a week*	

checking, you need to ensure that only data which are essential to answering your research question(s) and meeting your objectives are included. The final column is to remind you to check that your questionnaire includes a (measurement) question that collects the precise data required!

11.4 Questionnaire validity and reliability

The validity and reliability of the data you collect (and the response rate you achieve) depend, to a large extent, on the design of your questions, the structure of your questionnaire and the rigour of your pilot testing (Section 11.7). A valid questionnaire will enable accurate data that actually measure the concepts you are interested in to be collected, while one that is reliable will mean that these data are collected consistently. Hardy and Ford (2014) argue that even if everyone understands a questionnaire, they may interpret it in different ways due to three forms of miscomprehension:

- instructional, where instructions such as 'please rank the following in order of importance, ranking the most important 1, the next 2 and so on' are not followed; the respondent doing something else such as ranking all as 1;
- sentinel, where the respondent enriches or depletes the syntax of a question; for example, a respondent answers a question about 'management' as her or his 'line manager';
- lexical, where the respondent deploys a different meaning to a word to that intended by the researcher; for example, where the word 'satisfied' in a question is intended to refer to obligations being fulfilled, but is interpreted as gratification.

Building on these ideas it is therefore crucial that the instructions given, and questions asked, are acted on or understood by the respondent in the way intended by the researcher. Similarly, the answers given by the respondent need to be understood by the researcher in the way intended by the respondent. This means the design stage is likely to involve substantial rewriting in order to ensure that the respondent follows instruction and decodes your questions in the way you intended (Section 11.5).

Establishing validity

Internal and external validity

When discussing validity researchers often talk about internal and external validity. **Internal validity** in relation to questionnaires refers to the ability of your questionnaire to measure what you intend it to measure. It therefore focuses on the ability of your questionnaire to represent the reality of what you are measuring and, as a consequence, your conclusions are warranted, and alternative explanations eliminated. In contrast, **external validity** is about the extent to which the findings from your questionnaire are generalisable to other real world relevant contexts. This presents you with a problem as, if you actually knew the reality of what you were measuring, there would be no point in designing your questionnaire and using it to collect data! Researchers get around this problem by looking for other relevant evidence that supports the answers found using the questionnaire, relevance being determined by the nature of their research question and their own judgement.

Self-generated validity and ecological validity

Researchers design questions on the premise that what they are measuring is of interest, relevant and understood by those responding. However, where this is not the case, it becomes possible for you to develop a question or series of questions to measure a construct that did not exist in the respondents' minds before the received and began to complete the questionnaire. **Self-generated validity** occurs when, in response to your questions, the respondent generates answers about a construct or topic for which they had no prior knowledge or about which they had no views. In generating these answers they, in effect, produce the thought processes predicted by theory (Forbes and Avis 2020). This means their attitudes or opinions are constructed during the research process by answering the questions, their responses to earlier questions being used as a basis for subsequent responses. Such research is argued to be ecologically invalid as, although respondents offer an opinion, they had no knowledge or interest prior to reading the questions. Their opinion therefore has no basis other than the research process as it is the process that has produced the findings. This is important as findings from research with low ecological validity have little utility in real life settings. In relation to questionnaires, **ecological validity** therefore

refers to whether the questions actually measure an attitude or behaviour that can be generalised to and reflect realistic real-life situations.

Content validity

Often, when discussing the validity of a questionnaire, researchers refer to content validity, criterion-related validity and construct validity. **Content validity** refers to the extent to which the measurement device, in our case the questions in the questionnaire, provides adequate coverage of the investigative questions. Judgement of what is 'adequate coverage' can be made in a number of ways. One involves careful definition of the research through the literature reviewed and, where appropriate, prior discussion with others. Another is to use a panel of individuals to assess whether each question in the questionnaire is 'essential', 'useful but not essential' or 'not necessary'.

Criterion validity

Criterion-related validity, sometimes known as **predictive validity**, is concerned with the ability of the questions (measures) to make accurate predictions. This means that if you are using the data collected by questions within your questionnaire to predict customers' future buying behaviours then a test of these questions' criterion-related validity will be the extent to which the responses predict these customers' actual buying behaviours. In assessing criterion-related validity, you will be comparing the data from your questionnaire with that specified in the criterion in some way. Often this is undertaken using statistical analysis such as correlation (Section 12.6).

Construct, convergent and discriminant validity

Construct validity refers to the extent to which a set of questions (known individually as scale items and discussed later in this section) actually measures the presence of the construct you intended them to measure. It is therefore dependent upon lexical and sentinel miscomprehension for each scale item being minimised. The term is normally used when referring to constructs such as attitude scales (Box 11.5), customer loyalty and the like. It can be thought of as answering the question: 'How well can I generalise from this set of questions to the construct I am trying to measure?' Because validation of such constructs against existing data is difficult, other methods are used. Where different scales are used to measure the same construct, the overlap (or correlation) between these scales is known as **convergent validity**. In contrast, where different scales are used to measure theoretically distinct constructs, an absence of overlap (or correlation) between the scales means they are distinctive and have **discriminant validity**. These are discussed in more detail in a range of texts, including Bloomberg et al. (2014).

Testing for reliability

As we noted earlier, reliability refers to consistency. Although for a questionnaire to be valid it must be reliable, this is not sufficient on its own. Respondents may consistently interpret a question in your questionnaire in one way, when you mean something else! This might be because of lexical or sentinel miscomprehension for a specific question. Consequently, although the question is reliable, this does not really matter as it has no internal validity and so will not enable your research question to be answered. Reliability is therefore concerned with the robustness of your questionnaire and, in particular, whether or not it will produce consistent findings at different times and in different contexts, such as with different samples or, in the case of a researcher-completed questionnaire, with different research assistants or field workers. Alternatively, respondents may answer inconsistently due to instructional miscomprehension. Between 5 and 9 per cent of respondents

do not read instructions that accompany a questionnaire, this being due to familiarity with the task of completing questionnaires (Hardy and Ford 2014).

Mitchell (1996) outlines three common approaches to assessing reliability, in addition to comparing the data collected with other data from a variety of sources. Although the analysis for each of these is undertaken after data collection, they need to be considered at the questionnaire design stage. They are:

- internal consistency;
- alternative form;
- test re-test.

Internal consistency

Internal consistency involves correlating the responses to questions in the questionnaire with each other. However, it is nearly always only used to measure the consistency of responses across a subgroup of the questions. There are a variety of methods for calculating internal consistency, of which one of the most frequently used is **Cronbach's alpha**. This statistic is usually used to measure the consistency of responses to a sub-set of questions (scale items) that are combined as a scale (discussed in Section 11.5) to measure a particular concept. It consists of an alpha coefficient with a value between 0 and 1. Values of 0.7 or above indicate that the questions combined in the scale internally consistent in their measurement.

Alternative form

Alternative form offers some sense of the reliability within your questionnaire through comparing responses to alternative forms of the same question or groups of questions. Where questions are included for this purpose, usually in longer questionnaires, they are often called 'check questions'. However, it is often difficult to ensure that these questions are substantially equivalent. Respondents may suffer from fatigue owing to the need to increase the length of the questionnaire, and they may spot the similar question and just refer back to their previous answer! It is therefore advisable to use check questions sparingly.

Test re-test

The final approach is test re-test. This estimate of reliability is obtained by correlating data collected with those from the same questionnaire collected under as near equivalent conditions as possible. The questionnaire therefore needs to be delivered and completed twice by respondents. This may create problems, as it is often difficult to persuade respondents to answer the same questionnaire twice. In addition, the longer the time interval between the two questionnaires, the lower the likelihood that respondents will answer the same way. We therefore recommend that you use this method only as a supplement to other methods. Further details of this and other approaches can be found in Mitchell (1996) and in books discussing more advanced statistics and analysis software such as Field (2018).

11.5 Designing individual questions

The design of each question should be determined by the data you need to collect (Section 11.3). When designing individual questions researchers do one of three things (Bourque and Clark 1994):

- adopt questions used in other questionnaires;
- adapt questions used in other questionnaires;
- develop their own questions.

Adopting or adapting questions is far less time-consuming than the lengthy process of developing your own questions, providing you can still collect the data you need to answer your research question(s) and to meet your objectives. It allows you to replicate, or to compare your findings with, another study so that reliability to be assessed. Some cloud-based survey software includes questions that you may use. Alternatively, you may find questions and coding schemes that you feel will meet your needs in existing questionnaires, journal articles or in Internet-based question banks, such as the UK Data Service's Variable and Question Bank (2021). This provides searchable access to over 250,000 questions drawn from a range of UK and cross-national surveys since the mid-1990s.

Using existing questions is often sensible as it allows you to compare your findings with other research, although you need to be careful and should still pilot test your questionnaire (Section 11.7). Questions designed by researchers have been designed with a specific purpose in mind, which may not meet your research aim and objectives. Inevitably they cannot take account of any changes that have occurred since the questions were devised and tested. Unfortunately, there are a vast number of poorly worded or biased questions in circulation, so always assess each question carefully. In addition, you will need to check whether you require permission to use these questions because of copyright. Questions are usually subject to copyright unless there is an express indication that these may be used. Even where no formal copyright has been asserted you should, where possible, contact the author and obtain permission. In your project report you should always state where you obtained the questions and give credit to their author.

Types of question

Initially, you need only consider the type, wording and length of individual questions rather than the order in which they will appear on the form. Clear wording of questions using terms that will be familiar to, and understood by, respondents can improve the validity of the questionnaire. Shorter questions are easier to understand than longer ones and questions should, ideally, be no longer than 20 words, excluding possible answers (Sekeran and Bougie 2019). Most questionnaires include a combination of open and closed questions. **Open questions**, sometimes referred to as open-ended questions, allow respondents to give answers in their own way (Fink 2016). **Closed questions**, sometimes referred to as closed-ended questions (Fink 2016) or **forced-choice questions** (De Vaus 2014), provide two or more alternative answers from which the respondent is instructed to choose. Closed questions are usually quicker and easier to answer, as they require minimal writing. Responses are also easier to compare as they have been predetermined. However, if these predetermined responses are misunderstood by respondents, then they will not be valid (Hardy and Ford 2014). Within this section we highlight six types of closed question that we discuss later:

- list, where the respondent is offered a list of items, any of which may be selected;
- category, where only one response can be selected from a given set of categories;
- ranking, where the respondent is asked to place something in order;
- rating scale, in which a rating device is used to record responses;
- quantity, to which the response is a number giving the amount;
- matrix, where responses to two or more questions can be recorded using the same grid;

as well as:

- creating scales to measure constructs by combining individual rating scale questions.

We also consider issues associated with translating questions into other languages and pre-coding responses.

Open questions

Open questions are used widely in in-depth and semi-structured interviews (Section 10.7). In questionnaires they are useful if you are unsure of the response, such as in exploratory research, when you require a detailed answer, when you want to find out what is uppermost in the respondent's mind or do not wish to list all possible answers (Box 11.5). With such questions, the precise wording of the question and the amount of space determine partially the length and fullness of response. However, if you leave too much space the question becomes off-putting. Respondents tend to write more when answering open questions on online questionnaires than the paper based equivalent, although they are mainly just more verbose rather than offering more insights (Saunders 2012). An example of an open question (from a self-completed questionnaire) is:

6 Please list up to three things you like about your current employment:

1 .....
2 .....
3 .....

This question collects data about each respondent's opinion of what they like about their current employment. Thus, if salary had been the reason uppermost in their mind this would probably have been recorded first. When questionnaires are returned by large numbers of respondents, responses to open questions are extremely time consuming to code (Section 12.2). For this reason, it is usually advisable to keep their use to a minimum.

List questions

List questions offer the respondent a list of responses from which she or he can choose either one or more responses. Such questions are useful when you need to be sure that the respondent has considered all possible responses. However, the list of responses must be defined clearly and be meaningful to the respondent. The response categories you can use vary widely and include 'yes/no', 'agree/disagree' and 'applies/does not apply' along with 'don't know' or 'not sure'. If you intend to use what you hope is a complete list, you may wish to add a catch-all category of 'other'. This has been included in question 7, which collects data on respondents' religion.

7 What is your religion?
(Please tick ✓ the appropriate box)

No religion	❑
Christian (including Church of England, Catholic, Protestant and all other Christian denominations)	❑
Buddhist	❑
Hindu	❑
Jewish	❑
Muslim	❑
Sikh	❑
Any other religion	❑

Please describe .....

Question 7 collects demographic data on religion, the respondent ticking (checking) the response that applies. In this list question, the common practice of not asking respondents to both check those that do apply and those which do not has been adopted. Consequently, respondents are not asked to indicate those religions to which they do not belong. If you choose to do this, beware: non-response could also indicate uncertainty, or for some questions that an item does not apply! It is also likely that respondents will not read the list from which they have to select appropriate responses so carefully (Dillman et al. 2014). For researcher-completed questionnaires, it is often helpful to present the respondent with a prompt card listing all responses.



Box 11.5 Focus on research in the news

Bank risk officers put climate change at the top of the agenda

A survey that got our attention

By Billy Nauman

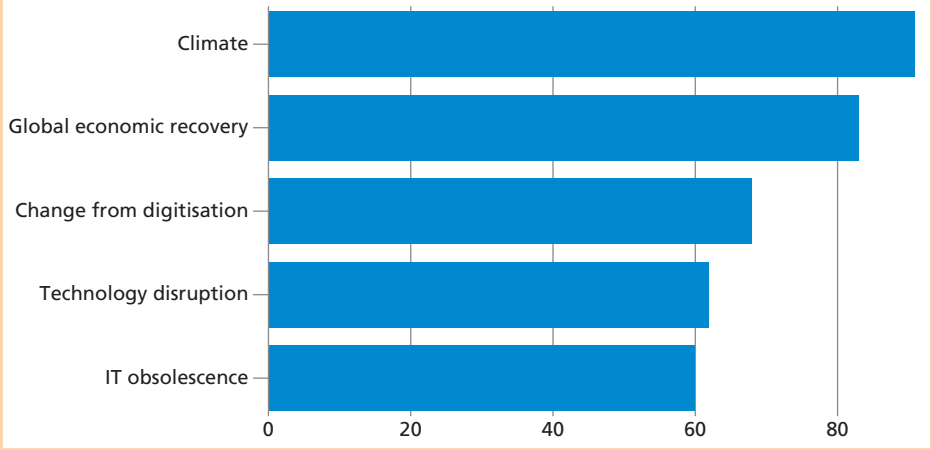
On any given day, our inboxes here at Moral Money are flooded with approximately a million (give or take) pitches about ESG surveys or reports. And truth be told, it is rare we even open them.

Apologies to all the PR people reading this and shaking their fists in rage, but there are so many of you, so few of us and not enough hours in the day. The big problem is most of these pitches follow a similar formula: [Group X] polled [Group Y] and found soaring interest in [insert ESG topic here]. Rarely do they provide any compelling information we haven't already seen.

Sometimes, though, one will jump out and grab our attention, such as this new survey of bank risk managers from EY and the Institute of International Finance (IIF). In their poll, they found that interest in climate risk is (yes) soaring among banks. But what stood out about this survey is that it was not designed specifically to gauge opinions on ESG. The pollsters simply asked banks' risk officers what they thought was the biggest threat to their business. And climate organically popped up at the top of the heap.

Over a one-year timeframe, climate ranks third behind credit risk and cyber security. And over the next five years, risk officers see climate as the top problem banks will have to deal with.

This is the 11th year EY and the IIF have run this poll, and climate risk really 'came out of no-where', said Mark Watson, financial services managing director of EY Americas. One 'blindingly obvious' reason for this is the increase of extreme weather events such as wildfires and hurricanes that can interrupt day-to-day operations, he said. Banks



Source: EY, Institute of International Finance
© FT

are also concerned about upcoming climate stress tests from central banks, stranded assets and the transition risks that will accompany governments' moves to crack down on emissions. However, the heightened awareness is not all negative. Watson said banks were looking at climate more closely now because they saw a big opportunity. "I think people finally realise in financial services, we do not get to a zero-carbon economy without finance."

FT *Source:* Abridged from 'Bank risk officers put climate change at the top of the agenda', Billy Nauman, *Financial Times,* 25 June 2021. Copyright © 2021 The Financial Times Ltd

Category questions

In contrast, **category questions** are designed so that each respondent's answer can fit only one category. Such questions are particularly useful if you need to collect data about behaviour or attributes. The number of categories that you can include without affecting the accuracy of responses is dependent on the completion mode and questionnaire medium. Self-completed questionnaires and telephone questionnaires should usually have no more than five response categories (Fink 2016). Researcher-completed questionnaires can have more categories provided that a prompt card is used (Box 11.6) or, as in question 8, the researcher categorises the responses.

Box 11.6 Focus on student research

Use of a prompt card as part of a face-to-face questionnaire

As part of her face-to-face questionnaire, Jemma asked the following question:

> ***Which of the following tourist sites did you visit while staying in Cusco?***

[Show respondent cards 1 and 2 with the pictures of tourist sites. Read out names of the tourist sits one at a time. Record their response with a ✓ in the appropriate box].

	Visited	*Not visited*	*Not sure*
Maras	❑	❑	❑
Moray	❑	❑	❑
Misminay Andean Village	❑	❑	❑
Sacssaywaman	❑	❑	❑
Priory of Santa Domingo	❑	❑	❑
Ollantaytambo	❑	❑	❑
Inca Pachacutec Monument	❑	❑	❑
Qorikancha	❑	❑	❑
Pukapora (Red Fort)	❑	❑	❑
The Sacred Valley	❑	❑	❑

Jemma gave card 1 (below) and subsequently card 2, both of which were A4 size, to each respondent, reading out the name of each tourist site and pointing to the photograph. She collected both cards after the question had been completed.


1. Maras


2. Moray


3. Misminay Andean village


4. Sacsaywaman


5. Priory of Santa Domingo


6. Ollantaytambo

Source: Copyright © 2018 Mark NK Saunders.

8 How often do you visit this retail park?

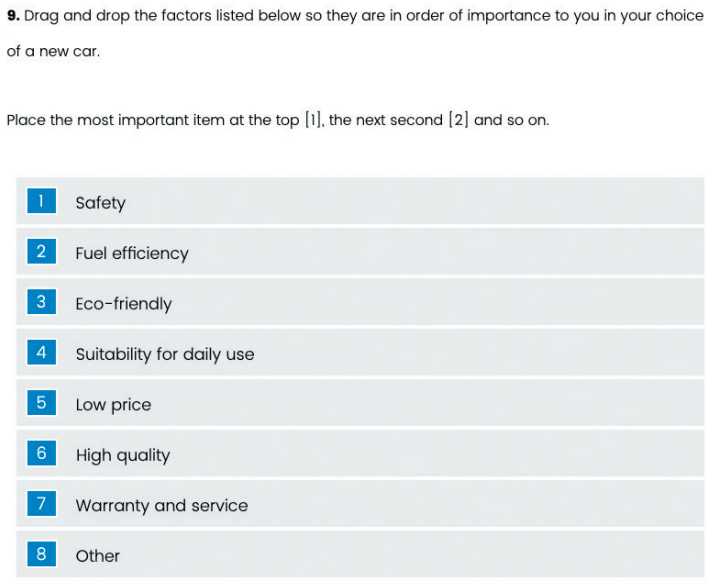
[Researcher: listen to the respondent's answer and tick ✓ as appropriate.]

❑	First visit	2 or more times a week	❑
❑	Once a week	Less than once a week to fortnightly	❑
❑	Less than fortnightly to once a month	Less often	❑

You should arrange responses in a logical order so that it is easy to locate the response category that corresponds to each respondent's answer. Your categories should be mutually exclusive (not overlapping) and should cover all possible responses. The layout of your questionnaire should make it clear which boxes refer to which response category by placing them close to the appropriate text.

Ranking questions

A **ranking question** asks the respondent to place things in rank order. This means that you can discover their relative importance to the respondent. In question 9, taken from an online questionnaire created in Qualtrics, the respondents are asked their opinions about the relative importance of a series of features when choosing a new car. The catch-all feature of 'other' is included to allow respondents to add one other feature, a subsequent question asking them to describe this.



Source: Copyright © 2021 Qualtrics LLC. Used with permission.

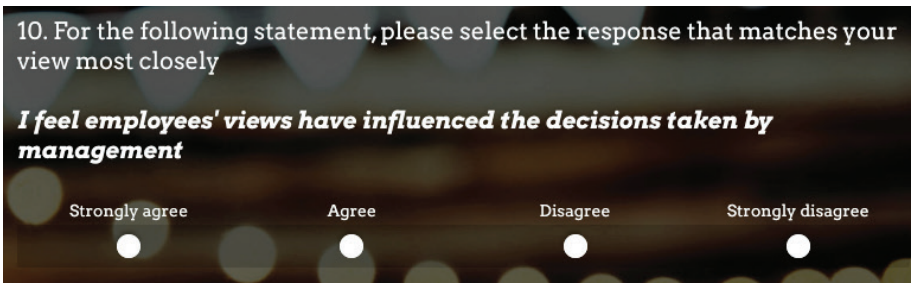
With such questions, you need to ensure that the instructions are clear and will be understood by the respondent. In general, respondents find that ranking more than seven items takes too much effort, reducing their motivation to complete the questionnaire, so you should keep your list to this length or shorter (Bloomberg et al. 2014). Respondents can rank accurately only when they can see or remember all items. While this is straightforward for self-completed questions, providing all items are visible on the same screen or page, for researcher completed questionnaires it can be more difficult. Prompt cards (Box 11.6) on which you list all of the features to be ranked are one solution, but for telephone questionnaires you need to ask respondents to rank fewer items, as they will need to rely on their memory.

Rating scale questions

Rating scale questions are often used to collect opinion data. They most frequently use the **Likert-style rating** in which the respondent is asked how strongly they agree or disagree

with a statement or series of statements, usually on a four-, five-, six- or seven-point rating scale (Box 11.7). Coherent sets of rating scale questions are often combined to create a scale to measure a concept or construct, each question being termed a scale item (discussed later in this section). Statements should also include both positive and negative statements so as to ensure that the respondent reads each one carefully and thinks about which response box to tick. Possible responses to rating questions should be presented in a straight line (such as in question 10) rather than in multiple lines or columns, as this is how respondents are most likely to process the data (Dillman et al. 2014). If you intend to use a series of statements, you should keep the same order of response categories to avoid confusing respondents (Dillman et al. 2014). You should also, unlike in the opening vignette where whichever response category is selected the experience is at least 'OK', ensure response categories reflected the full spectrum of possible answers.

Question 10 (created using the cloud-based survey development software SurveyMonkey™) has been taken from an online questionnaire to an organisation's employees and is designed to collect opinion data. In this rating question, an even number of



Source: Question created by SurveyMonkey™, Momentive Inc. (2021) San Mateo, California, USA

Box 11.7 Focus on management research

Eyes wide shut? Understanding and managing consumers' visual processing of country-of-origin clues

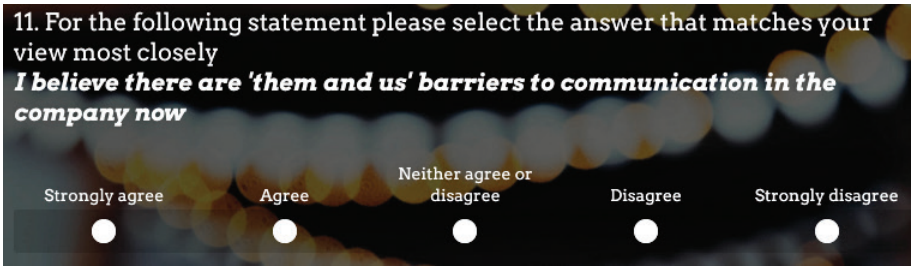
In a recent article in the *British Journal of Management*, Hakias and colleagues (2021) report on three eye-tracking experiments they undertook to investigate whether consumers naturally detected country-of-origin labels, whether such detection influences subsequent behavioural intentions and whether visual attention to these labels can be externally motivated.

In one of their eye-tracking experiments, after being exposed to same category products with country-of-origin labels 'made in Romania' and 'made in Switzerland', participants were asked to indicate their purchase intentions. These were recorded their answers using a rating of 1 through 7, where 1 = 'not at all likely', and 7 = 'very likely'.

Those involved in the experiment also answered four questions comprising an existing four-item scale devised by Roth and Romeo (1992) to measure country image. Scale items assessed perceived innovativeness, design, prestige and workmanship of the country on a scale on 1 through 7, where 1 = 'very low', and 7 = 'very high'; and example question being 'How do you perceive the innovativeness of products that originate from Switzerland?'.

Hakias and colleagues found customers did notice country-of-origin cues, these predicting purchase intentions where at least 356 milliseconds had been spent looking at them.

points (four) has been used to force the respondent to express their feelings towards the statement by clicking on the 'radio button' under the response that matches their view most closely. By contrast, question 11, also from an online questionnaire created using SurveyMonkey™, contains an odd number of points (five). This inclusion of a neutral point allows the respondent to 'sit on the fence' by selecting the middle 'neither agree nor disagree' category when considering an implicitly negative statement. An alternative, the phrase 'not sure' is often used as it is less threatening to the respondent than admitting they do not know. This rating question is designed to collect data on employees' opinions of the current situation.



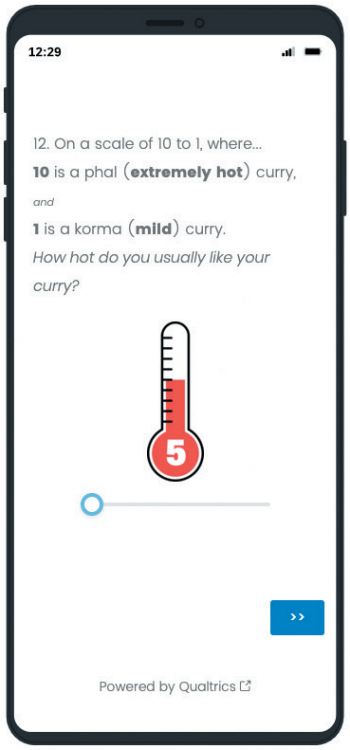
Source: Question created by SurveyMonkey™, Momentive Inc. (2021) San Mateo, California, USA

Both questions 10 and 11 are a balanced rating scale questions as the possible answers are reflected around either an implicit (question 10) or an explicit (question 11) neutral point. The alternative is an unbalanced rating scale, such as question 12, which does not have a neutral point.

You can expand this form of rating question further to record finer shades of opinion, a variety of which are outlined in Table 11.3. However, respondents to telephone questionnaires find it difficult to distinguish between values when rating more than five points plus 'don't know'. In addition, there is little point in collecting data for seven or nine response categories, where these are subsequently combined in your analysis (Chapter 12). Colleagues and students often ask us how many points they should have on their rating scale. This is related to the likely measurement error. If you know that your respondents can only respond accurately to a three-point rating, then it is pointless to have a finer rating scale with more points!

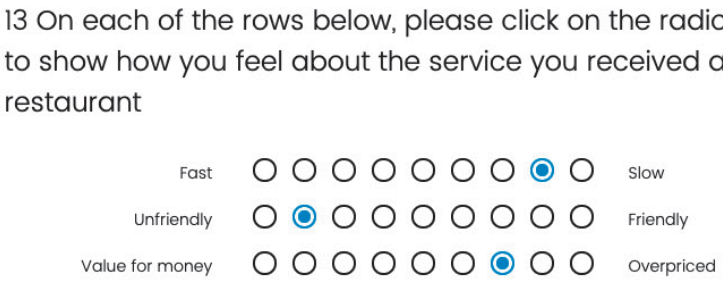
In question 12 (created in Qualtrics and optimised in the software for completion on a mobile phone) a respondent's opinion – how they usually like their curry – is captured on a 10-point numeric rating scale. In such rating questions it is important that the numbers reflect the answer of the respondent. Thus, 1 reflects a mild curry (korma) and 10 an extremely hot curry (phal), the number increasing as the temperature increases. Only these end categories (and sometimes the middle) are labelled, and these are known as self-anchoring rating scales. As in this question, a graphic that alters as the slider is moved can be used to reflect the rating scale visually and aid the respondent's interpretation. The use of a slider has been shown to have no impact on responses when compared to more traditional radio-button formats (Roster et al. 2015) as in question 11. An additional category of 'not sure' or 'don't know' can be added and should be separated slightly from the rating scale.

Another variation is the **semantic differential rating question**. These are often used in consumer research to determine underlying attitudes. The respondent is asked to rate a single object or idea on a series of bipolar rating scales. Each bipolar scale is described



Source: Copyright © 2021 Qualtrics LLC. Used With Permission.

by a pair of opposite adjectives (question 13), designed to anchor respondents' attitudes. For these rating scales, you should vary the position of positive and negative adjectives from left to right to reduce the tendency to read only the adjective on the left (Bloomberg et al. 2014).



Source: Copyright © 2021 Qualtrics LLC. Used with permission.

Table 11.3 Response anchor categories for different types of rating scale questions

Type of rating	Five categories	Seven categories
Agreement	strongly agree	strongly agree
	agree	agree/moderately agree/mostly agree*
	neither agree nor disagree/not sure/uncertain/unsure/undecided/no opinion*	slightly agree/somewhat agree
		neither agree nor disagree/not sure/uncertain/unsure/undecided/no opinion*
	disagree	slightly disagree/somewhat disagree
	strongly disagree	disagree/moderately disagree/mostly disagree*
		strongly disagree
Amount	far too much/nearly all/very large*	far too much/nearly all/very large*
	too much/more than half/large*	too much/more than half/large*
	about right/about half/some*	slightly too much/quite large*
		about right/about half/some*
	too little/less than half/small*	slightly too little/quite small*
	far too little/almost none/not at all*	too little/less than half/small*
		far too little/almost none/not at all*
Frequency	all the time/always*	all the time/always/every time*
	frequently/very often/most of the time/almost every time*	almost all the time/almost always/usually*
		frequently/very often/most of the time*
	sometimes/about as often as not/about half the time/occasionally*	sometimes/about as often as not/about half the time*
		seldom/occasionally
	rarely/seldom/less than half the time/almost never/*	almost never/practically never/rarely*
		never/not at all*
	never/practically never*	
Likelihood	very/almost always*	extremely/almost always*
	good/often*	very/usually*
	reasonable/sometimes*	moderately/often*
	slight/bit/seldom*	quite/reasonable/occasionally*
	none/not at all/rare*	somewhat/rarely *
		slight/bit/usually not*
		none/not at all/almost never*

*Response dependent on question.
Source: Developed from Tharenou et al. (2007), Vagias (2006), and authors' experience

Quantity questions

The response to a **quantity question** is a number, which gives a factual amount of a characteristic. For this reason, such questions tend to be used to collect behaviour or attribute data. A common quantity question, which collects attribute data, is:

14 What is your year of birth?

(for example, for 1997 write:)

1	9	9	7

Because the response to this question data is coded by the respondent, the question can also be termed a **self-coded** question.

Matrix questions

A **matrix** or grid of questions enables you to record the responses to two or more similar questions at the same time. As can be seen from question 15, created in SurveyMonkey™, questions are listed down the left-hand side of the page, and responses listed across the top. The appropriate response to each question is then recorded in the cell where the row and column meet. Although using a matrix saves space, Dillman et al. (2014) suggests that respondents may have difficulties comprehending these designs and that they are a barrier to response.



Source: Question created by SurveyMonkey™, Momentive Inc. (2021) San Mateo, California, USA

Using scales

Rating scale questions have been combined into scales to measure a wide variety of concepts such as customer loyalty, service quality, job satisfaction and Country image (Box 11.7). Referred to as **constructs**, these are attributes that can be inferred and assessed using a number of indicators but are not directly observable. Researchers infer the existence

of a construct using a series of measures (rating questions), these being combined into a scale that measures the construct. For each construct the resultant **scale** is represented by a composite scale score created by combining the scores for each of the rating questions. Each rating scale question is often referred to as a **scale item**. In the case of a simple Likert-type scale, for example, the scale (or composite) score for each case would be calculated by summing the scores of each of the rating questions (items) selected (De Vaus 2014).

Such aggregations are based on assumption that the scores attributed to each response (for example: 'not at all' = 1, 'slight' = 2, 'reasonable' = 3, 'good' = 4, 'very' = 5) are interval level data (Figure 12.1). This assumption has been made since Murphy and Likert developed their method of summative ratings in 1937! When aggregating scale item scores, it is important to ensure that scores for any items worded negatively are reverse coded. Using **reverse coding**, also known as **reverse scoring**, means high values will indicate the same type of response on every item. A detailed discussion of creating scales, including those by Likert and Guttman, can be found in DeVellis (2017). However, developing and validating your own scales is complex and time consuming. It therefore usually makes sense to use or adapt existing scales wherever possible (Schrauf and Navarro 2005). Since scaling techniques were first used in the 1930s, literally thousands of scales have been developed to measure attitudes and personality dimensions and to assess skills and abilities. Details of an individual scale can often be found by following up references in an article reporting research that uses that scale. In addition, there are a wide variety of handbooks that list these scales (e.g. American Psychological Association 2021; Bruner 2021). These scales can be used in your own research providing they:

- are valid for your research;
- can be operationalised by your intended respondents.

Box 11.8 provides a checklist to evaluate the suitability of existing scales for your own research.



Box 11.8 Checklist

Evaluating the suitability of existing scales

✔ Is the scale valid for your research?
- Does the scale measure an appropriate construct for your research question?
- Is the literature used to support the development of the scale robust?
- Has the scale been empirically tested and validated?
- Are the literature sources referenced?
- Are the scale items justified fully by clear arguments?

✔ Can the scale be operationalised by the intended respondents?
- Does the scale rely on putting the respondents into a scenario? In other words, do the respondents need to be thinking about something particular before responding to the scale items? (This may be appropriate in some cases such as when researcher is trying to understand attitude formation.)
- Are each of the scale items and the predetermined, forced choice responses likely to be easy for the intended respondents to answer based upon their own experiences and daily lives?

Source: Developed by Sarah Forbes and Mark N.K. Saunders

It is worth remembering that you should only make amendments to the scale where absolutely necessary as significant changes could impact upon both the validity of the scale and, subsequently, your results! You also need to be aware that existing scales may be subject to copyright constraints. Even where there is no formal copyright, you should, where possible, contact the author and ask for permission. In your project report you should note where you obtained the scale and give credit to the author.

Question wording

The wording of each question will need careful consideration to ensure that the responses are valid – that is, measure what you think they do. Your questions will need to be checked within the context for which they were written rather than in abstract to ensure they are not misread and that they do not privilege a particular answer (Box 11.9). Given this, the checklist in Box 11.10 should help you to avoid the most obvious problems associated with wording that threatens the validity of responses.

Box 11.9 Focus on research in the news

The tale of the Brexit referendum question

By David Allen Green

The referendum question was: 'Should the United Kingdom remain a member of the European Union or leave the European Union?' The question was originally planned to be: 'Should the United Kingdom remain a member of the European Union?' The Electoral Commission assessed the original question and decided: 'We have previously recommended the possibility of either a yes/no question for use at a referendum on European Union membership. However, in this assessment we have heard clearer views, particularly from potential campaigners to leave the European Union, about their concerns regarding the proposed yes/no question. Our assessment suggests that it is possible to ask a question which would not cause concerns about neutrality, while also being easily understood.' The commission thereby recommended the wording used, and this was accepted by government and parliament.

Research had indicated there could be a difference. 'It seemed to reveal there was 4 per cent in what the question was, whether it was a "yes/no" question or a "remain/leave" question.'

The referendum produced a 51.89 per cent vote for Leave. On a narrow and strict reading of the question, it meant there was a small but clear majority for the whole of the UK to leave the EU. In other words, there was a mandate for the ultimate objective. However, the same question, but in another form, might have had a different result.

FT *Source:* Abridged from 'The tale of the Brexit referendum question', David Allen Green, *Financial Times,* 3 Aug 2017. Copyright © 2017 The Financial Times



Box 11.10 Checklist

Evaluating question wording

- ✔ Does your question collect data at the right level of detail to answer your investigative question as specified in your data requirements table?
- ✔ Will respondents have the necessary knowledge to answer your question? A question on the implications of a piece of legislation would yield meaningless answers from those who were unaware of that legislation.
- ✔ Does your question appear to talk down to respondents? It should not!
- ✔ Does your question challenge respondents' mental or technical abilities? Questions that do this are less likely to be answered.
- ✔ Are the words used in your question familiar to all respondents, and will all respondents comprehend them in the same way? In particular, you should use simple words and avoid jargon, abbreviations and colloquialisms.
- ✔ Are there any words that sound similar and might be confused with those used in your question? This is a particular problem with researcher-completed questionnaires.
- ✔ Are there any words that look similar and might be confused if your question is read quickly? This is particularly important for self-completed questionnaires.
- ✔ Are there any words in your question that might cause offence? These might result in biased responses or a lower response rate.
- ✔ Can your question be shortened? Long questions are often difficult to understand, especially in researcher-completed questionnaires, as the respondent needs to remember the whole question. Consequently, they often result in no response at all.
- ✔ Are you asking more than one question at the same time? The question 'How often do you visit your mother and father?' contains two separate questions, one about each parent, so responses would probably be impossible to interpret.
- ✔ Does your question include a negative or double negative? Questions that include the word 'not' are sometimes difficult to understand. The question 'Would you rather not use a non-medicated shampoo?' is far easier to understand when rephrased as: 'Would you rather use a medicated shampoo?'
- ✔ Is your question unambiguous? This can arise from poor sentence structure, using words with different lexical meanings or having an unclear investigative question. If you ask 'When did you leave school?' some respondents might state the year, others might give their age, while those still in education might give the time of day! Ambiguity can also occur in category questions. If you ask employers how many employees they have on their payroll and categorise their answers into three groups (up to 100, 100–250, 250 plus), they will not be clear which group to choose if they have 100 or 250 employees.
- ✔ Does your question imply that a certain answer is correct? If it does, the question is biased and will need to be reworded, such as with the question 'Many people believe that too little money is spent on our public Health Service. Do you believe this to be the case?' For this question, respondents are more likely to answer 'yes' to agree with and please the researcher.
- ✔ Does your question prevent certain answers from being given? If it does, the question is biased and will need to be reworded. The question 'Is this the first time you have pretended to be sick?' implies that the respondent has pretended to be sick whether they answer yes or no!
- ✔ Is your question likely to embarrass the respondent? If it is, then you need either to reword it or to place it towards the end of the survey when you will, it is to be hoped, have gained the respondent's confidence. Questions on income can be asked as either precise amounts (more embarrassing), using a quantity question, or income bands (less embarrassing), using a category question. Questions on self-perceived shortcomings are unlikely to be answered.
- ✔ Have you incorporated advice appropriate for your completion mode and questionnaire medium (such as the maximum number of categories) outlined in the earlier discussion of question types?
- ✔ Are answers to closed questions written so that at least one will apply to every respondent and so that each of the responses listed is mutually exclusive?
- ✔ Are the instructions on how to record each answer clear?

Translating questions into other languages

Translating questions and associated instructions into another language requires care if your translated or target questionnaire is to be decoded and answered by respondents in the way you intended. For international research this is extremely important if the questions are to have the same meaning to all respondents. For this reason, Usunier et al. (2017) suggest that when translating the source questionnaire attention should be paid to:

- lexical meaning – the precise meaning of individual words (e.g. the French word chaud can be translated into two concepts in English and German, 'warm' and 'hot');
- idiomatic meaning – the meanings of a group of words that are natural to a native speaker and not deducible from those of the individual words (e.g. the English expression for informal communication, 'grapevine', has a similar idiomatic meaning as the German expression Mundpropaganda, meaning literally 'mouth propaganda');
- experiential meaning – the equivalence of meanings of words and sentences for people in their everyday experiences (e.g. terms that are familiar in the source questionnaire's context such as 'hybrid working' or 'dual career household' may be unfamiliar in the target questionnaire's context);
- grammar and syntax – the correct use of language, including the ordering of words and phrases to create well-formed sentences (e.g. in Japanese the ordering is quite different from English or Dutch, as verbs are at the end of sentences).

Usunier et al. (2017) outline a number of techniques for translating your source questionnaire. These, along with their advantages and disadvantages, are summarised in Table 11.4. In this table, the **source questionnaire** is the questionnaire that is to be translated, and the **target questionnaire** is the translated questionnaire. When writing your final project report, remember to include a copy of both the source and the target questionnaire as appendices. This will allow readers familiar with both languages to confirm that equivalent questions in both questionnaires have the same meaning.

Table 11.4 Translation techniques for questionnaires

	Direct translation	Back-translation	Parallel translation
Approach	Source questionnaire to target questionnaire	Source questionnaire to target questionnaire; target questionnaire to source questionnaire; comparison of two new source questionnaires; creation of final version	Source questionnaire to target questionnaire by two or more independent translators; comparison of two target questionnaires; creation of final version
Advantages	Easy to implement, relatively inexpensive	Likely to discover most problems; easy to implement with translators at source country	Leads to good wording of target questionnaire
Disadvantages	Can lead to many errors (including those relating to meaning) between source and target questionnaire	Requires two translators, one a native speaker of the source language, the other a native speaker of the target language	Cannot ensure that lexical, idiomatic and experiential meanings are kept in target questionnaire

Source: Developed from Usunier et al. (2017) 'Translation techniques for questionnaires' in International and Cross-Cultural Business Research. Copyright © 2017 Sage Publications.

Coding question responses

As you will be analysing your data by computer, question responses will need to be coded prior to entry. Online questionnaires designed using a cloud-based survey tool do this automatically, the software allowing the selected response to each closed question to either be given a numeric code or the actual answer recorded. Responses will be automatically saved and can subsequently be exported as a data file in a variety of formats such as Excel™, IBM SPSS Statistics compatible, or a CSV (comma-separated values) file (Box 11.1).

These codes allocated to response categories will affect your analyses. Where, as in questions 16 and 17, numeric codes are allocated to adjacent responses this makes it far easier to aggregate responses during analysis to 'satisfactory' (codes 5, 4 and 3) and 'unsatisfactory' (codes 2 and 1). For open questions the text entered by the respondent will be recorded verbatim and will need coding by you. Such responses are likely to require more complex coding using either the multiple-response or the multiple-dichotomy method. Coding is discussed in Section 12.2, and we recommend that you read this prior to designing your questions.

16	Is the service you receive?	Excellent	Good	Reasonable	Poor	Awful
	(Please circle O the number)	5	4	3	2	1
17	Is the service you receive?	Excellent	Good	Reasonable	Poor	Awful
	(Please tick ✓ the box)	❑$_5$	❑$_4$	❑$_3$	❑$_2$	❑$_1$

For paper-based questionnaires you will need to allocate the codes yourself. For numerical responses, actual numbers can be used as codes. For other responses, you will need to design a coding scheme. As with online questionnaires, whenever possible, you should establish the coding scheme prior to collecting data and incorporate it into your questionnaire. As noted in Section 11.3, this should take account of the precise detail required to allow comparison with other relevant datasets and be compatible with their coding schemes (Section 12.2). Coding schemes can be printed on the paper questionnaire, thereby **pre-coding** the question and removing the need to code after data collection. Two ways of doing this are illustrated by questions 16 and 17, which collect data on the respondents' opinions.

For open questions you will need to reserve space on your data collection form to code responses after data collection. Question 18 has been designed to collect attribute data in a sample survey of 5,000 people. Theoretically there could be hundreds of possible responses, and so sufficient spaces are left in the 'For office use only' box.

18 What is your full job title?

.....

For Office use only
❑ ❑ ❑

11.6 Designing the questionnaire

Order and flow of questions

When designing your questionnaire, it is a good idea to spend time considering the order and flow of your questions. These should be logical to the respondent (and researcher) rather than follow the order in your data requirements table (Table 11.2). They should take account of possible bias caused by the ordering of the questions. For example, a question

asking a respondent to list the possible benefits of a new shopping centre could, if preceding a question about whether the respondent supports the proposed new shopping centre, bias respondents' answers in favour of the proposal.

To assist the flow of the questions it may be necessary to include **filter questions**. These identify those respondents for whom the following question or questions are not applicable, so they can skip those questions. Complex filter questions can be programmed using cloud-based software (and CAPI and CATI software) so that skipped questions are never displayed on the screen and as a consequence never asked (Dillman et al. 2014). In such situations the respondent is unlikely to be aware of the questions that have been skipped. However, you should beware of using more than two or three filter questions in paper-based self-completed questionnaires, as respondents tend to find having to skip questions annoying. The following example uses the answer to question 19 to determine whether questions 20 to 24 will be answered. (Questions 19 and 20 both collect factual data.)

19 Are you currently registered as unemployed? Yes ❑1
If 'no' go to question 25 No ❑2

20 How long have you been registered as unemployed? ☐☐ years ☐☐ months

(for example, for no years and six months write:) ☐0 years ☐6 months

Where you need to introduce new topics, phrases such as 'the following questions refer to . . . ' or 'I am now going to ask you about . . . ' are useful, although respondents may ignore or miscomprehend instructions (Section 11.4). For researcher-completed questionnaires, you will have to include instructions for the researcher or research assistant (Box 11.11).



Box 11.11 Focus on student research

Introducing a series of rating questions in a telephone questionnaire

As part of a telephone questionnaire, Stefan needed to collect data on respondents' opinions about motorway service stations. To do this he asked respondents to rate a series of statements using a Likert-type rating scale. These were recorded as a matrix. Because his survey was conducted by telephone, and he wanted respondents to express an opinion, the rating scale was restricted to four categories: strongly agree, agree, disagree, strongly disagree.

In order to make the questionnaire easy to follow, Stefan used italic script to highlight the instructions and the words that the research assistant needed to read in bold. An extract is given below:

Now I'm going to read you several statements. Please tell me whether you strongly agree, agree, disagree or strongly disagree with each.

Read out statements 21 to 30 one at a time and after each ask . . .

Do you strongly agree, agree, disagree or strongly disagree?

Record respondent's response with a tick ✓

		strongly agree	agree	disagree	strongly disagree
21	**I think there should be a greater number of service stations on motorways**	❑4	❑3	❑2	❑1



Box 11.12 Checklist

Assessing the question order

- ✔ Are questions at the beginning of your questionnaire more straightforward and ones the respondent will enjoy answering? Questions about attributes and behaviours are usually more straightforward to answer than those collecting data on opinions.
- ✔ Are questions at the beginning of your questionnaire obviously relevant to the stated purpose of your research? For example, questions requesting contextual information may appear irrelevant.
- ✔ Are questions and topics that are more complex placed towards the middle of your questionnaire? By this stage most respondents should be undertaking the survey with confidence but should not yet be bored or tired.
- ✔ Are personal and sensitive questions towards the end of your questionnaire, and is their purpose explained clearly? On being asked these a respondent may refuse to answer; however, if they are at the end of a researcher-completed questionnaire you will still have the rest of the data!
- ✔ Are filter questions and routing instructions easy to follow so that there is a clear route through the questionnaire?
- ✔ (For researcher-completed questionnaires) Are instructions to the researcher easy to follow?
- ✔ Are questions grouped into obvious sections that will make sense to the respondent?
- ✔ Have you re-examined the wording of each question and ensured it is consistent with its position in the questionnaire as well as with the data you require?

Although the checklist in Box 11.12 should help you to avoid the most obvious problems associated with question order and flow in all questionnaires, the advice contained may sometimes appear contradictory. Where this is the case, you need to decide what is most important for your particular population.

Visual presentation

Visual presentation is important for all questionnaires. All questionnaires should be designed to make reading questions and filling in responses easy. The visual presentation of online and other self-completed questionnaires should, in addition, be attractive to encourage the respondent to fill it in and to return it, while not appearing too long. A two-column layout for a paper-based questionnaire can look attractive without decreasing legibility (Ekinci 2015). For online questionnaires a single column is preferable while, due to the screen size, only one question per page is often preferable for mobile questionnaires (Section 11.5, question 12) (Dillman et al. 2014). However, where the choice is between an extra screen (or page) and a cramped questionnaire the former is likely to be more acceptable to respondents (Dillman et al. 2014). Cloud-based survey software contain a series of style templates for typefaces, colours and page layout, as well as optimisation routines for screen, tablet and mobile phone. These are all helpful in producing a professional-looking questionnaire more quickly. However, it is worth noting that, whatever the completion mode and questionnaire medium, the best way of obtaining the maximum number of valid responses to questions is to keep both the visual presentation of the questionnaire and the wording of each question simple (Dillman 2014).

Research findings on the extent to which the length of your questionnaire will affect your response rate are mixed (De Vaus 2014). There is a widespread view that longer

questionnaires will reduce response rates relative to shorter questionnaires (Edwards et al. 2002). However, a very short questionnaire may suggest that your research is insignificant and hence not worth bothering with. Conversely, a questionnaire that takes over an hour to complete might just be thrown away by the intended respondent. In general, we have found that a length of between four and eight A4 pages (or equivalent) has been acceptable for both online and paper-based within-organisation self-completed questionnaires. In contrast, SMS questionnaires need to have far fewer questions, preferably five or less. Telephone questionnaires of up to half an hour have caused few problems, although this is dependent upon a respondent's location and time of day. Similarly, the acceptable length for face-to-face questionnaires can vary from only a few minutes in the street to over two hours in a more comfortable environment (Section 10.6). Based on these experiences and, noting that respondents generally respond more carelessly when answering longer questionnaires (Bowling et al. 2021), we recommend you do not make the questionnaire longer than is really necessary to meet your research questions and objectives.

Box 11.13 summarises the most important layout issues as a checklist of common mistakes to avoid.



Box 11.13 Checklist

Avoiding common mistakes in questionnaire layout

- ✔ (For self-completed questionnaires) Do questions appear well spaced on the screen or page? A cramped design will put the respondent off reading it and reduce the response rate. Unfortunately, a long questionnaire is equally off-putting!
- ✔ (For paper-based self-completed questionnaires) Is the questionnaire going to be printed on good-quality paper? Poor-quality paper implies that the survey is not important.
- ✔ (For self-completed questionnaires) Is the questionnaire going to be displayed or printed on a warm pastel colour? Warm pastel shades, such as yellow and pink, generate slightly more responses than white (Edwards et al. 2002) or cool colours, such as green or blue. White is a good neutral colour, but bright or fluorescent colours should be avoided.
- ✔ (For researcher-completed questionnaires) Will the questions and instructions be printed on one side of the paper only? A researcher will find it difficult to read the questions on the back of pages if you are using a questionnaire attached to a clipboard!
- ✔ Is your questionnaire easy to read? Questionnaires should be displayed in 12 point or 10 point using a plain font. Excessively long and unduly short lines reduce legibility. Similarly, respondents find CAPITALS, *italics* and shaded backgrounds more difficult to read. However, if used consistently, they can make completing the questionnaire easier.
- ✔ Have you ensured that the use of shading, colour, font sizes, spacing and the formatting of questions is consistent throughout the questionnaire?
- ✔ Is your questionnaire laid out in a format that respondents are accustomed to reading? Research has shown that many people skim-read questionnaires (Dillman et al. 2014). Instructions that can be read one line at a time from left to right moving down the page are, therefore, more likely to be followed correctly.
- ✔ Is your questionnaire optimised for the questionnaire medium you intend to use?

Explaining the purpose of the questionnaire

Online questionnaire's email invitation and welcome screen

Most online self-completed questionnaires are accompanied by an email invitation to participate that explains the purpose of the research and include a welcome screen which summarises the email and offers instructions on how to complete the questionnaire. While for web and mobile questionnaire's these should fit on one screen if possible, for SMS questionnaires the messages will need to be far more succinct.

For some research projects you may also send an email or text message prior to sending your questionnaire. This will be used by the respondent to decide whether to grant you access. This is often the only opportunity you have to convince the respondent to participate in your research and ways to help ensure this are discussed in Section 6.4.

The welcome screen is the first part of the online questionnaire that a respondent will see. Unfortunately, between 4 per cent and 9 per cent of your sample will not read instructions (Hardy and Ford 2014), while others will use it to decide whether to answer the accompanying questionnaire.

Dillman et al. (2014) and others note the messages contained in an online questionnaire's email invitation to participate (covering email) will affect the response rate. The results of Dillman et al.'s research, along with requirement of most ethics committees to stress that participation is voluntary, are summarised in the annotated email (Figure 11.2). As you will see, this includes a hyperlink to the questionnaire. Although not included in this example email, some cloud-based software allows you to also include an access code for participants. Where this is the case, you need to remember to include it in your email! At the start of your online questionnaire, your welcome screen needs to summarise this information and explain concisely why you wish the respondent to complete the survey (Box 11.14). This should summarise the main messages in the covering email. It should be followed by a question that asks explicitly for the respondent's consent (Box 11.16).

Postal and delivery and collection questionnaire's invitation letter and opening remarks

Postal questionnaires and delivery and collection questionnaires are usually accompanied by an invitation letter (covering letter) requesting participation (Figure 11.3). At the start of your postal questionnaire, or delivery and collection questionnaire, you need to summarise the information in this invitation letter explain clearly and concisely why you want the respondent to complete the survey. Dillman et al. (2014) argue that, to achieve as high a response rate as possible, this should be included as the first page of the questionnaire in addition to the covering letter. He suggests that in addition to a summary of the main messages in the invitation to participate letter (Figure 11.3) you include:

- a clear unbiased banner or title, which conveys the topic of the questionnaire and makes it sound interesting;
- a subtitle, which conveys the research nature of the topic (optional);
- a neutral graphic illustration or logo to add interest and to set the questionnaire apart.

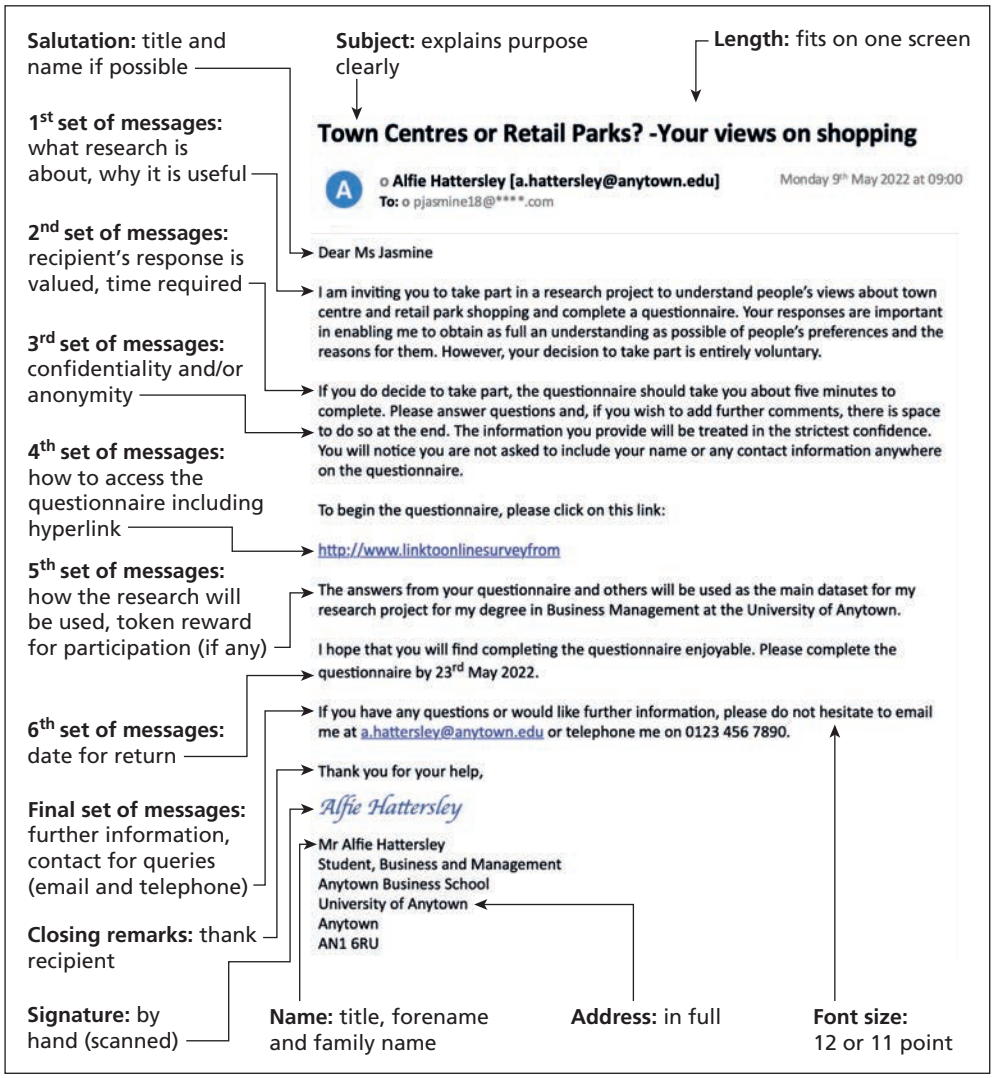


Figure 11.2 Annotated email invitation to participate (covering email)

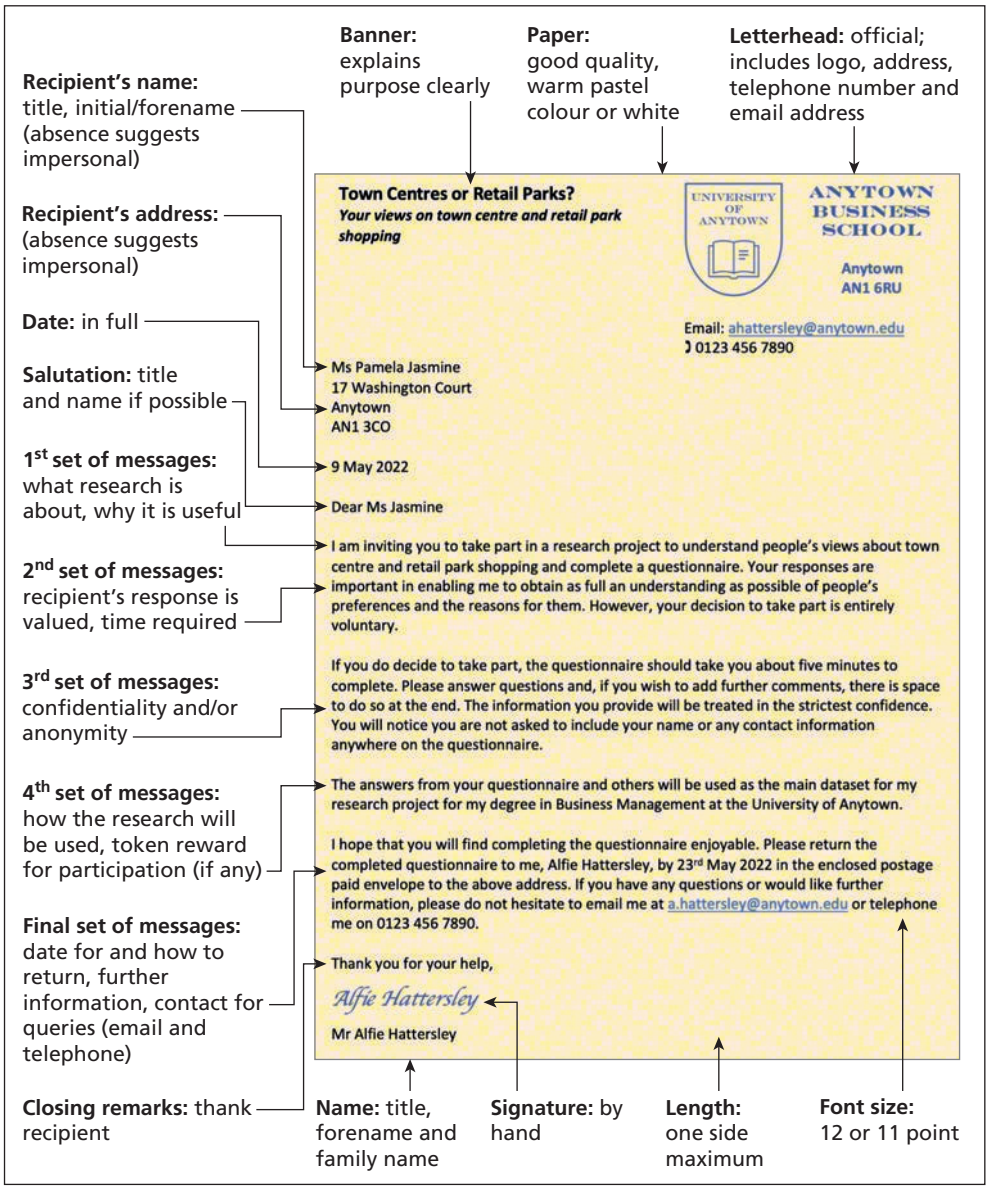


Figure 11.3 Structure of an invitation letter (covering letter)

Box 11.14
Focus on student research

Introducing an online questionnaire

Lily asked her project tutor to comment on what she hoped was the final draft of her online questionnaire. This included the following introduction:

> ANYTOWN PRIVATE HOSPITAL STAFF SURVEY
>
> Dear Sir or Madam
>
> I am undertaking research on behalf of Anytown Private Hospital and we are inviting some people to take part. THE RESEARCH WILL HELP US DEVELOP THE FUTURE OF THE HOSPITAL. If you would like to take part in this research, please answer the questionnaire.
>
> Thank you for your time.

Not surprisingly, her project tutor suggested that she re-draft her introduction. Her revised introduction follows:

> **Anytown Private Hospital**
>
> **Staff Survey 2022**
>
> ***Your voice matters***
>
> Anytown Hospital
> Caring for All
>
> Dear Colleague
>
> This survey is being carried out to find out how you feel about the Hospital's policies to support colleagues like you in your work. Please answer the questions freely. You cannot be identified from the information you provide and no information about individuals will be given to the Hospital.
>
> **All the information you provide will be treated in the strictest confidence. Your decision to participate in this research is entirely voluntary.**
>
> If you do not wish to take part, just close this web page. If you do decide to take part, the questionnaire should take you about five minutes to complete. Please answer the questions in the space provided. Try to complete the questions at a time when you are unlikely to be disturbed. Also, do not spend too long on any one question. Your first thoughts are usually your best! Even if you feel the questions asked may not apply directly to your working life, please do not ignore them. Your answers are essential in building an accurate picture of the issues that are important to improving our support for people working for this Hospital.
>
> There are no costs associated with completing the questionnaire other than your time.
>
> When you have completed the questionnaire, please click on the < submit > button to send it to me.
>
> I hope you will be willing to complete and submit the questionnaire and thank you for your time. A summary of the findings will be published on the Hospital intranet. If you have any queries or would like further information about this project, please telephone me on 01234–5678910 or email me on l.woollons@anytownhealthcare.com.
>
> Thank you for your help.
> *Lily Woollons*
> Lily Woollons
> Human Resources Department
> Anytown Private Hospital
> Anytown AN99 9HS

Researcher-completed questionnaire's invitation and opening remarks

Researcher-completed questionnaires will require the invitation and opening information to be phrased as a short introduction, given in the researcher's own words to each respondent. A template for a telephone questionnaire (developed from De Vaus 2014), which you, as researcher, would paraphrase, is given in the next paragraph.

> **Good morning/afternoon/evening. My name is [your name] from [your organisation]. I am undertaking a research project to find out [brief description of purpose of the research]. Your telephone number was drawn from a random sample of [brief description of the total population]. The questions I should like to ask will take about [number] minutes. If you have any queries, I shall be happy to answer them. [Pause] Before I continue, please can you confirm that this is [read out the telephone number] and that I am talking to [read out name/occupation/position in organisation to check that you have the right person]. Please can I confirm that you consent to answering the questions and ask you them now?**

Obviously, you will need to amend this template if using face-to-face questionnaires and, if selecting respondents using a quota sample, will need to ensure your opening questions enable your sample quotas to be identified. You will also need to have prepared answers to the more obvious questions that the respondent might ask you. These include the purpose of the research, how you obtained the respondent's telephone number, who is conducting or sponsoring the research, and why someone else should not answer the questions instead of the respondent.

Closing the questionnaire

At the end of your questionnaire, you need to explain clearly what you want the respondent to do with their completed questionnaire. It is usual to start this section by thanking the respondent for completing the questionnaire, and restating the contact's name, email address and telephone number for any queries they may have from the covering email (Figure 11.2) or letter (Figure 11.3). Sometimes, as in Box 11.14, you may wish to make a summary of your research findings available to respondents. If you do make this offer, don't forget to provide the summary!

For postal, and delivery and collection questionnaires, you should restate the date by which you would like it returned and how and where to return it. A template for postal questionnaires, which can be adapted for other questionnaire mediums is given in the next paragraph:

> Thank you for taking the time to complete this questionnaire. If you have any queries, please do not hesitate to contact [your name] by telephoning [contact work/university telephone number with answer machine/voice mail] or emailing [work/university email address].
>
> Please return the completed questionnaire by [date] in the envelope provided to:
>
> [your name]
>
> [your address]

11.7 Pilot testing

Prior to using your questionnaire to collect data it should be pilot tested with respondents who are similar to those who will actually complete it. The purpose of the **pilot test** is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problems in recording the data. In addition, it will enable you to obtain some assessment of the questions' validity and the likely reliability of the data that will be collected both for individual questions and, where appropriate, scales comprising a number of rating scale questions. Preliminary analysis using the pilot test data can be undertaken to ensure that the data collected will enable your investigative questions to be answered.

Initially, you should ask an expert or group of experts to comment on the suitability of your questions. As well as allowing suggestions to be made on the structure of your questionnaire, this will help establish content validity and enable you to make necessary amendments prior to pilot testing using a group as similar as possible to the final population in your sample and the same distribution method. For any research project there is a temptation to skip the pilot testing. However, this is a false economy and, even if you have limited time, it is important to try out your questionnaire (Bell and Waters 2018). Without a trial run, you have no way of knowing whether your questionnaire will succeed.

The number of people with whom you pilot your questionnaire and the number of pilot tests you conduct will be dependent on your research question(s), your objectives, the size of your research project, the time and money resources you have available, and how well you have initially designed your questionnaire. Where surveys are particularly important, such as referenda and national censuses, there will be numerous field trials, starting with individual questions (Box 11.9) and working up to larger and more rigorous pilots of later drafts.

For smaller-scale surveys you are unlikely to have sufficient financial or time resources for large-scale field trials. However, it is still important that you pilot test your questionnaire. The number of people you choose should be sufficient to include any major variations in your population that you feel are likely to affect responses. For most student questionnaires this means that the minimum number for a pilot is 10 (Fink 2016), although for large surveys between 100 and 200 responses is usual (Dillman et al. 2014). Occasionally you may be extremely pushed for time. In such instances it is better to pilot test the questionnaire using friends or family than not at all! This will provide you with at least some idea of your questionnaire's **face validity**: that is, whether the questionnaire appears to make sense.

As part of your pilot, you should check each completed pilot questionnaire to ensure that respondents have had no problems understanding or answering questions and have followed all instructions correctly (Fink 2016). Their responses will provide you with an idea of the reliability and suitability of the questions (Box 11.15). For self-completed questionnaires, additional information about problems can be obtained by giving respondents a further short questionnaire. Bell and Waters (2018) suggest you should use this to find out:

- how long the questionnaire took to complete;
- the clarity of instructions;
- which, if any, questions were unclear or ambiguous;
- which, if any, questions the respondents felt uneasy about answering;
- whether in their opinion there were any major topic omissions;
- whether the layout was clear and attractive;
- any other comments.

Researcher-completed questionnaires need to be tested with the respondents for all these points other than layout. One way of doing this is to form an assessment as each questionnaire progresses. Another is to ask any research assistants you are employing.

Box 11.15 Focus on student research

Pilot testing a questionnaire

Zaineb pilot tested her questionnaire with 10 people who had similar characteristics to her potential respondents. When looking at the completed questionnaires she noticed that two of her respondents had amended question 22 on marital status.

On this basis, Zaineb added another possible response 'separated' to question 22.

22. How would you describe your current relationship status?

single, never married	☐
married or domestic partnership	☐
widowed	☐
divorced	☐

None of these, I'm separated!

However, you can also check by asking the respondent additional questions at the end of their questionnaire. In addition, you will need to pilot test the questionnaire with the research assistants to discover whether:

- there are any questions for which visual aids should have been provided;
- they have difficulty in finding their way through the questionnaire;
- they are recording answers correctly.

Once you have completed pilot testing you should email or write to these respondents thanking them for their help.

11.8 Distributing the questionnaire

Having designed, pilot tested and amended your questionnaire, and selected your sample, you are ready to distribute it and collect data. Within business and management research reports, it is often not clear whether respondents felt compelled to respond to the questionnaire (Baruch and Holtom 2008). Respondents' feelings of compulsion are usually signified by stating the questionnaire was 'administered', whereas non-compulsion is signified by phrases such as 'invited to fill out a questionnaire voluntarily' or 'voluntary response'. In collecting data using your questionnaire it is important that you abide by your university's or professional body's code of ethics (Sections 6.5 and 6.6). Although, when a respondent answers questions and returns their questionnaire, they are giving their implied consent, they have rights just like all research participants.

Inevitably you will need to gain access to your sample (Sections 6.2 to 6.4) and attempt to maximise the response rate. We have already discussed likely response rates for different of questionnaire medium in relation to probability sampling and sample sizes (Section 7.5). In addition, a large number of studies have been conducted to assess the impact of different strategies for increasing the response to postal questionnaires; many of which also can be applied to inline questionnaires. Fortunately, the findings of these studies have been analysed and synthesised by Edwards et al. (2002), Anseel et al. (2010) and Mellahi and Harris (2016). As you can see from Table 11.5, response rates can be

Table 11.5 Relative impact of strategies for raising postal questionnaire response rates

Strategy	Relative impact
Incentives	
Monetary incentive v. no incentive	Very high
Incentive included with questionnaire v. incentive on questionnaire return	High
Non-monetary incentive (such as free report) v. no incentive	Low
Length	
Shorter questionnaire v. longer questionnaire	Very high
Appearance	
Brown envelope v. white envelope	High but variable
Coloured ink v. standard	Medium
Folder or booklet v. stapled pages	Low
More personalised (name, hand signature etc.) v. less personalised	Low
Coloured questionnaire v. white questionnaire	Very low
Identifying feature on the return v. none	Very low but variable
Distribution	
Recorded delivery v. standard delivery	Very high
Stamped return envelope v. business reply or franked	Medium
First class post outwards v. other class	Low
Sent to work address v. sent to home address	Low but variable
Pre-paid return v. not pre-paid	Low but variable
Stamped outward envelope v. franked	Negligible
email v. paper (within organisations and providing all use email regularly)	Medium
Contact	
Pre-contact (advanced notice) v. no pre-contact	Medium
Follow-up v. no follow-up	Medium
Postal follow-up including questionnaire v. postal follow-up excluding questionnaire	Medium
Pre-contact by telephone v. *pre-contact by post*	Low
Mention of follow-up contact v. none	Negligible
Content	
More interesting/relevant v. less interesting/relevant topic	Very high
User-friendly language v. standard	Medium
Demographic and behaviour questions only v. demographic, behaviour and attitude questions	Medium
More relevant questions first v. other questions first	Low
Most general question first v. *last*	Low
Sensitive questions included v. *sensitive questions not included*	Very low
Demographic questions first v. other questions first	Negligible
'Don't know' boxes included v. not included	Negligible
Origin	
University sponsorship as a source v. other organisation	Medium
Sent by more senior or well-known person v. *less senior or less well-known*	Low but variable
Communication	
Explanation for not participating requested v. not requested	Medium
Confidentiality/anonymity stressed v. not mentioned	Medium
Choice to opt out from study offered v. *not given*	Low

Strategy	Relative impact
Instructions given v. *not given*	Low but variable
Benefits to respondent stressed v. other benefits	Very low
Benefits to sponsor stressed v. other benefits	Negligible
Benefits to society stressed v. other benefits	Negligible
Response deadline given v. no deadline	Negligible

Note: Strategies in italics increase response rates relative to those in normal font
Source: Developed from Anseel et al. 2010; Edwards et al. 2002; Mellahi and Harris 2016

improved by careful attention to a range of factors, including visual presentation, length, content, distribution methods and associated communication as well as being clearly worded. However, organisations and individuals are increasingly being bombarded with requests to respond to questionnaires and so may be unwilling to complete your questionnaire (Chidlow et al. 2015). The techniques you use to help to maximise responses will inevitably be dependent, at least in part, on the way in which your questionnaire is distributed. It is the processes associated with delivering each of the six questionnaire mediums, that we now consider.

Online questionnaires

For both Web and mobile questionnaires, it is important to have a clear timetable that identifies the tasks to be done and the resources needed. A good response is dependent on the recipient being motivated to answer the questionnaire and return it. Although the covering email and visual appearance will help to ensure a high level of response, it must be remembered that, unlike postal and delivery and collection questionnaires, you and your respondent may see different images displayed on their screens. It is therefore crucial that your cloud-based software can optimise the questionnaire for different displays and, ensure the questionnaire design is clear across all display media (Dillman et al. 2014).

Web and mobile questionnaires are usually delivered via a Web link. This normally uses email or a Web page to display the hyperlink to the questionnaire and is dependent on having a potential respondents' email addresses. Such electronic database lists can be purchased from specialist organisations (Section 7.4). Online panel companies can also be paid to deliver your questionnaire to a specified quota of respondents (Section 7.9). When using the Internet to distribute questionnaires, you should abide by generally acceptable uses (**netiquette**) and, minimise the likelihood of the email invitation being flagged as spam by email filters (Box 11.16).

For within-organisation research, questionnaires can be easily delivered as a hyperlink within an email to employees, provided all of the sample have access to it and use email. If you choose to use email with a direct hyperlink to the questionnaire, we suggest that you:

1. Contact recipients yourself by email (or use an online panel company) and advise them to expect a questionnaire – a pre-survey contact (Section 6.5).
2. Include the hyperlink to the questionnaire in the email invitation (Figure 11.2). You should make sure that this will arrive when recipients are likely to be receptive. For most organisations Fridays and days surrounding major public holidays have been shown to be a poor time.

Box 11.16 Checklist

Abiding by netiquette and minimising spam flagging

Netiquette

- ✔ Ensure emails and postings to user groups are relevant and that you do not send junk emails (spam).
- ✔ Remember that invitations to participate sent to over 20 user groups at once are deemed as unacceptable by many net vigilantes and so you should not exceed this threshold.
- ✔ Avoid sending your email to multiple mailing lists as this is likely to result in individuals receiving multiple copies of your email (this is known as cross-posting).
- ✔ Avoid the use of email attachments as these can contain viruses.

- Minimising spam
- Send individual emails rather than bulk emailing options.
- Avoid using the 'Cc.' and 'Bcc.' recipient fields.
- Avoid words such as 'offer', 'free', 'cash', 'win', 'promotion', 'prize' and similar in your email invitation.
- Test messages with a spam test analyser.

Sources: Developed from Hewson et al. 2003; Dillman et al. 2014.

3 Summarise the purpose of the research and include an explicit request for the respondent's consent in the welcome screen at the start of the questionnaire (Box 11.17).
4 Email a first follow-up one week after the initial email invitation to all recipients. This should thank early respondents and remind non-respondents to answer (a copy of the hyperlink should be included again).
5 Email a second follow-up to those who have not responded after three weeks. This should include the information that was in the initial invitation including the hyperlink. The email invitation should be amended to further emphasise the importance of completing the questionnaire.
6 Also use a third follow-up if time allows or your response rate is low.
7 When the respondent completes the questionnaire, their responses will be saved automatically. However, you may need to select the online survey tool option that prevents multiple responses from one respondent.

Alternatively, the questionnaire can be advertised online or in printed media and potential respondents invited to access the questionnaire by clicking on a hyperlink or scanning a QR (quick response) code using their tablet or mobile phone. Adopting either approach observes netiquette (Box 11.16) and means that respondents can remain anonymous. The stages involved are:

1 Ensure that a website has been set up that explains the purpose of the research and has the hyperlink to the questionnaire (this takes the place of the covering email).
2 Advertise the research website widely using a range of media (for example, an email pre-survey contact or a banner advertisement on a page that is likely to be looked at by the target population) and highlight the closing date.
3 When respondents complete the questionnaire, their responses will be saved automatically. However, you will need to select the online survey tool option that prevents multiple responses from one respondent.

Response rates from web advertisements and QR codes are likely to be very low, and there are considerable problems of non-response bias as the respondent has to take extra

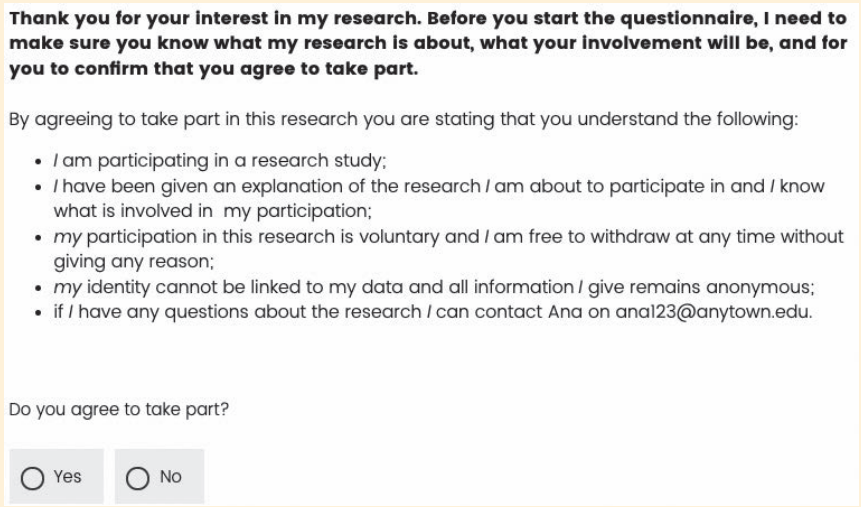


Box 11.17 Focus on student research

Request for respondent's consent in an online questionnaire

Ana had decided to collect her data using an online questionnaire. She emailed potential respondents explaining the purpose of her research and requesting their help. At the end of her email, she included a hyperlink to the online questionnaire created in Qualtrics.

The first page of Ana's online questionnaire included a summary of the main messages in her email. This was followed by a formal request to the respondent for their consent, which stressed that the decision to participate was entirely voluntary and that they could withdraw at any time.



Thank you for your interest in my research. Before you start the questionnaire, I need to make sure you know what my research is about, what your involvement will be, and for you to confirm that you agree to take part.

By agreeing to take part in this research you are stating that you understand the following:

- *I* am participating in a research study;
- *I* have been given an explanation of the research *I* am about to participate in and *I* know what is involved in my participation;
- *my* participation in this research is voluntary and *I* am free to withdraw at any time without giving any reason;
- *my* identity cannot be linked to my data and all information *I* give remains anonymous;
- if *I* have any questions about the research *I* can contact Ana on ana123@anytown.edu.

Do you agree to take part?

◯ Yes ◯ No

Source: Copyright © 2021 Qualtrics LLC. Used With Permission.

steps to locate and complete the questionnaire. Consequently, it is likely to be very difficult to obtain a sample from which you might generalise. This is not to say that this approach should not be used as it can, for example, enable you to contact difficult-to-access groups. It all depends, as you would expect us to say, on your research question and objectives!

SMS questionnaires

SMS (text) questionnaires are used typically to obtain feedback immediately after an event such as a purchase delivery, meal at a restaurant or similar. For these questionnaires the introduction is invariably shorter as a maximum of 918 characters can be sent by text message. SMS questionnaires are usually sent using cloud-based survey software being delivered directly to recipients' mobile phones comprising very few questions (preferably three of less). Questions are delivered one question at a time; subsequent questions only being delivered if a question is answered. If you choose to use an SMS questionnaire, we suggest that you:

1 Obtain and import a list of potential respondents' mobile phone numbers into the cloud-based software and schedule the distribution of the questionnaire at a time when you believe they will be able to take part.

2 For the first question, text recipients and ask if they would be willing to take part in the research.
3 Subsequent questions will be sent by text message immediately after the respondent answers the question.
4 On receipt of a response to the last question, ensure the software is set up to text the respondent and thank them for taking part.

Postal questionnaires

For postal questionnaires, it is important to have a concise and clear covering letter and good visual presentation to help to ensure a high level of response. As with online questionnaires, a clear timetable and well-executed administration process are important (Box 11.18).

Our advice for postal questionnaires (developed from De Vaus 2014) can be split into six stages:

1 Ensure that questionnaires and letters are printed, and envelopes addressed.
2 Contact recipients by post, telephone or email and advise them to expect a questionnaire – a pre-survey contact (Section 6.5). This stage is often omitted for cost reasons.
3 Post the survey with a covering letter and a return envelope. You should make sure that this will arrive when recipients are likely to be receptive. For most organisations Fridays and days surrounding major public holidays have been shown to be a poor time.
4 Post the first follow-up one week after posting out the survey to all recipients. This should take the form of a postcard designed to thank early respondents and to remind rather than to persuade non-respondents.
5 Post the second follow-up to people who have not responded after three weeks. This should contain another copy of the questionnaire, a new return envelope and a new covering letter. The covering letter should be reworded to emphasise further the importance of completing the questionnaire. For anonymous questionnaires a second follow-up will not be possible, as you should not be able to tell who has responded!
6 Also use a third follow-up if time allows or your response rate is low. For this it may be possible to use 'signed for' delivery (post), telephone calls or even call in person to emphasise the importance of responding.

Additionally, De Vaus (2014) advises placing a unique identification number on each questionnaire, which is recorded on your list of recipients. This makes it easy to check and follow up non-respondents and, according to Dillman et al. (2014) and Edwards et al. (2002), has little, if any, effect on response rates. However, identification numbers should not be used if you have assured respondents that their replies will be anonymous!

Delivery and collection questionnaires

For delivery and collection questionnaires either you or a research assistant will deliver and call to collect the questionnaire. It is therefore important that your covering letter states when the questionnaire is likely to be collected. As with postal questionnaires, follow-ups can be used, calling at a variety of times of day and on different days to try to catch the respondent.

Box 11.18 Focus on management research

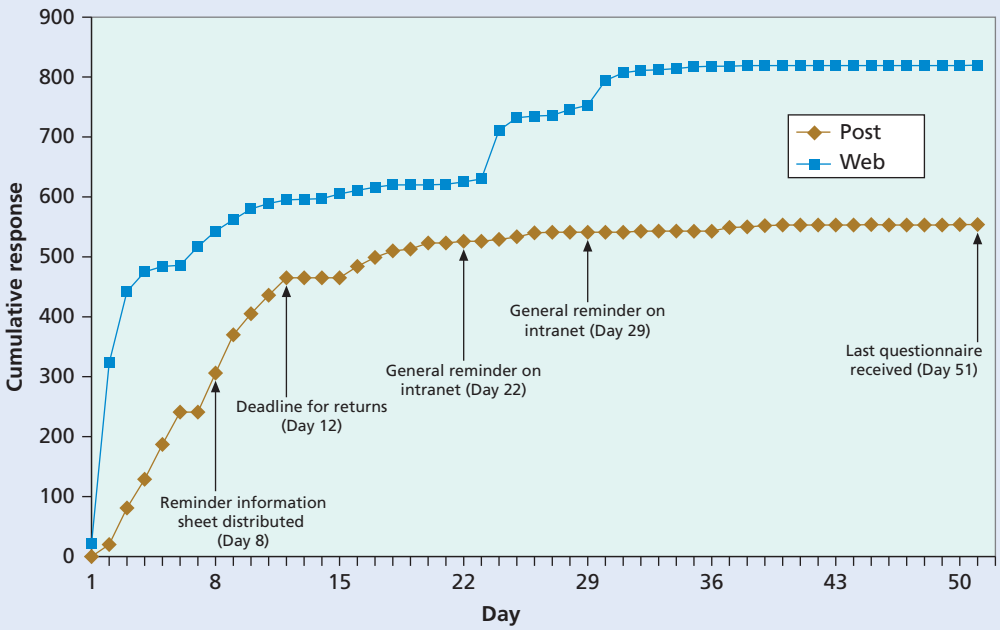
Questionnaire administration

Mark undertook an attitude survey of employees in a large organisation using a questionnaire. Within the organisation, 50 per cent of employees received an online questionnaire by a hyperlink in an email, the remaining 50 per cent receiving a postal questionnaire.

General information regarding the forthcoming survey was provided to employees using the staff intranet, the normal method for such communications. Subsequently, each employee received five personal contacts including the questionnaire:

- One week before the questionnaire was delivered a pre-survey notification email or letter, jointly from the organisation's Chief Executive and Mark, was delivered in the same manner as the potential respondent would receive their questionnaire.
- Covering email or letter and hyperlink or questionnaire to online questionnaire.
- Personal follow-up/reminder designed as an information sheet re-emphasising the deadline for returns at the end of that week.
- First general reminder (after the deadline for returns) posted on the staff intranet.
- Second general reminder (after the deadline for returns) posted on the staff intranet.

The following graph records the cumulative responses for both the online and postal questionnaire, emphasising both the impact of deadlines, follow-up/reminders and the length of time required (over 7 weeks) to collect all the completed questionnaires.



Cumulative questionnaire returns for Web and post questionnaires

Source: Unpublished data

A variation of this process that we have used widely in organisations allows for delivery and collection of questionnaires the same day and eliminates the need for a follow-up. The stages are:

1. Ensure that all questionnaires and covering letters are printed and a collection box is ready.
2. Contact respondents by email, internal post, telephone or text/SMS advising them to attend a meeting or one of a series of meetings to be held (preferably) in the organisation's time (Section 6.5).
3. At the meeting or meetings, distribute the questionnaire with a covering letter to each respondent.
4. Introduce the questionnaire, stress its anonymous or confidential nature and that participation is voluntary.
5. Ensure that respondents place their questionnaires in a collection box before they leave the meeting.

Although this adds to costs, as employees are completing the questionnaire in work time, response rates as high as 98 per cent are achievable!

Telephone questionnaires

The quality of data collected using telephone questionnaires will be affected by the researcher's competence to conduct interviews. This is discussed in Sections 10.5 and 10.7. Once your sample has been selected, you need to:

1. Ensure that all questionnaires are printed or, for CATI, that the survey tool has been programmed and tested.
2. Where possible and resources allow, contact respondents by email, post or telephone advising them to expect a telephone call (Section 6.5).
3. Telephone each respondent, recording the date and time of call and whether or not the questionnaire was completed. You should note any specific times that have been arranged for call-backs. For calls that were not successful you should note the reason, such as no reply or telephone disconnected.
4. For unsuccessful calls where there was no reply, try three more times, each at a different time and on a different day, and note the same information.
5. Make call-back calls at the time arranged.

Face-to-face questionnaires

Conducting face-to-face questionnaires uses many of the skills required for in-depth and semi-structured interviews (Section 10.7). Issues such as researcher appearance and preparedness are important and will affect the response rate (Section 10.5). However, once your sample has been selected you need to:

1. Ensure that all questionnaires are printed or, for CAPI, that the survey tool has been programmed and tested.
2. Contact respondents by email, post or telephone advising them to expect a researcher to call within the next week. This stage is often omitted for cost reasons.
3. (For large-scale surveys) Divide the sample into assignments that are of a manageable size (50–100) for one research assistant.

4 Contact each respondent or potential respondent in person, recording the date and time of contact and whether or not the questionnaire was completed. You should note down any specific times that have been arranged for return visits. For contacts that were not successful, you should note down the reason.
5 Try unsuccessful contacts at least twice more, each at a different time and on a different day and note down the same information.
6 Visit respondents at the times arranged for return visits.

11.9 Summary

- Questionnaires collect data by asking people to respond to exactly the same set of questions. They are often used as part of a survey strategy to collect descriptive and explanatory data about facts/demographics, attitudes/opinions and behaviours/events. Data collected are normally analysed quantitatively.
- Your choice of questionnaire will be influenced by your research question(s) and objectives and the resources that you have available. There are four common self-completed mediums: online, SMS, postal, delivery and collection; and two common researcher-completed mediums: telephone and face-to-face.
- Prior to designing a questionnaire, you must establish precisely what data you need to collect to answer your research question(s) and to meet your objectives. One way of helping to ensure that you collect these data is to use a data requirements table.
- The validity and reliability of the data you collect and the response rate you achieve depend largely on the design of your questions, the structure of your questionnaire and the rigour of your pilot testing.
- When designing your questionnaire, you should consider the wording of individual questions prior to the order in which they appear. Questions can be divided into open and closed. The six types of closed questions are list, category, ranking, rating scale, quantity and matrix.
- Responses for closed questions in online and SMS questionnaires are coded automatically within the cloud-based survey software. For other questionnaire distribution modes closed questions should, wherever possible, be pre-coded on your questionnaire to facilitate data input and subsequent analyses.
- The order and flow of questions in the questionnaire should be logical to the respondent. This can be assisted by filter questions and linking phrases.
- The visual appearance of the questionnaire should be attractive, easy to read and the responses easy to fill in.
- Questionnaires must be introduced carefully to the respondent to ensure a high response rate. For self-completed questionnaires this should take the form of an invitation email or letter and for online questionnaires also summarised in the welcome screen; for researcher-completed questions it will be done by the researcher or a research assistant.
- All questionnaires should be pilot tested prior to their distribution, to assess the validity and likely reliability of the questions.
- Distribution of questionnaires is dependent on the completion mode and questionnaire medium.

Self-check questions

Help with these questions is available at the end of the chapter.

11.1 In what circumstances would you choose to use a delivery and collection questionnaire rather than an online questionnaire? Give reasons for your answer.

11.2 The following questions have been taken from a questionnaire about flexibility of labour.

i Do you agree or disagree with the use of zero hours contracts by employers? (Please tick appropriate box)

Strongly agree ❑4
Agree ❑3
Disagree ❑2
Strongly disagree ❑1

ii Have you ever been employed on a zero hours contract? (Please tick appropriate box)

Yes ❑1
No ❑2
Not sure ❑3

iii What is your marital status? (Please tick appropriate box)

Single ❑1
Married or living in long-term relationship ❑2
Widowed ❑3
Divorced ❑4
Other ❑5
(..... Please describe)

iv Please describe what you think would be the main impact on employees of a zero hours contract .....

For each question identify:

a the type of data variable for which data are being collected;

b the type of question.

You should give reasons for your answers.

11.3 You are undertaking research on the use of children's book clubs by householders within mainland Europe. As part of this, you have already undertaken in-depth interviews with households who belong, and do not belong, to children's book clubs. This, along with a literature review, has suggested a number of investigative questions from which you start to construct a table of data requirements.

a For each investigative question listed, decide whether you will need to collect factual/demographic, attitude/opinion or behaviour/event data.

b Complete the 'variable(s) required' and 'detail in which data measured' in the table of data requirements for each of the investigative questions already listed. (You may embellish the scenario to help in your choice of variables required and the detail in which the data will be measured as you feel necessary, but you do not have to explore the relation to theory and key concepts in the literature.)

Research objective: To establish mainland Europe's householders' opinions about children's book clubs.		
Type of research: Predominantly descriptive, although wish to explain differences between householders.		
Investigative questions	**Variable(s) required**	**Detail in which data measured**
A Do householders think that children's book clubs are a good or a bad idea?		
B What things do householders like most about children's book clubs?		
C Would householders be interested in an all-ages book club?		
D How much per year do households spend on children's books?		
E Do households' responses differ depending on (i) number of children? (ii) whether already members of a children's book club?		

11.4 Design pre-coded or self-coded questions to collect data for each of the investigative questions in Question 11.3. Note that you will need to answer self-check question 11.3 first.

11.5 What issues will you need to consider when translating the questions you designed in answer to question 11.4?

11.6 You work for a major consumer research bureau that has been commissioned by 11 major UK companies to design, deliver and analyse the data collected using a telephone questionnaire. The purpose of this questionnaire is to describe and explain relationships between adult consumers' lifestyles, opinions and purchasing intentions. Write the introduction to this telephone questionnaire, to be read by a research assistant to each respondent. You may embellish the scenario and include any other relevant information you wish.

11.7 You have been asked by a well-known national charity 'Work for All' to carry out research into the effects of long-term unemployment throughout the UK. The charity intends to use the findings of this research as part of a major campaign to highlight public awareness about the effects of long-term unemployment. The charity has drawn up a list of names and postal addresses of people who are or were long-term unemployed with whom they have had contact over the past six months. Write a covering letter to accompany the postal questionnaire. You may embellish the scenario and include any other relevant information you wish.

11.8 You have been asked to give a presentation to a group of managers at a ground and air source heating company to gain access to undertake your research. As part of the presentation, you outline your methodology, which includes pilot testing the questionnaire. In the ensuing question and answer session, one of the managers asks you to justify the need for a pilot study, arguing that 'given the time constraints the pilot can be left out'. List the arguments that you would use to convince him that pilot testing is essential to your methodology.

Review and discussion questions

11.9 Obtain a copy of a 'customer questionnaire' from a department store or restaurant. For each question on the questionnaire establish whether it is collecting factual/demographic, attitude/opinion or behaviour/event data. Do you consider any of the questions are potentially misleading? If yes, how do you think the question could be improved? Discuss the answer to these questions in relation to your questionnaire with a friend.

11.10 Visit the website of a cloud-based survey design, data collection and analysis software provider. A selection of possible providers can be found by typing 'online questionnaire provider' or 'online survey provider' into the Google search engine. Use the online survey tool to design a simple questionnaire. To what extent does the questionnaire you have designed meet the requirements of the checklists in Boxes 11.10, 11.12 and 11.13?

11.11 Visit your university library or use the Internet to view a copy of a report for a recent national government survey in which you are interested. If you are using the Internet, the national government websites listed in Table 8.1 are a good place to start. Check the appendices in the report to see if a copy of the questionnaire used to collect the data is included. Of the types of question – open, list, category, ranking, rating, quantity and grid – which is most used, and which is least frequently used? Note down any that may be of use to you in your research project.



Progressing your research project

Using questionnaires in your research

- Return to your research question(s) and objectives. Decide on how appropriate it would be to use questionnaires as part of your research strategy. If you do decide that this is appropriate, note down the reasons why you think it will be sensible to collect at least some of your data in this way. If you decide that using a questionnaire is not appropriate, justify your decision.
- If you decide that using a questionnaire is appropriate, re-read Chapter 7 on sampling and, in conjunction with this chapter (Table 11.1 is a good place to start), decide which of the six main questionnaire mediums will be most appropriate. Note down your choice of questionnaire and the reasons for this choice.
- Construct a data requirements table and work out precisely what data you need to answer your investigative questions. Remember that you will need to relate your investigative questions and data requirements to both theory and key concepts in the literature you have reviewed and any preliminary research you have already undertaken.
- Design the separate questions to collect the data specified in your data requirements table. Wherever possible, try to use closed questions and to adhere to the suggestions in the question wording checklist (Box 11.10). Read Sections 12.2 and 12.3 and pre-code questions on the questionnaire to aid subsequent analysis whenever possible.
- Order your questions to make reading the questions and filling in the responses as logical as possible to the respondent. Wherever possible, try to adhere to the checklist for layout (Boxes 11.12 and 11.13). Remember that researcher-completed questionnaires will need instructions for the researcher or research assistant.
- Write the introduction to your questionnaire and, where appropriate, a covering letter.
- Pilot test your questionnaire with as similar a group as possible to the final group in your sample. Pay special attention to issues of validity and reliability.
- Distribute your questionnaire paying attention to netiquette for online questionnaires (Box 11.16) and remember to send out a follow-up survey to non-respondents whenever possible.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

De Vaus, D.A. (2014) *Surveys in Social Research* (6th edn). Abingdon: Routledge. Chapters 7 and 8 provide a detailed guide to constructing and delivering questionnaires, respectively.

Dillman, D.A., Smyth, J.D. and Christian J.M. (2014) *Internet, Phone, Mail and Mixed Mode Surveys: The Tailored Design Method* (4th edn). Hoboken, NJ: Wiley. The fourth edition of this classic text contains an extremely detailed and well-researched discussion of how to design and deliver online, telephone and postal-based questionnaires to maximise response rates.

Hall, J.F. (2021) *Journeys in Survey Research.* Available at http://surveyresearch.weebly.com/ [Accessed 27 Nov. 2021]. This site contains a wealth of information about the use of questionnaires and has an informative section on survey research practice.

Case 11
Assessing the utility of questionnaire scales



Source: zhu difeng/Shutterstock

Margaret is completing her master's degree part time at her University's Business School while working for a large multinational consumer goods corporation. She has chosen to undertake her research project with her company and, in turn, they have specified a variety of potential research problems for her to choose from, so she choses the research problem she felt most able to address based on the skills developed during the programme. This then forms the research question for her research: 'To what extent do consumers of multinational consumer goods identify with Brand X and how?'

After evaluating possible strategies and data collection techniques, Margaret chose to use a survey strategy and collect the data using a questionnaire to address her research question. She then approached her project tutor to ask how to develop the questionnaire. He advised her to read the academic literature, identify the most appropriate theoretical framework and take detailed notes of the scales that could be used to reflect the theoretical framework's constructs. Her project tutor also advised that Margaret address key questions when assessing the survey scales using the checklist in her research methods textbook (Box 11.8).

As Margaret was searching the literature for scales, she came upon a scale that appeared appropriate. As she read the article detailing the development of the scale, Margaret went about addressing each of the questions in the checklist (Box 11.8). To begin, she took notes regarding the suitability of the scale for her research to address the first group of questions in the box. As a way of rationalising scale development to examine the construct in question, the researchers cited literature, which Margaret then read. Under close inspection, Margaret noted that this research was poor methodologically with some leading questions and too small a sample.

Margaret found the cited literature on which the argument justifying the scale to measure the concept was not scientifically robust as it was not reproducible using a methodologically sound approach. Closer inspection of the cited literature revealed that the research was very much reliant on leading questions by the researcher. She thought this was problematic as a researcher could then use this poorly undertaken research to justify the development of a scale to examine the concept. And yet, when Margaret looked at the cited literature for the survey scale, this poorly undertaken research had actually been used to support the development of the scale.

Examining the scale further, Margaret went on to address the second question. She noted the scale used a scenario telling potential respondents what to think about to place them into a particular mindset before responding to the each of the items. Margaret remembered that while scenarios are quite often useful, such as when the researcher is trying to understand attitude formation, in this research the scale was requiring each respondent to think about something that they may not have otherwise thought of. Margaret considered whether the respondent would be able to respond to each of the scale items if the scenario was absent, and reasoned they would have found this difficult. However, she thought it strange to place a scenario that would shape and influence respondents' thinking before they answered each of the survey items. She noted this as she continued to read the survey scale article.

Margaret noted that the scale used forced choice questions. She knew this was customary for survey scales that require complete data (i.e. no missing data) but was surprised respondents were not given the option of not responding (for example, using 'Don't know', 'Not applicable', 'No opinion' or using a filter question; Figure C11.1) to survey items. Margaret noted



Figure C11.1 Example rating scale item
Source: Copyright © 2021 Qualtrics LLC. Reproduced with permission
(Note: This is not a real rating scale item but is fabricated for the purpose of the case study)

all of this information in her research diary with intrigue and a dash of horror that this (highly cited!) scale had been used in theory development.

Margaret met with her project tutor the following week and in addition to the scales she felt were of good quality, they discussed the concerns that arose from one survey scale. Her project tutor was pleased she had engaged critically with the academic literature when selecting potential scales (Forbes and Avis 2020). Margaret assured her project tutor that she would not be using the scale where she had identified problems, emphasising she would use those that were scientifically robust to ensure her own research was both rigorous and relevant to her multinational consumer goods company.

Reference

Forbes, S. and Avis, M. (2020) 'Construct creation from research questions', *European Journal of Marketing*. Vol. 54, No. 8, pp. 1817–1838.

Questions

1 Use the checklist to evaluate the suitability of existing scales (Box 11.8) to outline the key validity issues that Margaret identified.
2 Margaret's project tutor asks her to:
   - **a** outline her ecological validity concerns regarding how the researcher who developed the scale intended it to be used, and
   - **b** how might this ecological validity issue be avoided.
   - **c** Imagine you are Margaret and draft your responses.

3 Margaret wonders whether, in the event of a researcher using a problematic scale despite the scale having issues of validity, they should use Cronbach's alpha to test for internal consistency. She asks her project tutor for their opinion. Imagine you are the project tutor and draft their response.

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.



They are:

- Job satisfaction in an Australian organisation (focussing on questionnaire design and web delivery);
- Service quality in health-care supply chains (focussing on question design);
- A quantitative evaluation of students' desire for self-employment (focussing on email invitation and web questionnaires);
- Work-life balance from the idea to the questionnaire (focussing on the use of existing scales and pilot testing).

Self-check answers

11.1 When you:

- wanted to check that the person whom you wished to answer the questions had actually answered the questions;
- have sufficient resources to devote to delivery and collection and the geographical area over which the questionnaire is delivered is small;
- can use research assistants to enhance response rates. Delivery and collection questionnaires have a moderately high response rate of between 30 and 50 per cent compared with approximately 10 per cent offered on average by an online questionnaire;
- are delivering a questionnaire to an organisation's employees and require a very high response rate. By delivering the questionnaire to groups of employees in work time and collecting it on completion, response rates of up to 98 per cent can be achieved.

11.2 a i Opinion data: the question is asking how the respondent feels about the use of zero hours contracts by employees.

ii Behaviour data: the question is asking about the concrete experience of being employed on a zero hours contract.

iii Demographic data: the question is asking about the respondent's characteristics.

iv Opinion data: the question is asking the respondent what they think or believe would be the impact on employees.

b i Rating scale question using a Likert-type scale in which the respondent is asked how strongly they agree or disagree with the statement.

ii Category question in which the respondent's answer can fit only one answer.

iii Category question as before.

iv Open question in which the respondent can answer in their own way.

11.3 Although your answer is unlikely to be precisely the same, the columns of the table of data requirements below should enable you to check you are on the right lines.

Investigative questions	Variable(s) required	Detail in which data measured
Do householders think that children's book clubs are a good or a bad idea? (opinion – this is because you are really asking how householders feel)	Opinion about children's book clubs	Very good idea, good idea, neither a good nor a bad idea, bad idea, very bad idea
What things do householders like most about children's book clubs? (opinion)	What householders like about children's book clubs	Get them to rank the following things (generated from earlier in-depth interviews): monthly magazine, lower prices, credit, choice, special offers, shopping at home
Would householders be interested in an all-ages book club? (behaviour)	Interest in a book club that was for both adults and children	Interested, not interested, may be interested
How much per year do households spend on children's books? (behaviour)	Amount spent on children's books by adults and children per year by household	(Answers to the nearest €) €0 to €10, €11 to €20, €21 to €30, €31 to €50, €51 to €100, over €100
Do households' responses differ depending on: Number of children? (demographic) Whether already members of a children's book club? (behaviour)	Number of children aged under 16 Children's book club member	Actual number yes, no

11.4 a Please complete the following statement by ticking the phrase that matches your feelings most closely . . .

I feel children's book clubs are . . .

. . . a very good idea	❑5
. . . a good idea	❑4
. . . neither a good nor a bad idea	❑3
. . . a bad idea	❑2
. . . a very bad idea	❑1

b Please number each of the features of children's book clubs listed below in order of how much you like them. Number the most important 1, the next 2 and so on. The feature you like the least should be given the highest number.

Feature	How much liked
Monthly magazine	. . .
Lower prices	. . .
Credit	. . .
Choice	. . .
Special offers	. . .
Shopping at home	. . .

c Would you be interested in a book club that was for both adults and children?

(Please tick the appropriate box)	Yes	❑$_1$
	No	❑$_2$
	Not sure	❑$_3$

d How much money is spent in total each year on children's books by all the adults and children living in your household?

(Please tick the appropriate box)	€0 to €10	❑$_1$
	€11 to €20	❑$_2$
	€21 to €30	❑$_3$
	€31 to €50	❑$_4$
	€51 to €100	❑$_5$
	Over €100	❑$_6$

e i How many children aged under 16 are living in your household?

..... children

(for example, for 3 write:)	3	children

ii Is any person living in your household a member of a children's book club?

(Please tick the appropriate box)	Yes	❑$_1$
	No	❑$_2$

11.5 When translating your questionnaire, you will need to ensure that:

- the precise meaning of individual words is kept (lexical equivalence);
- the meanings of groups of words and phrases that are natural to a native speaker but cannot be translated literally are kept (idiomatic equivalence);
- the correct grammar and syntax are used.

In addition, you should, if possible, use back-translation or parallel translation techniques to ensure that there are no differences between the source and the target questionnaire.

11.6 Although the precise wording of your answer is likely to differ, it would probably be something like this:

> Good morning/afternoon/evening. My name is ____ from JJ Consumer Research. We are doing an important national survey covering lifestyles, opinions and likely future purchases of adult consumers. Your telephone number has been selected at random. The questions I need to ask you will take about 15 minutes. If you have any queries, I shall be happy to answer them [pause]. Before I continue, please can you confirm that this is [read out telephone number including dialling code] and that I am talking to a person aged 18 or over? Please can I confirm that you are willing to take part and ask you the first question now?

11.7 Although the precise wording of your answer is likely to differ, it would probably be something like the letter below:

Work for All



B&J Market Research Ltd
St Richard's House
Malvern
Worcestershire WR14 12Z
Phone: 01684–56789101

Email: andy@b&jmarketresearch.co.uk

Respondent's name

Respondent's address

Today's date

Dear *title name*

Work for All is conducting research into the effects of long-term unemployment. This is an issue of great importance within the UK and yet little is currently known about the consequences.

You are one of a small number of people who are being asked to give your opinion on this issue. You were selected at random from Work for All's list of contacts. In order that the results will truly represent people who have experienced long-term unemployment, it is important that your questionnaire is completed and returned.

All the information you give us will be totally confidential. You will notice that your name and address do not appear on the questionnaire and that there is no identification number. The results of this research will be passed to Work for All, who will be mounting a major campaign in the New Year to highlight public awareness about the effects of long-term unemployment.

If you have any questions you wish to ask or there is anything you wish to discuss please do not hesitate to telephone me, or my assistant Benjamin Marks, on 01684–56789101 during the day. You can call me at home on 01234–123456789 evenings and weekends. Thank you for your help.

Yours sincerely

Andy Nother

Mr Andy Nother

Project Manager

11.8 Despite the time constraints, pilot testing is essential to your methodology for the following reasons:

- to find out how long the questionnaire takes to complete;
- to check that respondents understand and can follow the instructions on the questionnaire (including filter questions);
- to ensure that all respondents understand the wording of individual questions in the same way and that there are no unclear or ambiguous questions;
- to ensure that you have the same understanding of the wording of individual questions as the respondents;
- to check that respondents have no problems in answering questions. For example:
  - all possible answers are covered in list questions;
  - whether there are any questions that respondents feel uneasy about answering;
- to discover whether there are any major topic omissions;

- to provide an idea of the validity of the questions that are being asked;
- to provide an idea of the reliability of the questions by checking responses from individual respondents to similar questions;
- to check that the layout appears clear and attractive;
- to provide limited test data so you can check that the proposed analyses will work.

Get ahead using resources on the companion website at:
www.pearsoned.co.uk/saunders.



- Improve your IBM SPSS Statistics, Qualtrics and NVivo research analysis with practice tutorials.
- Save time researching on the Internet with the Smarter Online Searching Guide.
- Test your progress using self-assessment questions.
- Follow live links to useful websites.

Chapter 12



Analysing data quantitatively

Learning outcomes

By the end of this chapter, you should be able to:

- recognise different types of data variables and understand the implications for quantitative analyses;
- code data variables and create a data matrix using statistical analysis software;
- explore and present data variables using appropriate tables and graphs;
- describe individual data variables using appropriate statistics;
- examine associations and differences between data variables using appropriate statistics;
- assess the strength of relationships between data variables using appropriate statistics;
- make predictions from data variables using appropriate statistics;
- examine trends in data variables using appropriate statistics;
- progress your research project by analysing data quantitatively.

12.1 Introduction

Virtually any business and management research you undertake is likely to involve some numerical data, or contain data that has or could be quantified, to help you answer your research question(s) and to meet your objectives. Quantitative data refer to all such primary and secondary data and can range from simple counts such as the frequency of occurrences of an advertising slogan to more complex data such as test scores, prices or rental costs. However, to be useful these data need to be analysed and interpreted. Quantitative analysis techniques assist you in this process. They range from creating simple tables or graphs that show the frequency of occurrence and using statistics such as indices to enable comparisons, through establishing statistical relationships between variables, to complex statistical modelling.

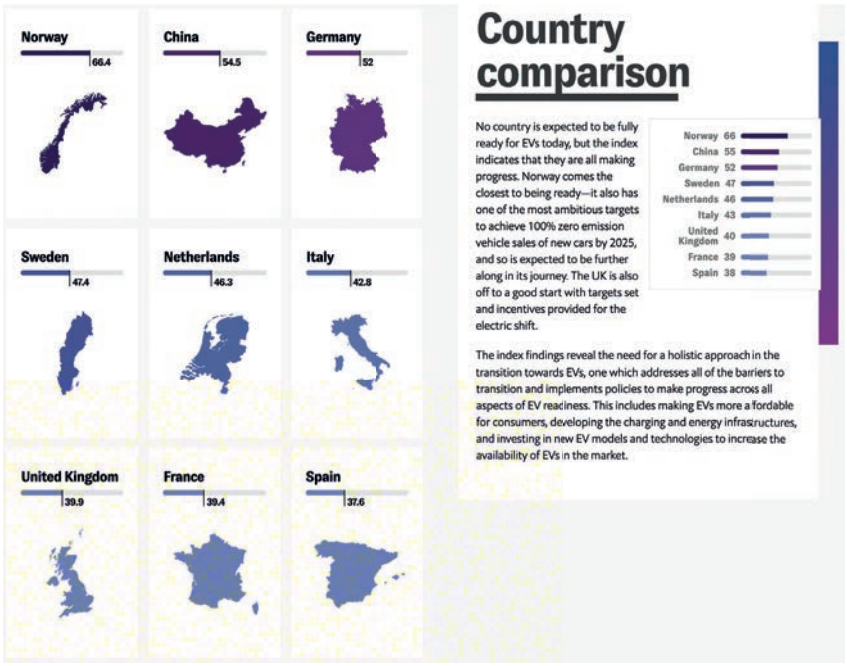
Before we begin to analyse data quantitatively, we need to ensure that our data are already quantified or that they are quantifiable and can be transformed into **quantitative data**, that is



data that can be recorded as numbers and analysed quantitatively. This means that prior to undertaking our analysis, we may need to transform other forms of data (such as text, voice and visual) into sets or categories giving each category a numerical code.

The Economist's rEV Index

The Economist's (2021) rEV Index assesses the UK's Four nations and regions on their readiness for electric vehicles (EVs). It also provides comparative scores for leading EV markets including European countries and China. The index provides an idea of what it means to be ready for EVs from the perspectives of both vehicle manufacturers and users. Using data from reputable international, national and industry sources, the index aims to measure the extent to which different parts of the UK (and other countries) are equipped with policies, infrastructure and consumer attitudes to transfer to EVs.



The Economist's rEV Index for the UK
Source: © The Economist (2021)

The index is a scaled score of between 0 and 100, where zero represents the weakest environment for the adoption of EVs, and 100 the strongest. This allows for easy comparison between countries and between regions of the UK. Each of these scaled scores is calculated from 23 different indicators organised into eight pillars that are weighted depending upon their relative importance. For example, anxiety around the availability of charging points is the topmost concern in the UK so this pillar weighted most highly. The eight pillars are:

- ***rEV inputs***
  - affordability (weighted at 15%);
  - purchase incentives (weighted at 10%);
  - consumer sentiment (weighted at 10%);
  - charging infrastructure (weighted at 25%);
  - energy infrastructure (weighted at 10%);
  - regulations (weighted at 10%).

- ***rEV outputs***
  - uptake (weighted at 10%);
  - availability (weighted at 10%).

The index scores reveal Norway as the most EV ready country with an index of 66, followed by China (index = 55), and Germany (index = 52), although differences within these countries are not given. Within the UK (index = 40), London is the most EV ready region (index = 48), and the North West and East of England (both with an index of 33) the least ready.

Within quantitative analysis, calculations and diagram drawing are usually undertaken using analysis software ranging from spreadsheets such as Excel™ to more advanced data management and statistical analysis software such as IBM SPSS Statistics™, SAS™, or Stata™. You might also use more specialised survey design and analysis online software such as Qualtrics Research CORE ™ and SurveyMonkey™, statistical shareware such as the R Project for Statistical Computing, or content analysis and text mining software such as WordStat™. However, while this means you do not have to be able to draw charts by hand, undertake calculations using a calculator or count frequencies of occurrences of words and phrases by hand, if your analyses are to be straightforward and of any value you need to:

- distinguish between different types of data and recognise the implications for quantitative analysis;
- have prepared your data with quantitative analyses in mind;
- be aware of and know when to use different tables, graphs and statistical analysis techniques.

This is not to say that there is only one possible technique for any analysis situation. As we will see, a range of factors need to be taken into account when selecting the most appropriate graphs, tables, graphs and statistics. Consequently, if you are unsure about which of these to use, you need to seek advice.

This chapter builds on the ideas outlined in earlier chapters about secondary data (Chapter 8) and primary data collection (Chapters 9 to 11), including issues of sample size (Section 7.5). It assumes that you will use a spreadsheet or more advanced statistical analysis software to undertake all but the simplest quantitative analyses. Although it does not focus on a particular analysis software, you will notice in the Focus on student research boxes that many of the analyses were undertaken using widely available software such as Excel and IBM SPSS Statistics. There are numerous statistics books already published that concentrate on specific software packages. These include Dancey and Reidy (2020), Field (2018) or Pallant (2020) on SPSS, and Scherbaum and Shockley (2015) and Winston (2022) on Excel. Likewise, this chapter does not attempt to provide an in-depth discussion of the wide range of graphical and statistical techniques available or cover more complex statistical modelling, as these are already covered elsewhere (Dawson 2017; Hair et al. 2018; Hays 1994). Rather it discusses issues that need to be considered at the planning and analysis stages of your research project and outlines analytical techniques that our students have found of most use for quantitative analysis and interpretation of data. In particular, the chapter is concerned with:

- data types and precision of measurement (Section 12.2);
- preparing data for quantitative analysis (Section 12.3);
- data entry and checking (Section 12.4);
- selecting and interpreting tables and graphs to explore and present data (Sections 12.5 to 12.7);

- selecting and interpreting statistics to describe data (Section 12.8);
- understanding statistical assumptions and hypothesis testing (Section 12.9);
- selecting and interpreting statistics to examine associations and differences (Section 12.10):
- selecting and interpreting statistics to examine relationships (Section 12.11);
- selecting and interpreting statistics to make predictions (Section 12.12);
- selecting and interpreting statistics to examine trends (Section 12.13).

Ideally, these should be considered before obtaining your data. This is equally important for both primary and secondary data analysis, although you obviously have far greater control over the type, format and coding of primary data.

12.2 Data types and precision of measurement

Many business statistics textbooks classify data for quantitative analysis into *data types* according to precision of measurement, often in ascending order of numerical precision (Berman Brown and Saunders 2008; Dancey and Reidy 2020). These different levels of numerical precision dictate the range of techniques available to you for exploration, presentation, description, and examination of your data. They are discussed in more detail in subsequent sections of this chapter.

Understanding the type of data is extremely important when analysing your data quantitatively, for two reasons. First, it is extremely easy with analysis software to generate statistics from your data that are inappropriate for the data type and are consequently of little value (Box 12.1). Second, as we will see in Sections 12.6 to 12.8, the more precise the measurement, the greater the range of analytical techniques available to you. Data that have been collected and coded using a precise numerical measurement can also be regrouped to a less precise level where they can also be analysed (Box 12.2). For example, a student's score in a test could be recorded as the actual mark (discrete data) or as the position in their class (ranked data). By contrast, less precise data cannot be made more precise. Therefore, if you are not sure about the precision of measurement you require, it is usually better to collect data at the highest level of precision possible and to regroup them if necessary.

Categorical data

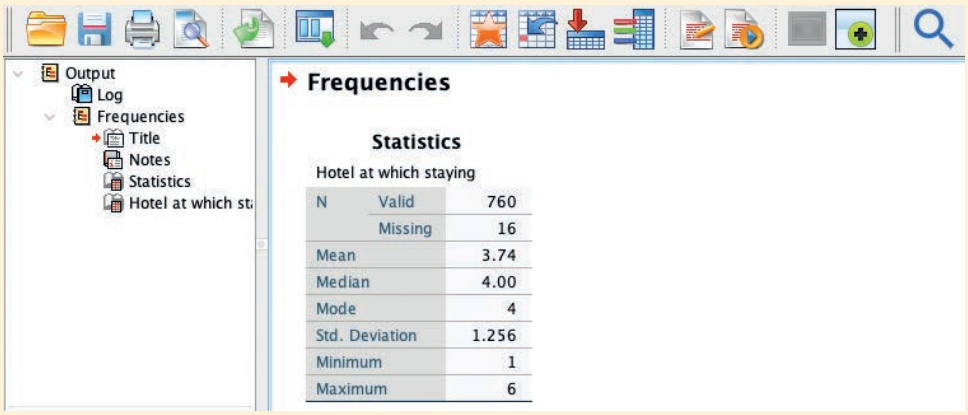
Data for quantitative analysis can be divided into two distinct groups: categorical and numerical (Figure 12.1). **Categorical data** refer to data whose values cannot be measured numerically but can be either classified into sets (categories) according to the characteristics that identify or describe the variable or placed in rank order (Berman Brown and Saunders 2008). They can be further subdivided into descriptive and ranked. An auto manufacturer might categorise their vehicles' powertrains as petrol, diesel, hybrid and electric. You might classify aspects of an image in terms of the gender of the person depicted and whether or not she or he is smiling. The verbal responses to an open-ended interview question asking participants to describe their journey to work could, once transcribed into text, be used to generate data about their main mode of travel to work. These could be categorised as 'bicycle', 'bus', 'rail', 'car' or 'walk'. Alternatively, you may be looking at particular concepts in illustrations in annual reports such as whether the central figure in each is male or female.

Box 12.1 Focus on student research

The implications of coding and data types for analysis

Pierre's research was concerned with customers' satisfaction for a small hotel group of six hotels. In collecting the data, he had asked 760 customers to indicate the hotel at which they were staying when they completed their Internet questionnaires. When he downloaded his data, the survey design software had automatically allocated a numerical code to represent the hotel, named the variable and labelled each of the codes. The code labels for the six hotels were:

Hotel at which staying	Code
Amsterdam	1
Antwerp	2
Eindhoven	3
Nijmegen	4
Rotterdam	5
Tilburg	6



In his initial analysis, Pierre used the analysis software to calculate descriptive statistics for every data variable, including the variable 'Hotel'. These included the mean, (3.74), median and mode (both 4 – the code for Nijmegen), standard deviation (1.256), minimum value (1 – the code for Amsterdam), the maximum value (6 – the code for Tilburg). Looking at his computer screen, Pierre wondered which of the three averages (mean, median or mode) was the most appropriate. He decided that, as his data were descriptive (nominal), the mode would be the most useful appropriate. The median, mean and standard deviation statistics were inappropriate for this data type.

Box 12.2 Focus on student research

Precision of data measurement

As part of a marketing questionnaire, Rashid asked individual customers to rank up to five features of a new product in order of importance to them. Data collected were, therefore, categorical and ranked (ordinal). Initial analyses made use of these ranked data. Unfortunately, a substantial minority of customers had ticked, rather than ranked, those features of importance to them.

All responses that had been ranked originally were therefore re-coded to 'of some importance'. This reduced the precision of measurement from ranked (ordinal) to descriptive (nominal) but enabled Rashid to use all responses in the subsequent analyses.

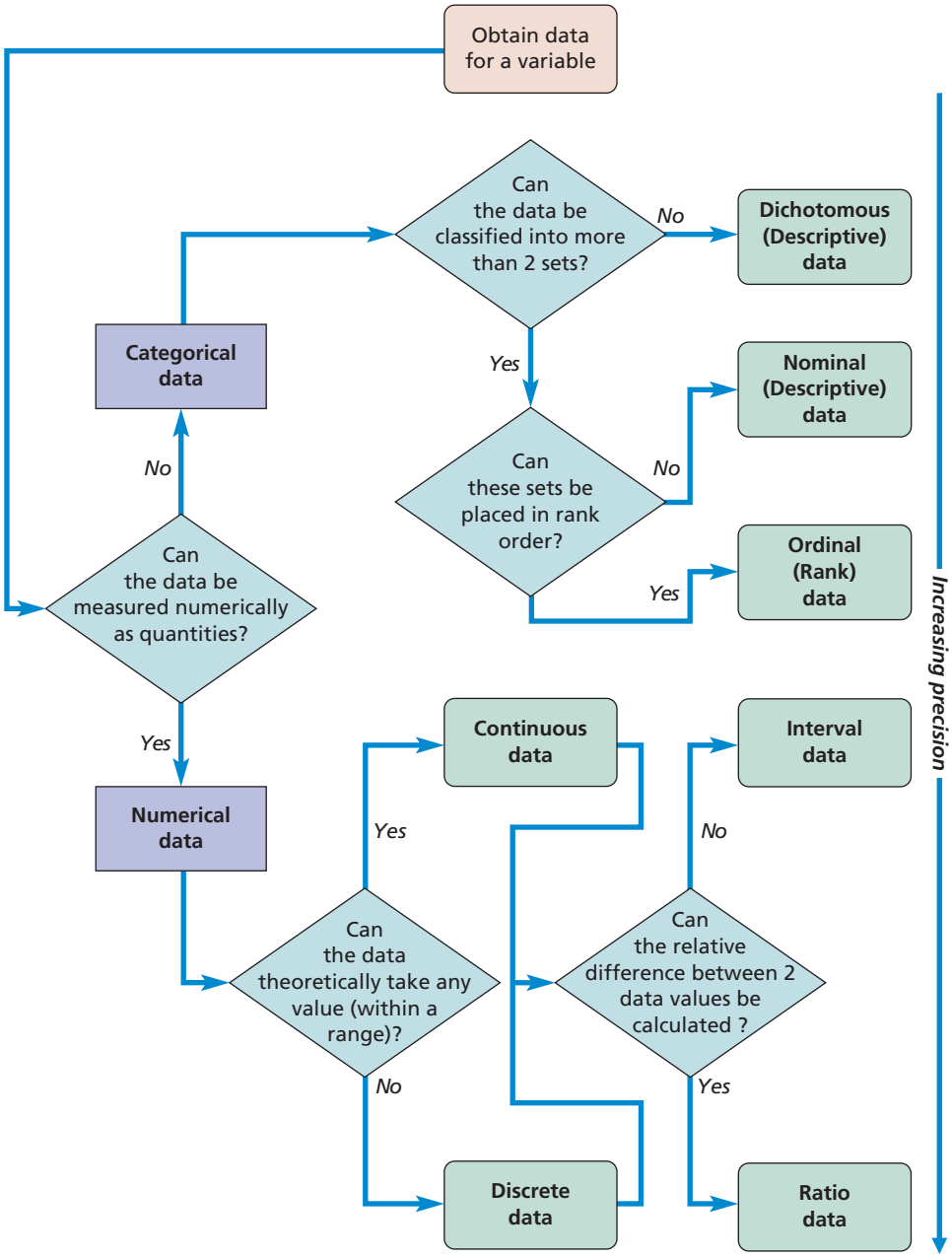


Figure 12.1 Defining the data type

Nominal or descriptive data

Although the sources of these data differ, they are all known as **nominal data** or **descriptive data** as it is impossible to define such a category numerically or rank it. Rather, these data simply count the number of occurrences in each category of a variable. For virtually all analyses the categories should be unambiguous and discrete; in other words, having one particular feature, such as a vehicle being electric, excludes it from being in all other

powertrain categories. This prevents questions arising regarding which category an individual case belongs to. Although these data are purely descriptive, you can count them to establish which category has the most and whether cases are spread evenly between categories. Some statisticians (and statistics) also separate descriptive data where there are only two categories. These are known as **dichotomous data**, as the variable is divided into two categories, such as the variable 'result' being divided into 'pass' and 'fail'.

Ordinal or rank data

Ordinal (or **rank**) **data** are a more precise form of categorical data. In such instances you know the relative position of each case within your data set, although the actual numerical measures (such as scores) on which the position is based are not recorded (Box 12.2). A researcher exploring an organisation's online communication may rank each of that organisation's tweets over a three-month period as positive, neutral or negative. You might rank individual festival goers' photographs uploaded to the festival website in terms of the prominence given to music related aspects; categorising this as high, medium, low or absent. Similarly, a questionnaire asking a rating or scale question, such as how strongly a respondent agrees with a statement, also collects ranked (ordinal) data. Despite this, some researchers argue that, where such data are likely to have similar size gaps between data values, they can be analysed as if they were numerical interval data (Blumberg et al. 2014).

Numerical data

Numerical data are those whose values are measured or counted numerically as quantities (Berman Brown and Saunders 2008). This means that numerical data are more precise than categorical as you can assign each data value a position on a numerical scale. It also means that you can analyse these data using a far wider range of statistics. There are two possible ways of subdividing numerical data: into interval or ratio data and, alternatively, into continuous or discrete data (Figure 12.1).

Interval and ratio data

If you have **interval data** you can state the difference or 'interval' between any two data values for a particular variable, but you cannot state the relative difference. This means that values on an interval scale can meaningfully be added and subtracted, but not multiplied and divided. The Celsius temperature scale is a good example of an interval scale. Although the difference between, say, 20°C and 30°C is 10°C, it does not mean that 30°C is one and a half times as warm. This is because 0°C does not represent a true zero. When it is 0°C outside, there is still some warmth, rather than none at all! In contrast, for **ratio data**, you can also calculate the relative difference or ratio between any two data values for a variable. Consequently, if a multinational company makes a profit of $1,000,000,000 in one year and $2,000,000,000 the following year, we can say that profits have doubled. Similarly, if you are estimating the number of people attending events such as political rallies using aerial photographs you might estimate the number of people at one event is half as many as at another.

Continuous and discrete data

Continuous data are those whose values can theoretically take any value (sometimes within a restricted range) provided that you can measure them accurately enough (Dancey and Reidy 2020). Data such as furnace temperature, delivery distance and length of service

are therefore continuous data. Similarly, data such as the amount of time a product is displayed in a television advertisement is continuous data. **Discrete data** can, by contrast, be measured precisely. Each case takes one of a finite number of values from a scale that measures changes in discrete units. These data are often whole numbers (**integers**) such as the number of mobile phones manufactured, number of occurrences of a particular word or phrase in employer associations' communications, or number of illustrations containing BAME (Black, Asian and Minority Ethnic) people in each issue of a fashion magazine over the last 10 years. However, in some instances (e.g. UK shoe size) discrete data will include non-integer values.

Definitions of discrete and continuous data are, in reality, dependent on how your data values are measured. The number of customers served by a large organisation is strictly a discrete datum as you are unlikely to get a part customer! However, for a large organisation with many customers you might treat this as a continuous datum, as the discrete measuring units are exceedingly small compared with the total number being measured.

12.3 Preparing data for quantitative analysis

When preparing data for quantitative analysis you need to be clear about the:

- definition and selection of cases;
- numeric codes used to classify data to ensure they will enable your research questions to be answered.

We now consider these.

Definition and selection of cases

The definition, selection and number of cases required for quantitative analysis (sample size) have already been discussed in Section 7.5 where we defined a case as an individual unit for which data have been collected. A case might be a respondent who had completed a questionnaire, an individual organisation or country for which secondary data had already been compiled, a magazine advertisement, a television commercial or an organisation's tweets. The data set would comprise the data collected from the respondents, organisations or countries, magazine advertisements, television commercials or an organisation's tweets you intend to analyse. Principles of probability sampling, outlined in Sections 7.4 to 7.7, apply when selecting such cases. However, for some research questions your data set might comprise one or only a few cases. A single case might be defined as the published report of a national inquiry, whereas if your data comprised main political parties' most recent general election manifestos, this would generate only a few cases, one for each political party. These cases would be most likely to be selected using non-probability sampling (Sections 7.8 and 7.9). It is therefore crucial to ensure that the cases selected will be sufficient to enable you to analyse the data quantitatively, answer your research question and meet your objectives.

Using numeric codes

Data for quantitative analysis should, with few exceptions, be recorded using numeric codes for each variable. This makes subsequent analyses, in particular those that require re-coding of data to create new variables, more straightforward. Data collection software

such as Qualtrics™ can be used to export responses selected to questions as numeric codes saving you the effort of entering your data yourself. Where you enter data yourself, the use of predetermined numeric codes enables you to do this quickly and with fewer errors using the numeric keypad on your keyboard. Unfortunately, with numeric codes meaningless analyses, such as calculating a mean (average) gender from codes 1 and 2, or the mean hotel location (Box 12.1), are easier! A common exception to using a numeric code for categorical data is where a postcode or zip code is used as the code for a geographical reference. If you are using a spreadsheet, you will need to keep a list of codes for each variable. Statistical analysis software can store these so that each code is automatically labelled.

Coding categorical data

For many secondary data sources (such as government surveys), a suitable coding scheme will have already been devised when the data were first collected. However, for other secondary sources such as documents (text, voice and visual) and all primary data you will need to decide on a coding scheme. Prior to this, you need to establish the highest level of precision required by your analyses (Figure 12.1).

Existing coding schemes can be used for many variables. These include industrial classification (Prosser 2009), occupation (Office for National Statistics 2021), social class and socioeconomic classification (Office for National Statistics nd a) and ethnic group (Office for National Statistics nd b), social attitude variables (National Centre for Social Research 2021) as well as coding schemes devised and used by other researchers. Wherever possible, we recommend you use these as they:

- save time;
- are normally well tested;
- allow comparisons of your findings with other research findings.

Where possible these codes should be specified in your online survey tool or data collection form as **pre-set codes**, provided there are a limited number of categories (Section 11.5). For such coding at data collection, the person filling in the form selects their response category and the associated code, this being added automatically when using survey design software (Section 11.5). Even if you decide not to use an existing coding scheme, perhaps because of a lack of detail, you should ensure that your codes are still compatible. This means that you will be able to compare your data with those already collected.

Coding of variables after data collection is necessary when you are unclear regarding the likely categories or there are a large number of possible categories in the coding scheme. To ensure that the coding scheme captures the variety in the data (and that it will work!) it is better to wait until data from the first 50 to 100 cases are available and then develop the coding scheme. This is called the **codebook** and can be used for both data from open questions' responses in questionnaires (Box 12.3) as well as visual and text data including tweets (Box 12.4). As when designing your data collection method(s) (Chapters 8–11), it is essential to be clear about the intended analyses, in particular the:

- level of precision required;
- coding schemes used by other research with which comparisons are to be made.

Box 12.3 Focus on student research

Developing a codebook for open questions with multiple responses

As part of his research project, Amil used a questionnaire to collect data from the customers of a local themed restaurant. The questionnaire included an open list question, which asked 'List up to three things you like about this restaurant'. Respondents could therefore provide more than one answer to the question, in other words multiple responses. Their answers included over 50 different 'things' that the 186 customers responding liked about the restaurant, the maximum number mentioned by any one customer being constrained to three by the phrasing of the question.

Once data had been collected, Amil devised a hierarchical coding scheme based on what the customers liked about the restaurant.

Extract from coding scheme used to classify responses:

Categories	Sub-categories	Response	Code
Physical surroundings			1–9
		Decoration	1
		Use of colour	2
		Comfort of seating	3
Dining experience			10–49
	Menu		10–19
		Choice	11
		Regularly changed	12
	Food		20–29
		Freshly prepared	21
		Organic	22
		Served at correct temperature	23
	Staff attitude		30–39
		Knowledgeable	31
		Greet by name	32
		Know what diners prefer	33
		Discreet	34
		Do not hassle	35
		Good service	36
		Friendly	37
		Have a sense of humour	38
	Drinks		40–49
		Value for money	41
		Good selection of wines	42
		Good selection of beers	43
		Served at correct temperature	44

The hierarchical coding scheme meant that individual responses could subsequently be re-coded into categories and sub-categories to facilitate a range of different analyses. These were undertaken using statistical analysis software. Codes were allocated for each of up to three 'things' a customer liked, each of the three 'things' being represented by a separate variable.

Box 12.4 Focus on management research

Developing a codebook for tweet text data

Mirbabaie and Marx (2020) conducted research into patterns of sense-breaking in social media crisis communications and their impact on collective sense-making and sense-giving. Published in *Behaviour and Information Technology,* their research comprises a case study of the 2017 Manchester Arena bombing after the Ariana Grande concert and explores how new novel (sense-breaking) information was introduced through tweets. It includes a social network analysis of 708,147 Twitter postings and a content analysis of 2006 individual tweets.

To undertake their content analysis, they manually selected the 2006 unique tweets that had been retweeted 50 or more times in the first six hours of crisis communication. These were coded by both authors separately using a self-developed codebook that, among other things, classified each tweet in terms of the information frame. The two authors' inter-rater reliability score of 0.892, confirming their coding could be considered as reliable. The 18 unique information frames used to code each tweet are, along with those for each tweet's author listed below:

Information frames	Author roles
Explosion	Private person
Police and emergency rescue presence	Media organisation
Accommodation or lift offerings	Influencer (politics)
Injured people	Journalist
Islamist terrorism	Influencer (news)
Explosion caused by bomb	Fan page (music)
Emotional sensemaking	
Mass panic and chaos	
Missing persons	
Reported fatalities	
Unsupervised children at hotels	
Politics and media critique	
Arrested suspect	
Second bomb	
Gunman at Oldham hospital	
Suicide bomber	
Controlled explosion of 2nd bomb	
Appeal for blood donations	

Mirbabaie and Marx found individual type roles (such as private persons, journalists, and social media influencers) were initiators of sense-breaking in the early stages of the crisis when there was most uncertainty, these messages revolving around the incident reporting, crisis support and rumours. Their analysis, they argue, places increased emphasis on the role of individuals sense-giving efforts on collective sensemaking.

Creating a codebook for categorical data

To create your codebook for each variable you:

1. Examine the data and establish broad categories.
2. Subdivide the broad categories into increasingly specific subcategories dependent on your intended analyses.
3. Allocate codes to all categories at the most precise level of detail required.
4. Note the actual responses that are allocated to each category and produce a codebook.

5 Ensure that those categories that may need to be aggregated are given adjacent codes to facilitate re-coding.

Subsequently codes are attached to specific segments (or units) of data (Rose et al. 2015). Segments may be individual words, based on identifying and counting particular words in the content of your sample, as in our example about attitudes towards an organisational policy. Alternatively, the segment may be larger than a word, being related to the occurrence of particular phrases or to sentences or paragraphs. In coding occurrences in the data, you are coding the **manifest content**, which is components that are clearly visible in the data and can be counted. Larger segments (sentences or paragraphs) are often used where it is important to contextualise content to be able to categorise the meanings behind the manifest content. The meaning behind the manifest content is termed the **latent content** and is often difficult to infer even from larger segments. However, in general manifest content is likely to be reflected in the use of the word or phrase and latent content is likely to be reflected in the use of larger segments. A segment may also focus on the characteristics of those involved, as in our example where gender, age, occupation and work department were recorded, or other characteristics that are relevant to record and analyse for your research. Segment in visual data varies from individual images to visual sequences.

Coding involves you working through your data to code segments of these data according to the categories you have devised. We suggest you start with a sample of your data and test your codes and, if necessary, modify your codebook before applying it across all of your data. An important way for you to assess whether your system of categories is transparent and capable of being applied consistently by others is for you and a friend to code a sample of the same data separately using this system of categories and then to compare your coding. This is known as **inter-rater reliability** and can be assessed by measuring the extent to which two or more coders (raters) agree. One way of doing this is to calculate the percentage agreement using the following formula:

$$PA = \frac{A}{n} \times 100$$

where:

PA = percentage agreement
A = number of agreements between the two coders
n = number of segments coded

Although there is no clear agreement regarding an acceptable percentage agreement, McHugh (2012) suggests that scores of 80 per cent or higher would normally be considered acceptable. A more sophisticated measure of inter-rater reliability for two raters is Cohen's Kappa (McHugh, 2012), which can usually be calculated using your analysis software.

Coding numerical data

The actual numbers recorded, such as a respondent's age in years or the number of tickets sold for a football match, are often used as codes for numerical data, even though this level of precision may not be required. Once these data have been entered in a data matrix (Section 12.4), you can use analysis software to group or combine data to form additional variables with less detailed categories. This process is referred to as **re-coding**. For example, a Republic of Ireland employee's salary could be coded to the nearest euro and entered into the matrix as 73543 (numerical discrete data). Later, re-coding could be used to place it in a group of similar salaries, from €70,000 to €79,999 (categorical ranked data).

Coding missing data

Where you have been able to obtain at least some data for a case, rather than none, you should ensure that each variable for each case in your data set has a code. Where data have not been collected for some variables, you therefore need a code to signify these data are missing. The choice of code to represent missing data is up to you, although some statistical analysis software has a code that is used by default. A missing data code can also be used to indicate why data are missing. Missing data are important as they may affect whether the data you have collected are representative of the population. If missing data follow some form of pattern, such as occurring for particular questions or for a subgroup of the population, then your results are unlikely to be representative of the population and so you should not ignore the fact they are missing. However, if data are missing at random, then it is unlikely that this will affect your results being representative of the population (Little and Rubin 2019). Reasons for missing data in relation to questionnaires include:

- the data were not required from the respondent, perhaps because of a skip generated by a filter question in a questionnaire;
- the respondent refused to answer the question (a **non-response**);
- the respondent did not understand the question;
- the respondent did not know the answer or did not have an opinion. Sometimes this is treated as implying an answer; on other occasions it is treated as missing data;
- the respondent may have missed a question by mistake, or the respondent's answer may be unclear;
- leaving part of a question in a survey blank implies an answer; in such cases the data are not classified as missing (Section 11.5).

Content analysis

Content analysis is a specific analytical technique of categorising and coding text, images and expressions as data that have been created to be seen, read interpreted and acted upon by people, data being analysed with such uses in mind (Krippendorff 2018). It therefore tends to focus upon textual matter, symbols, images, messages, mass media content and interactions; using a systematic replicable coding scheme to enable quantitative analysis. Although there are numerous definitions of content analysis, most draw on an early definition by Berelson (1952:18) as a 'technique for the objective, systematic and quantitative description of the manifest content of communication'.

The 'objective' nature of content analysis emphasises that different researchers should be able to replicate their analysis by using the explicit categories to code components and produce an identical outcome. What you choose to code and subsequently count is dependent upon your research question. You may, for example, ask what are the attitudes towards an organisational policy and who holds these views. Content analysis of interview recordings (voice), interview transcripts (text), or organisation communications could be used to code variables such as attitude towards the policy, these attitude data being categorised as positive, neutral or negative. You would identify terms denoting negative, neutral or positive attitudes, these typically being pre-determined before your analysis commences. You would categorise and code specific instances of these in the text and identify the characteristics of the holders of each of these attitudes defining these categories using variables such as gender, age, occupation, work department and so forth.

'Systematic' emphasises that content analysis should be conducted in a consistent, transparent and replicable way with clear rules for defining and applying codes being detailed in a code book or coding manual. This coding scheme can draw on existing

schemes developed by other researchers or developed inductively from the data (Box 12.4) using similar techniques to those outlined in Section 13.6. Holsti (1969) advocates five general principles for the systematic development of variables' categories in content analysis. These should:

- link obviously to the scope and purpose of the research topic, not least so that the relationship of these categories to the research question and objectives is evident (Section 2.6);
- be exhaustive so that every relevant component of data may be placed into an analytical category;
- be mutually exclusive so that each component of data may only be placed into one analytical category, rather than possibly fitting into more than one;
- be independent so that components of data exhibiting related but not the same characteristics cannot be coded into the same category; and
- be developed from a single classification to avoid conceptual confusion.

Subsequent quantitative analysis range from calculating the frequency of different categories for a variable (Section 12.6) to examining relationships between variables created (Section 12.7). Using our earlier example about attitudes towards an organisational policy and who holds these views, you could calculate the frequency for each category of the variable attitude towards the policy and establish the relative importance of negative, neutral or positive attitudes. It would also be possible for you to present these data graphically (Section 12.5) to, for example, show the relative amounts for each of the categories; and test statistically whether differences in attitudes were associated significantly with variables such as gender (Section 12.7). However, while the significance or otherwise of such relationships could be established, explaining in detail why they were significant just using content analysis would be difficult.

12.4 Data entry and checking

When entering your data into analysis software you need to ensure the:

- data layout and format meet that required by the analysis software;
- data, once entered, have been saved and a back-up copy made;
- data have been checked for errors and any found corrected;
- need to weight cases has been considered.

Data layout

Some primary data collection methods, such as online questionnaires, computer-aided personal interviewing (CAPI) and computer-aided telephone interviewing (CATI) automatically enter and save data electronically. These data can subsequently be exported in a range of formats compatible with different analysis software. Cloud-based survey design, data collection and analysis software such as Qualtrics Research CORE™ and SurveyMonkey™ go one stage further and integrate the analysis in the same software as questionnaire design and data capture (Qualtrics 2021; SurveyMonkey 2021). Alternatively, digital secondary data (Section 8.3) can be downloaded in a format compatible with your analysis software. However, where you have to prepare and enter data yourself for computer analysis, you will need to be clear about the precise data layout requirements of your analysis software.

Table 12.1 A simple data matrix

	Id	Variable 1	Variable 2	Variable 3	Variable 4
Case 1	1	27	1	2	1
Case 2	2	19	2	1	2
Case 3	3	24	2	3	1

Virtually all analysis software will accept your data if they are entered in tabular format as a **data matrix** (Table 12.1). Once data have been entered into your analysis software, it is usually possible to save them in a format that is compatible with other software. Within a data matrix, each column usually represents a separate variable for which you have obtained data. Each matrix row contains the variables for an individual case, that is, an individual unit for which data have been obtained. If your data have been collected using a questionnaire, each row will contain the coded data from one questionnaire; if your data are pictures tweeted by people attending a heavy metal music concert then each row will contain the coded data relating to a picture tweeted. Secondary data that have already been stored in a data file are almost always held as a data matrix. For such data sets you usually select the subset of variables and cases you require and save these as a separate matrix. If you enter your own data, these are input directly into your chosen analysis software one case (row) at a time using codes to record the data (Box 12.5). Larger data sets with more data variables and cases result in larger data matrices. Although data matrices store data using one column for each variable, this may not be the same as one column for each question for data collected using surveys (Box 12.6).



Box 12.5 Focus on student research

A spreadsheet data matrix

Lucy was interested in what people videoed with their smartphones when they attended a trade show. Thirty trade show visitors who had used their smartphones consented to allow her to use the video clips they had taken. In all, she had 217 videos to analyse. Lucy decided to treat each video clip as a separate case. In her Excel spreadsheet, the first variable (*id*) was the video clip identifier. This meant that she could link data for each case (row) in her matrix to the video clip when checking for errors. The second variable (*age*) contained numerical (ratio) data, the age of each person who had taken the video clip (at the time the video had been taken). Subsequent variables contained further data: the third (*gender*) recorded this dichotomous (categorical) data using code 1 for a male and 2 for a female person taking the video clip. The fourth variable (*length*) recorded the length of the video clip in seconds (numerical, ratio data). The fifth variable (*focus*) recorded the overall focus of the video clip. In developing her codebook for this nominal (categorical) variable Lucy had noted that the video clips focussed on three categories: products (code 1) services (code 2) and people (code 3). The codes used by Lucy, therefore, had different meanings for different variables. Subsequent variables related to different aspects of the content of the video clips, the codes being recorded in Lucy's codebook.

	A	B	C	D	E	F	G
1	id	age	gender	focus	length	people	interaction
2	1	27	1	2	5.9	3	
3	2	35	2	2	7.8	1	
4	3	41	2	3	23.2	1	

Box 12.6 Focus on student research

Data coding for more advanced statistical analysis software

As part of a market research project, Zack needed to discover which of four products (tomato ketchup, brown sauce, soy sauce and mayonnaise) had been purchased within the last month by consumers. He therefore needed to collect four data items from each respondent:

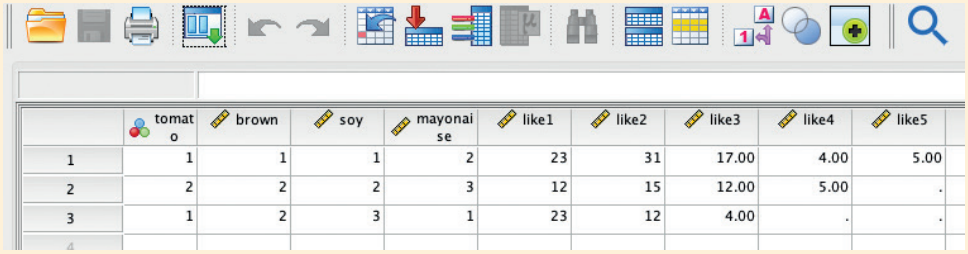
- Tomato ketchup purchased within the last month? Yes/No
- Brown sauce purchased within the last month? Yes/No
- Soy sauce purchased within the last month? Yes/No
- Mayonnaise purchased within the last month? Yes/No

Each of these data items is a separate variable. However, the data were collected using one matrix question in an interviewer completed telephone questionnaire:

1 Which of the following items have you purchased within the last month?

Item	Purchased	Not purchased	Not sure
Tomato ketchup	☐1	☐2	☐3
Brown sauce	☐1	☐2	☐3
Soy sauce	☐1	☐2	☐3
Mayonnaise	☐1	☐2	☐3

The data Zack collected from each respondent formed four separate nominal (categorical) variables in the data matrix using numerical codes (1 = purchased, 2 = not purchased, 3 = not sure). This is known as multiple-dichotomy coding.



	tomato	brown	soy	mayonaise	like1	like2	like3	like4	like5
1	1	1	1	2	23	31	17.00	4.00	5.00
2	2	2	2	3	12	15	12.00	5.00	.
3	1	2	3	1	23	12	4.00	.	.

Zack also included a question (question 2 below) that could theoretically have millions of possible responses for each of the 'things'. For such questions, the number of 'things' that each respondent mentions may also vary. Our experience suggests that virtually all respondents will select five or fewer. Zack therefore left space to code up to five responses after data had been collected in the nominal (categorical) variables 'like1', 'like2', 'like3', 'like4' and 'like5'. This is known as multiple-response coding. When there were fewer than five responses given, the code '.' was entered automatically by the software into empty cells for the remaining 'like' variables, signifying missing data.

For office use only

2 List up to five things you like about tomato ketchup

. . . . . ☐ ☐ ☐ ☐
. . . . . ☐ ☐ ☐ ☐
. . . . . ☐ ☐ ☐ ☐
. . . . . ☐ ☐ ☐ ☐
. . . . . ☐ ☐ ☐ ☐

We strongly recommend that you save your data regularly as you are entering it, to minimise the chances of deleting by accident! In addition, you should save multiple backup or security copies on your smartphone or other mass storage device, and the cloud, ensuring your data are stored securely.

If you intend to enter data into a spreadsheet, the first variable is in Column A, the second in Column B and so on. Each cell in the first row (1) should contain a short variable name to enable you to identify each variable. Subsequent rows (2 onwards) will each contain the data for one case (Box 12.5). Statistical analysis software follows the same logic, although the variable names are usually displayed 'above' the first row (Box 12.6).

The **multiple-response method** of coding uses the same number of variables as the maximum number of different responses from any one case. For Question 2 these were named 'like1'through to 'like5' (Box 12.6). Each of these variables would use the same codes and could include any of the responses as a category. Statistical analysis software often contains multiple-response procedures to analyse such data. The alternative, the **multiple-dichotomy method** of coding, uses a separate variable for each different answer (Box 12.5). For Question 2 (Box 12.6) a separate variable could have been used for each 'thing' listed: for example, flavour, consistency, bottle shape, smell, price and so on. You subsequently would code each variable as 'listed' or 'not listed' for each case. However, although the multiple dichotomy method makes it easy to calculate the number of responses for each 'thing' (Field, 2018), it means where there are a large number of different responses, a large number of variables will be required. As entering data for a large number of variables is more time-consuming, it is important to ensure your statistical analysis software can calculate the number of responses for each 'thing' if you intend to use the multiple response method.

Entering and saving data

If you have downloaded secondary data as a file, or have used online survey tool, your data will already have been entered (input) and saved. However, you may need to enter and save the data as a file yourself. In either situation, it is essential that you ensure that your data have been recorded correctly and save the file regularly. When saving our data files, we have found it helpful to include the word DATA in the filename. When entering data, the well-known maxim 'rubbish in, rubbish out' certainly applies! More sophisticated analysis software allows you to attach individual labels to each variable and the codes associated with each of them. If this is feasible, we strongly recommend that you do this. By ensuring the labels replicate the exact words used in the data collection, you will reduce the number of opportunities for misinterpretation when analysing your data. Taking this advice for the variable 'like1' in Box 12.6 would result in the variable label 'List up to three things you like about this restaurant', each value being labelled with the actual response in the coding scheme.

Checking for errors

No matter how carefully you code and subsequently enter data there will always be some errors. The main methods to check data for errors are as follows:

- Look for illegitimate codes. In any coding scheme, only certain numbers are allocated. Other numbers are, therefore, errors. Common errors when entering the data yourself are the inclusion of letters O and o instead of zero, letters l or I instead of 1, and number 7 instead of 1.

- Look for illogical relationships. For example, if a person is coded to the 'higher managerial occupations' socioeconomic classification category and she describes her work as 'manual', it is likely an error has occurred.
- For questionnaire data, check that rules in filter questions are followed. Certain responses to filter questions (Section 11.6) mean that other variables should be coded as missing values. If this has not happened, there has been an error.

For each possible error, you need, if possible, to discover whether it occurred at coding or data entry and then correct it. By giving each case a unique numeric identifier (Box 12.5), it is possible to link the matrix to the original data. You must, however, remember to ensure the identifier is on the data collection form and entered along with the other data into the matrix.

Data checking is very time-consuming and so is often not undertaken. Beware: not doing it is very dangerous and can result in incorrect results from which false conclusions are drawn!

Weighting cases

Most data you use will be collected from a sample. For some forms of probability sampling, such as stratified random sampling (Section 7.6), you may have used a different sampling fraction for each stratum. Alternatively, you may have obtained a different response rate for each of the strata. To obtain an accurate overall picture you will need to take account of these differences in response rates between strata. A common method of achieving this is to use cases from those strata that have lower proportions of responses so each represents more than one case in your analysis (Box 12.7). Most statistical analysis software allows you to do this by **weighting** cases.

To weight the cases, you:

1. Calculate the percentage of the population responding for each stratum.
2. Establish which stratum had the highest percentage of the population responding.
3. Calculate the weight for each stratum using the following formula:



Box 12.7 Focus on student research

Weighting cases

Doris had used stratified random sampling to select her sample. The percentage of each stratum's population that responded is given below:

- upper stratum: 90 per cent;
- lower stratum: 65 per cent.

To account for the differences in the response rates between strata she decided to weight the cases prior to analysis.

Each case in the upper stratum counted as 1 case in her analysis.

The weight for the upper stratum was : $\frac{90}{90} = 1$

Each case in the lower stratum counted for 1.38 cases in her analysis.

The weight for the lower stratum was : $\frac{90}{65} = 1.38$

Doris entered these weights as a separate variable in her data matrix and used the statistical analysis software to apply them to the data.

$$\text{Weight} = \frac{\text{highest proportion of population responding for any stratum}}{\text{proportion of population responding in stratum for which calculating weight}}$$

(Note: if your calculations are correct this will always result in the weight for the stratum with the highest proportion of the population responding being 1.)

4 Apply the appropriate weight to each case.

Beware: many authors (for example, Hays 1994) question the validity of using statistics to make inferences from your sample if you have weighted cases.

12.5 Exploring and presenting data: an overview

Once your data have been entered, checked and errors corrected, you are ready to start your analysis. We have found Tukey's (2020) **exploratory data analysis (EDA)** approach useful in these initial stages. This approach emphasises using graphs to explore and understand your data. Although within data analysis the term graph has a specific meaning: '. . . a visual display that illustrates one or more relationships among numbers' (Kosslyn 2006: 4), it is often used interchangeably with the term 'chart' both by authors and data analysis software. Even more confusingly, what are referred to as 'pie charts' are actually graphs! Tukey (2020) also emphasises the importance of using your data to guide your choice of analysis techniques. As you would expect, we believe that it is important to keep your research question(s) and objectives in mind when exploring your data. However, exploratory data analysis allows you flexibility to introduce previously unplanned analyses to respond to new findings. It therefore formalises the common practice of looking for other relationships in data which your research was not initially designed to test. This should not be discounted, as it may suggest other fruitful avenues for analysis.

Even at this stage it is important that you structure and label clearly each graph and table to avoid possible misinterpretation. Box 12.8 provides a checklist of points to remember when designing a graph or table.

Box 12.8 Checklist

Designing your graphs and tables

For both graphs and tables

- ✔ Does it have a brief but clear and descriptive title?
- ✔ Are the units of measurement used stated clearly?
- ✔ Are the sources of data used stated clearly?
- ✔ Are there notes to explain abbreviations and unusual terminology?
- ✔ Does it state the size of the sample on which the values in the graph/table are based (where needed)?

For graphs

- ✔ Does it have clear axis labels?
- ✔ Are bars and their components in the same logical sequence?
- ✔ Is more dense shading used for smaller areas?
- ✔ Have you avoided misrepresenting or distorting the data?
- ✔ Is a key or legend included (where necessary)?

For tables

- ✔ Does it have clear column and row headings?
- ✔ Are columns and rows in a logical sequence?
- ✔ Are numbers in columns right justified?

We have found it best to begin exploring data by looking at individual variables and their components. The key aspects you may need to consider will be guided by your research question(s) and objectives, and are likely to include (Kosslyn 2006) for single variables:

- specific amounts represented by individual data values;
- relative amounts such as:
  - highest and lowest data values;
  - trends in data values;
  - proportions and percentages for data values;
  - distributions of data values.

Once you have explored these, you can then begin to compare variables and interdependences between variables, by (Kosslyn 2006):

- comparing intersections between the data values for two or more variables;
- comparing cumulative totals for data values and variables;
- looking for relationships between cases for variables.

These are summarised in Table 12.2. Most analysis software can create tables and graphs. Your choice will depend on those aspects of the data to which you wish to direct your readers' attention and the precision at which the data were measured. This section is concerned only with tables and two-dimensional graphs, including pictograms, available with most spreadsheets (Table 12.2). Three-dimensional graphs are not discussed, as

Table 12.2 Data presentation by data type: A summary

	Categorical		Numerical	
	Nominal (Descriptive)	**Ordinal (Ranked)**	**Continuous**	**Discrete**
To show one variable so that any *specific amount* can be read easily	Table/frequency distribution (data often grouped)			
To show the relative amount for categories or values for one variable so that *highest* and *lowest* are clear	Bar graph/chart, pictogram or data cloud (data may need grouping)		Histogram or frequency polygon (data must be grouped)	Bar graph/chart or pictogram (data may need grouping)
To show the *trend* for a variable		Line graph or bar graph/chart	Line graph or histogram	Line graph or bar graph/chart
To show the *proportion* or *percentage* of occurrences of categories or values for one variable	Pie chart or bar graph/chart (data may need grouping)		Histogram or pie chart (data must be grouped)	Pie chart or bar graph/chart (data may need grouping)
To show the *distribution* of values for one variable			Frequency polygon, histogram (data must be grouped) or box plot	Frequency polygon, bar graph/chart (data may need grouping) or box plot

(*continued*)

Table 12.2 Data presentation by data type: A summary (*Continued*)

	Categorical		Numerical	
	Nominal (Descriptive)	**Ordinal (Ranked)**	**Continuous**	**Discrete**
To show the *interrelationship* between two or more variables so that any *specific* amount can be read easily	Contingency table/cross-tabulation (data often grouped)			
To compare the relative amount for categories or values for two or more variables so that *highest* and *lowest* are clear	Multiple bar graph/chart (continuous data must be grouped; other data may need grouping)			
To compare the *proportions* or *percentages* of occurrences of categories or values for two or more variables	Comparative pie charts or percentage component bar graph/chart (continuous data must be grouped; other data may need grouping)			
To compare the *distribution* of values for two or more variables			Multiple box plot	
To compare the *trends* for two or more variables so that *intersections* are clear	Multiple line graph or multiple bar graph/chart			
To compare the frequency of occurrences of categories or values for two or more variables so that *cumulative totals* are clear	Stacked bar graph/chart (continuous data must be grouped; other data may need grouping)			
To compare the *proportions* and *cumulative totals* of occurrences of categories or values for two or more variables	Comparative proportional pie charts (continuous data must be grouped; other data may need grouping)			
To show the *interrelationship* between cases for two variables		Scatter graph/scatter plot		

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2022

these can often mislead or hinder interpretation (Kosslyn 2006). Those tables and graphs most pertinent to your research question(s) and objectives will eventually appear in your research report to support your arguments. You should therefore save a copy of all tables and graphs you create.

12.6 Exploring and presenting individual variables

To show specific amounts

Tables

The simplest way of summarising data for individual variables so that specific amounts can be read is to use a **table (frequency distribution)**. For categorical data, the table summarises the number of cases (frequency) in each category. For variables where there are likely to be a large number of categories (or values for numerical data), you will need to group the data into categories that reflect your research question(s) and objectives.

To show highest and lowest values

Bar graphs and bar charts

Tables attach no visual significance to highest or lowest data values unless emphasised by alternative fonts. Graphs can provide visual clues, although both categorical and numerical data may need grouping. For categorical and discrete data, bar graphs and pictograms are both suitable. Generally, bar graphs provide a more accurate representation and should be used for research reports. In a **bar graph**, also often known as **a bar chart**, the height or length of each bar represents the frequency of occurrence. Bars are separated by gaps, usually half the width of the bars. Bar graphs where the bars are vertical (as in Figure 12.2) are sometimes called bar or column charts. This bar graph emphasises that the European Union member state with the highest proportion of energy from renewable sources in 2019 was Iceland, while Malta, and then either Luxembourg or the Netherlands had the lowest proportions of energy from renewable sources. By presenting the bars in alphabetical order of country, it makes it easier to locate a specific country rather than compare relative amounts (Figure 12.4).

Pictograms

In a **pictogram** (also known as a pictograph), each bar is replaced by a picture or series of pictures chosen to represent the data and convey a general impression or gain an audience's attention. For this reason, they are often used in infographics. To illustrate the impact of doing this, we have used data of worldwide Harley-Davidson motorcycle shipments to generate both as a pictogram (Figure 12.3) and, later, a histogram (Figure 12.5). In the pictogram each picture represents 20,000 motorcycles. Pictures in pictograms can, like bars in bar graphs and histograms, be shown in columns or horizontally. The height of the column or length of the bar made up by the pictures represents the frequency of occurrence. In this case we felt it was more logical to group the pictures as a horizontal bar rather than vertically on top of each other. You will have probably also noticed that, in the pictogram, there are gaps between the 'bars'. While this normally signifies discrete categories of data, it is also acceptable to do this for continuous data (such as years) when drawing a pictogram, to aid clarity. Although analysis software allows you to convert a bar graph or histogram to a pictogram easily and accurately, it is more difficult to establish the actual data values from a pictogram. This is because the number of units part of a picture

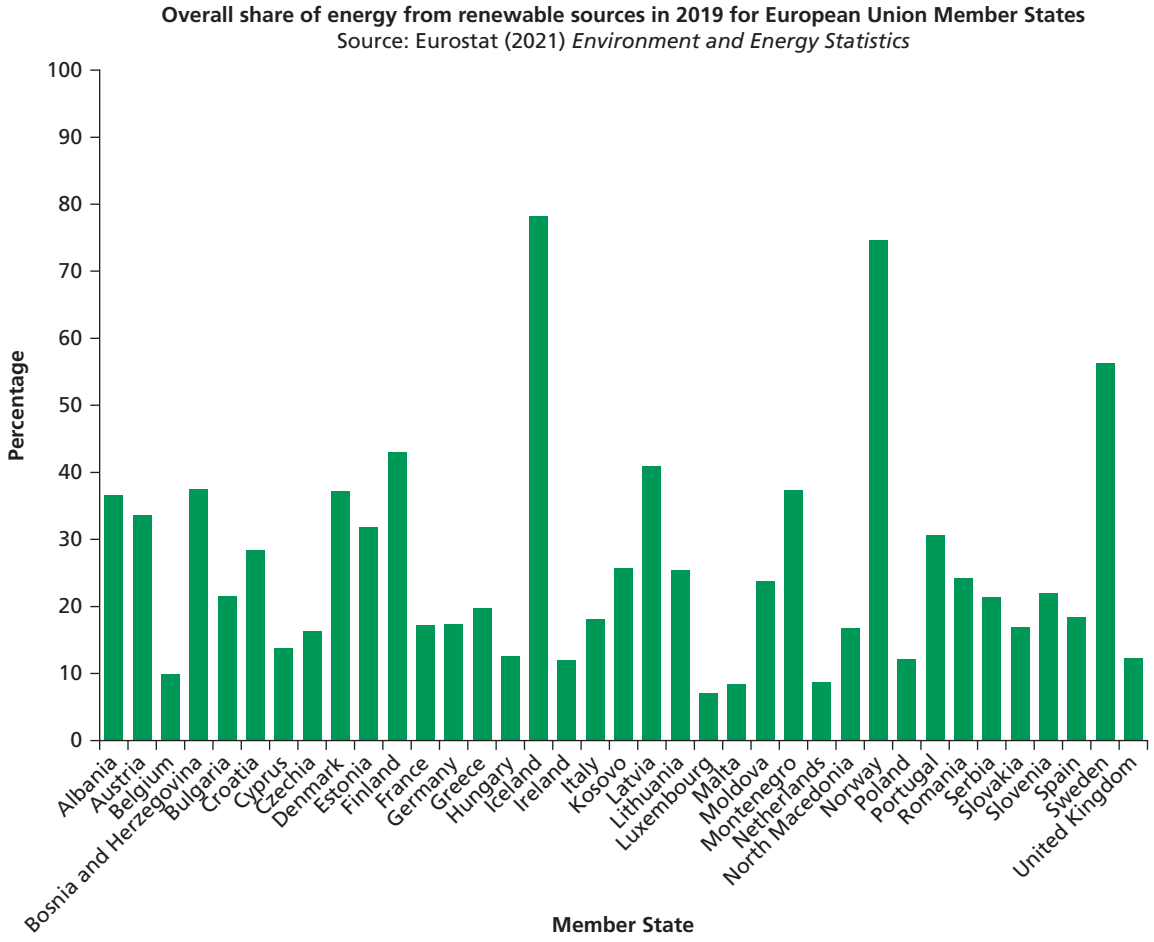


Figure 12.2 Bar graph
Source: Adapted from Eurostat (2021) © European Communities 2021

represents is not immediately clear. For example, in Figure 12.3, how many motorcycles shipped would a rear wheel represent?

Pictograms have a further drawback, namely that it is very easy to misrepresent the data. Both Figures 12.3 and 12.5 show shipments of Harley-Davidson motorcycles declined between 2006 and 2010 and again from 2014. Using our analysis software, the first of these declines could have been represented using a picture of a motorcycle in 2006 that was nearly one and a half times as long as the picture in 2010. However, to keep the proportions of the motorcycle accurate, the picture would have needed to be nearly one and a half times as tall. Consequently, the actual area of the picture for 2006 would have been over twice as great and would have been interpreted as motorcycle shipments being twice as large in 2006 than 2010! Because of this we would recommend that if you are using a pictogram, you decide on a standard value for each picture and do not alter its size. In Figure 12.3 we choose one image to represent 20,000 motorcycles and included a key to indicate the value each image represented.

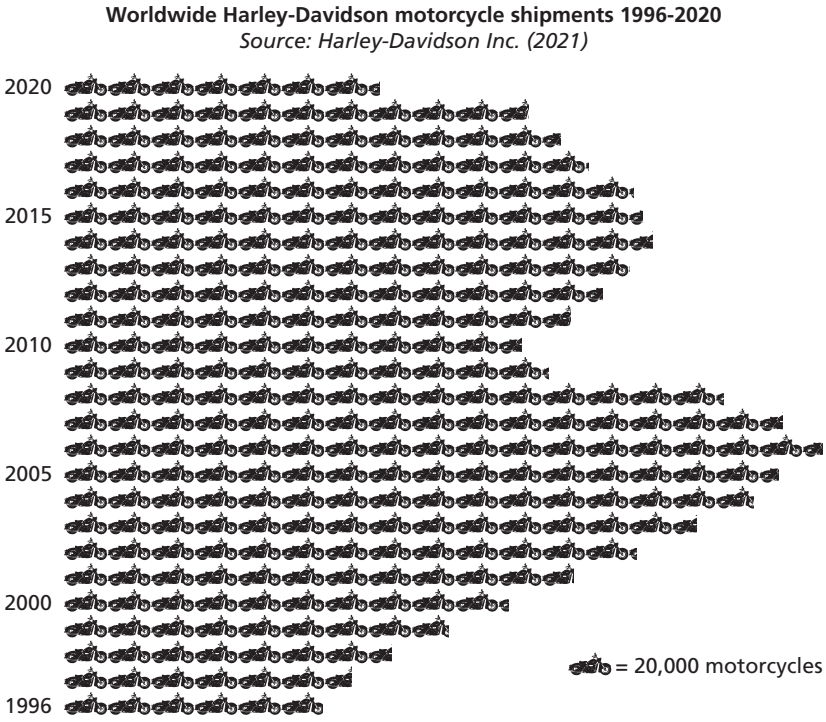


Figure 12.3 Pictogram
Source: Adapted from Harley-Davidson Inc. (2021)

To show relative amounts

Bar graphs

To emphasise the relative values represented by each of the bars in a bar graph, the bars may be reordered in either descending or ascending order of the frequency of occurrence represented by each bar (Figure 12.4). It is now clear from the order of the bars that Iceland had the highest percentage of energy from renewable sources in 2019, with Luxembourg and Malta having the lowest proportions.

Word clouds

For text data the relative proportions of key words and phrases can be shown using a **word cloud** (Box 12.9), there being numerous free word cloud generators such as Wordclouds.com™ available online. In a word cloud the frequency of occurrence of a particular word or phrase is represented by the font size of the word or occasionally the colour.

Histograms

Most researchers use a histogram to show highest and lowest values for continuous data. Prior to being drawn, data will often need to be grouped into class intervals. In a **histogram**, the area of each bar represents the frequency of occurrence, and the continuous nature of the data emphasised by the absence of gaps between the bars. For equal

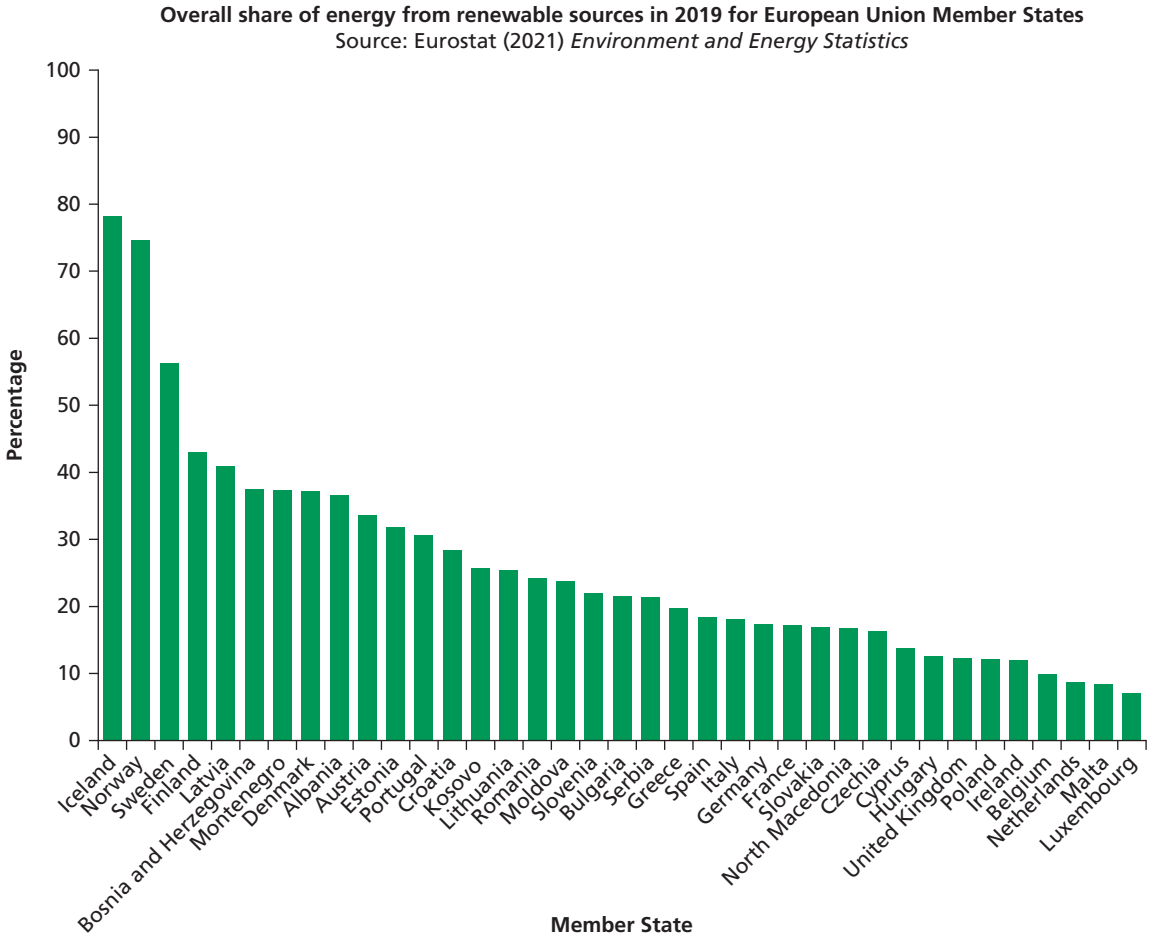


Figure 12.4 Bar graph (data reordered)
Source: Adapted from Eurostat (2021) © European Communities 2021.

Box 12.9 Focus on student research

Using a word cloud to display the frequency of key terms

Luca undertook a research project evaluating types of pay structure. This involved him conducting interviews in organisations that each used a different pay structure. Luca wanted to understand the reasons why each had decided to adopt a particular structure and to evaluate perceptions about that structure's use in practice. To demonstrate the frequency of key terms used by his interview participants he thought it might be useful to produce a word cloud for each set of interviews exploring a particular pay structure. Since these word clouds would represent the actual terms used by his interview participants, they also helped Luca to demonstrate how he had derived his codes from his data. This word cloud represents the terms used by interview participants in an organisation that had implemented a Job Families pay structure.



Source: © Mark Saunders 2018

width class intervals, the height of your bar still represents the frequency of occurrences (Figure 12.5) and so the highest and lowest values are easy to distinguish. For histograms with unequal class interval widths, this is not the case (Box 12.12), and each bar's height represents the relative frequency of occurrences. In Figure 12.5 the histogram emphasises that the highest number of Harley-Davidson motorcycles shipped worldwide was in 2006, and the lowest number in 1986.

Analysis software treats histograms for data of equal width class intervals as a variation of a bar chart. Unfortunately, analysis software can rarely cope automatically with the

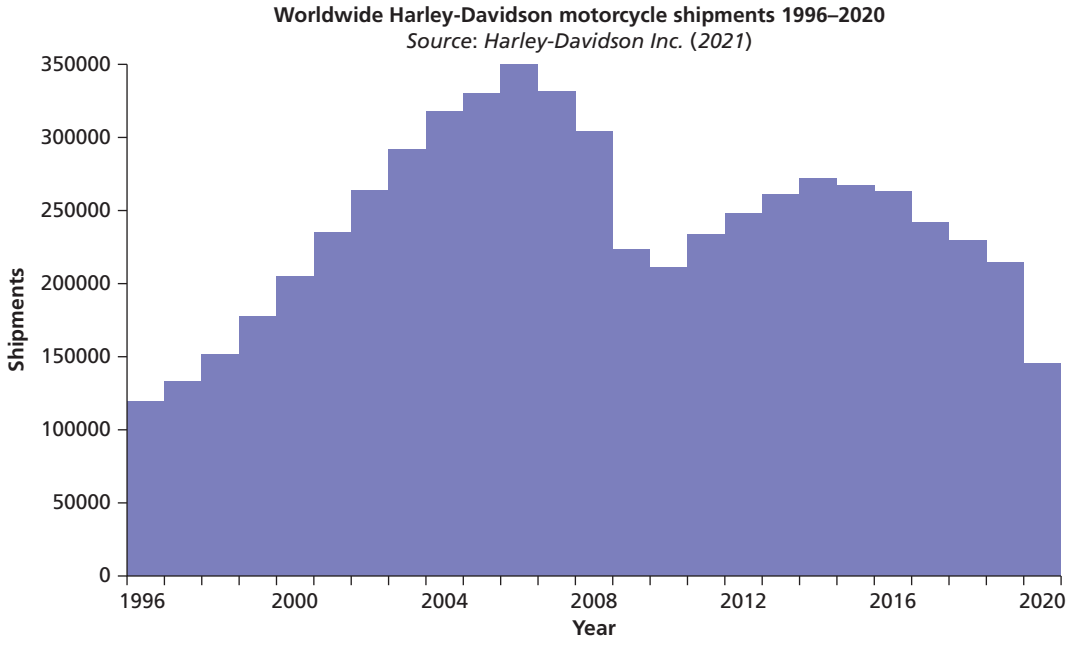


Figure 12.5 Histogram
Source: Adapted from Harley-Davidson Inc. (2021).

calculations required to draw histograms for unequal class intervals. Consequently, you may have to use a bar chart owing to the limitations of your analysis software.

Frequency polygons

Frequency polygons, although more frequently used to show distributions, are used occasionally to illustrate limits. Most analysis software treats them as a version of a line graph (Figure 12.6) in which the lines are extended to meet the horizontal axis, provided class widths are equal.

To show a trend

Line graphs

Trends can only be presented for variables containing numerical (and occasionally ranked) longitudinal data. The most suitable diagram for exploring the trend is a **line graph** (Kosslyn 2006) in which the data values for each time period are joined with a line to represent the trend. In Figure 12.6 the line graph reveals the rise and decline in the number of Harley-Davidson motorcycles shipped worldwide between 1996 and 2020. You can also use histograms (Figure 12.5) to show trends over continuous time periods and bar graphs to show trends between discrete time periods. The trend can also be calculated using time-series analysis (Section 12.12).

To show proportions or percentages

Pie charts

The most frequently used diagram to emphasise the proportion or share of occurrences is the pie chart, although bar charts have been shown to give equally good results

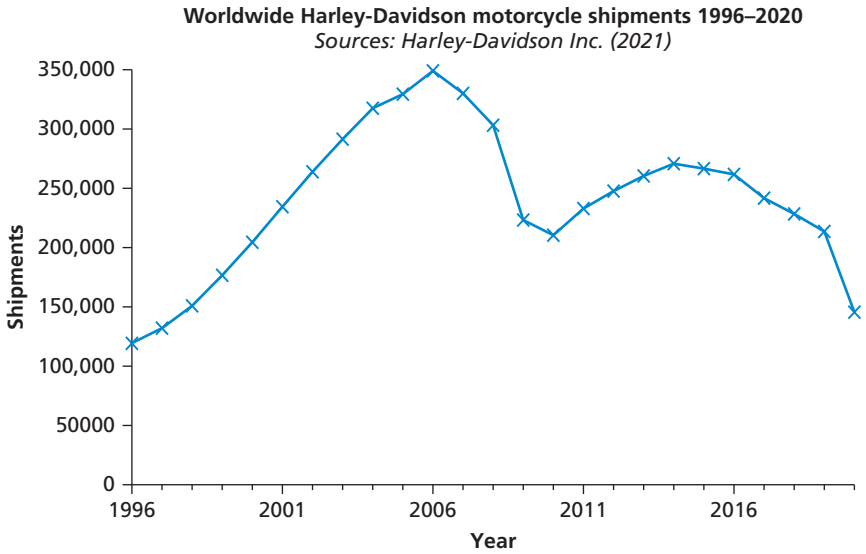


Figure 12.6 Line graph
Source: Adapted from Harley-Davidson Inc. (2021).

(Anderson et al. 2020). A **pie chart** is divided into proportional segments according to the share each has of the total value and the total value represented by the pie is noted (Box 12.10). For numerical and some categorical data, you will need to group data prior to drawing the pie chart, as it is difficult to interpret pie charts with more than six segments (Keen 2018).

Box 12.10 Focus on student research

Exploring and presenting data for individual variables

As part of audience research for his dissertation, Valentin asked people attending a play at a provincial theatre to complete a short paper questionnaire. This collected responses to 25 questions including:

3 How many plays (including this one) have you seen at this theatre in the past year?

11 This play is good value for money.

strongly disagree ☐1	disagree ☐2
agree ☐3	strongly agree ☐4

24 How old are you?

Under 18 ☐1	18 to 34 ☐2
35 to 64 ☐3	65 and over ☐4

Exploratory analyses were undertaken using analysis software and diagrams and tables generated. For



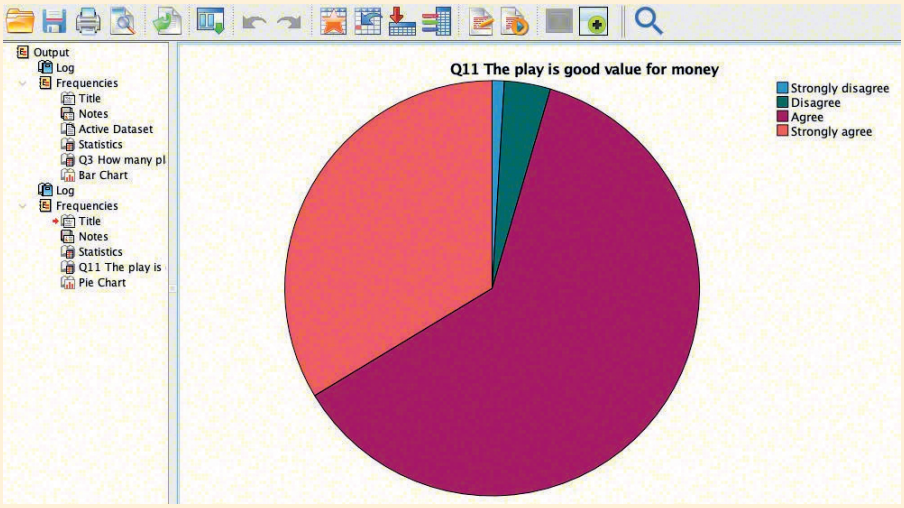
Question 3, which collected discrete (numerical) data, the aspects that were most important were the distribution of values and the highest and lowest numbers of plays seen. A bar graph, therefore, was drawn:

This emphasised that the most frequent number of plays seen by respondents was three and the least frequent number of plays seen by the respondents was either nine or probably some larger number. It also suggested that the distribution was positively skewed towards lower numbers of plays seen.

For Question 11 (ordinal categorical data), the most important aspect was the proportion of people

Box 12.10 Focus on student research (*continued*)

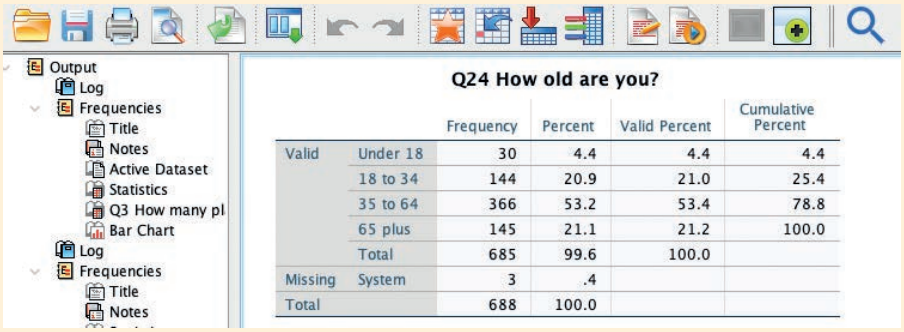
Exploring and presenting data for individual variables



agreeing and disagreeing with the statement. A pie chart was therefore drawn, although unfortunately the shadings were not similar for the two 'agree' categories and for the two 'disagree' categories.

This emphasised that the vast majority of respondents (95 per cent) agreed that the play was good value for money.

Question 24 collected data on each respondent's age. This question had grouped continuous (numerical) data into four unequal-width age groups meaning it was recorded as ordinal (categorical) data. For this analysis, the most important aspects were the specific number and percentage of respondents in each age category and so a table was constructed.



Q24 How old are you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 18	30	4.4	4.4	4.4
	18 to 34	144	20.9	21.0	25.4
	35 to 64	366	53.2	53.4	78.8
	65 plus	145	21.1	21.2	100.0
	Total	685	99.6	100.0	
Missing	System	3	.4		
Total		688	100.0		

To show the distribution of values

Frequency polygons

Prior to using many statistical tests (Sections 12.8 to 12.11) it is necessary to establish the distribution of values for variables containing numerical data. For continuous data, this can be visualised by plotting a histogram or frequency polygon. For discrete data a bar graph or frequency polygon can be plotted. A **frequency polygon** is a line graph connecting the mid points of the bars of a histogram or bar graph (Figure 12.13). If your graph shows a bunching to the left and a long tail to the right, the data are **positively skewed** (Figure 12.7). If the converse is true, the data are **negatively skewed** (Figure 12.7). If your data are equally distributed either side of the highest frequency, then they are **symmetrically distributed**. A special form of the symmetric distribution, in which the data can be plotted as a bell-shaped curve, is known as **normal distribution** (Figure 12.7).

The other indicator of the distribution's shape is **kurtosis** – the pointedness or flatness of the distribution compared with normal distribution. If a distribution is more pointed or peaked, it is said to be leptokurtic, and the kurtosis value is positive. If a distribution is flatter, it is said to be platykurtic and the kurtosis value is negative. A distribution that is between the extremes of peakedness and flatness is said to be mesokurtic and has a kurtosis value of zero (Dancey and Reidy 2020).

Box plots

An alternative, often included in more advanced statistical analysis software, is the **box plot** (Figure 12.8). This provides a pictorial representation of the distribution of the data for a

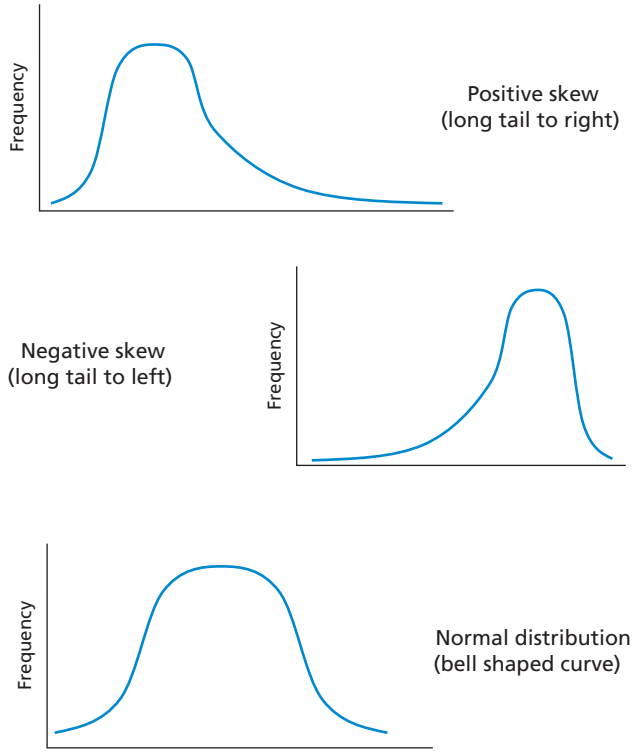


Figure 12.7 Frequency polygons showing distributions of values

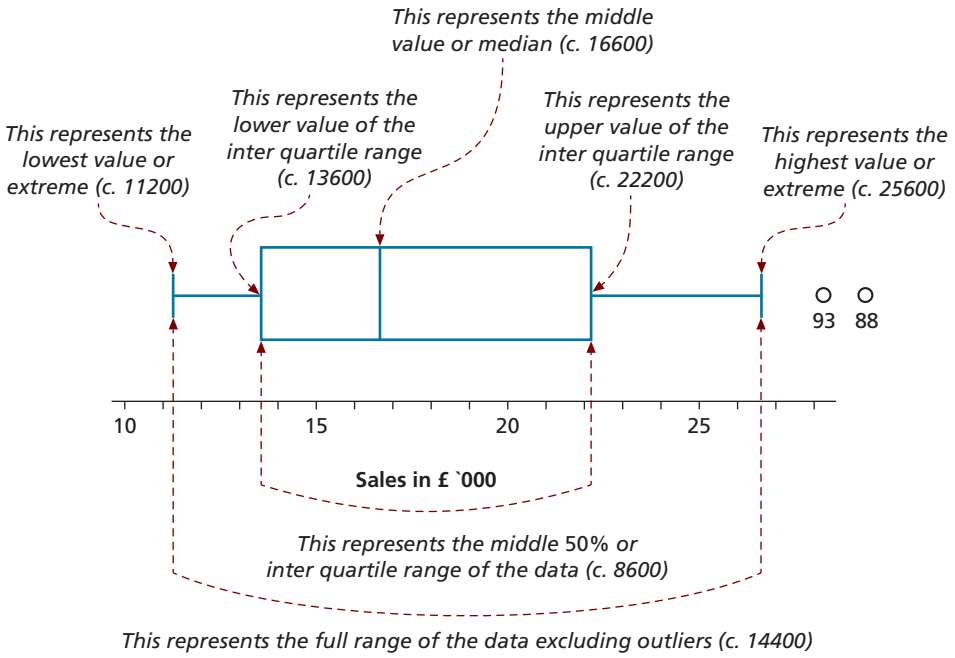


Figure 12.8 Annotated box plot

variable. The plot shows where the middle value or median is, how this relates to the middle 50 per cent of the data or inter-quartile range, and highest and lowest values or *extremes* (Section 12.5). It also highlights outliers, those values that are very different from the data. In Figure 12.8 the two outliers might be due to mistakes in data entry. Alternatively, they may be correct and emphasise that sales for these two cases (93 and 88) are far higher. In this example we can see that the data values for the variable are positively skewed as there is a long tail to the right.

12.7 Exploring and comparing two or more variables

To show interdependence and specific amounts

Contingency tables

As with individual variables, the best method of showing interdependence between variables so that any specific amount can be discerned easily is a table. This is known as a **contingency table** or as a **cross-tabulation** (Table 12.3). For variables where there are likely to be a large number of categories (or values for numerical data), you may need to group the data to prevent the table from becoming too large.

Most statistical analysis software allows you to add totals and row and column percentages when designing your table. Statistical analyses such as chi square can also be undertaken at the same time (Section 12.10).

To compare the highest and lowest values

Multiple bar graphs

Comparisons of variables that emphasise the highest and lowest rather than precise values are best explored using a **multiple bar graph**, also known as a **multiple bar chart** (Kosslyn

Table 12.3 Contingency table: Number of insurance claims by gender, 2022

Number of claims*	Male	Female	Total
0	10032	13478	23510
1	2156	1430	3586
2	120	25	145
3	13	4	17
Total	12321	14937	27258

*No clients had more than three claims
Source: PJ Insurance Services

2006), alternatively known as a **compound bar graph** or **compound bar chart.** As for a bar graph, continuous data – or data where there are many values or categories – need to be grouped. Within any multiple bar graph, you are likely to find it easiest to compare between adjacent bars. The multiple bar graph (Figure 12.9) has been drawn using the data in Table 12.3 to emphasise comparisons between males and females rather than between numbers of claims.

To compare proportions or percentages

Percentage component bar graphs

Comparison of proportions between variables uses either a **percentage component bar graph** (**percentage component bar chart** also known as a divided bar chart) or

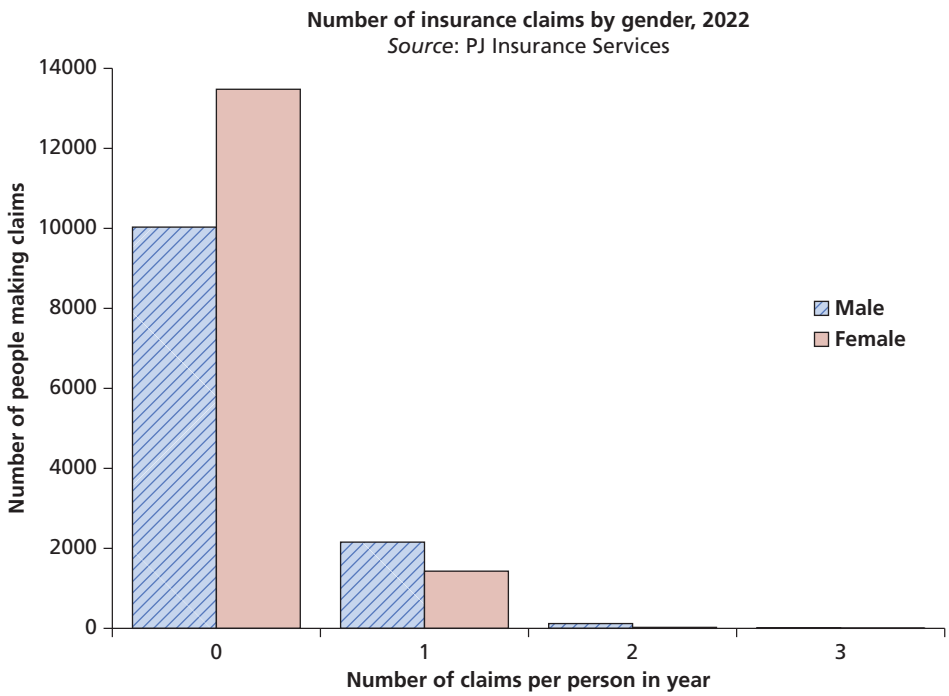


Figure 12.9 Multiple bar graph

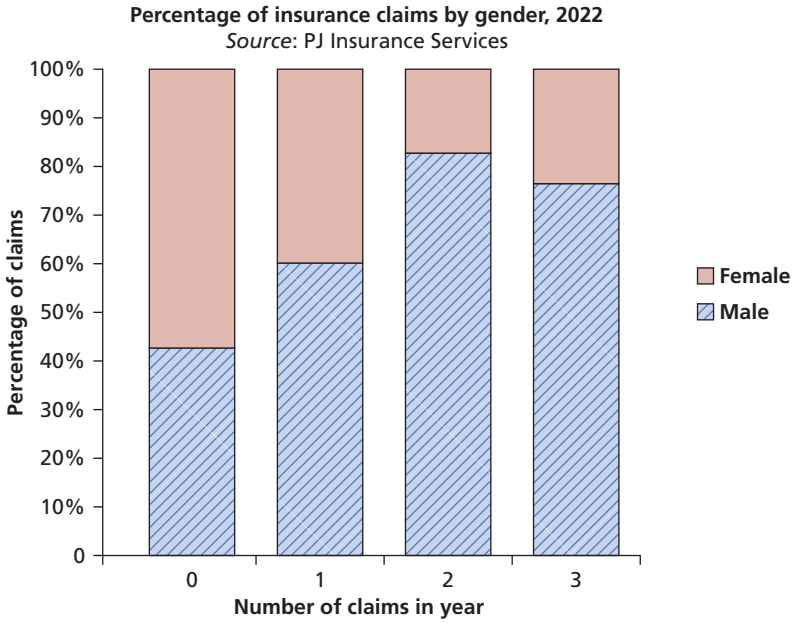


Figure 12.10 Percentage component bar graph

two or more pie charts. Either type of diagram can be used for all data types, provided that continuous data, and data where there are more than six values or categories, are grouped. Although percentage component bar graphs are more straightforward to draw than comparative pie charts when using most spreadsheets, comparative pie charts are often more appealing on infographics. Within your percentage component bar graphs, comparisons will be easiest between adjacent bars. The chart in Figure 12.10 has been drawn using the data in Table 12.3 to emphasise the proportions of males and females for each number of insurance claims in the year. Males and females, therefore, form a single bar.

To compare trends so the intersections are clear

Multiple line graphs

The most suitable diagram to compare trends for two or more numerical (or occasionally ranked) variables is a **multiple line graph** (Box 12.11) where one line represents each variable (Kosslyn 2006). You can also use multiple bar graphs in which bars for the same time period are placed adjacent to each other. Intersections in trends – that is, where values for two or more variables intersect – are shown by the place where the lines on a multiple line graph cross.

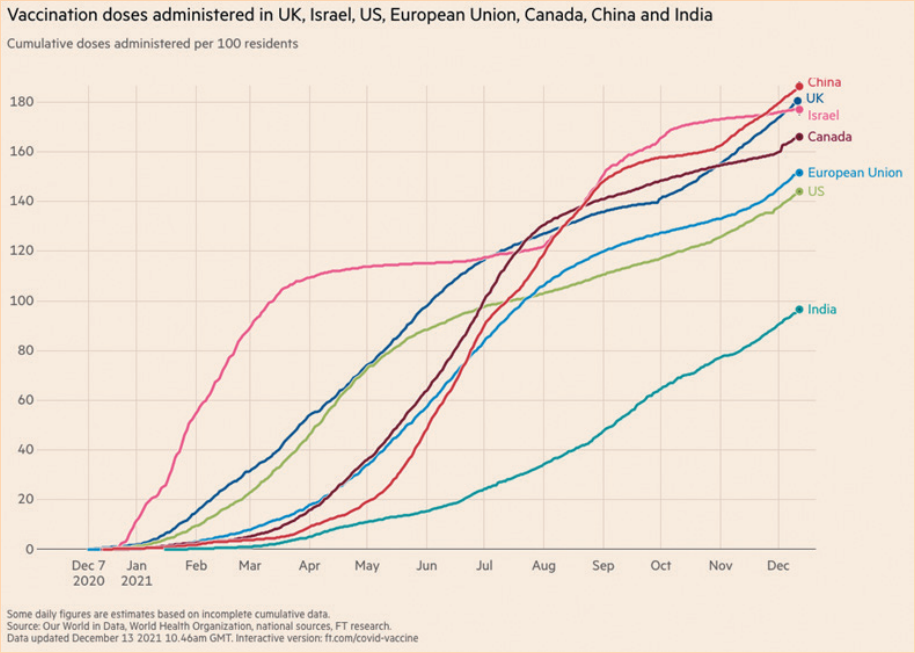
To compare the cumulative totals

Stacked bar graphs

Comparison of cumulative totals between variables uses a variation of the bar chart. A **stacked bar graph**, also known as a **stacked bar chart**, can be used for all data types provided that continuous data and data where there are more than six possible values

Box 12.11 Focus on research in the news

Vaccination doses administered in UK, Israel, US, European Union, Canada, China and India



Vaccine rollouts in advanced economies are largely outpacing those in emerging and developing economies even in countries with similar death rates. Officials at the World Health Organization have warned that the world is on the brink of 'catastrophic moral failure' as poor countries fall behind. Left unchecked, the virus could also mutate into strains that existing vaccines do not protect against.

FT *Source:* Abridged from 'Covid-19 vaccine tracker: the global race to vaccinate', FT Visual & Data Journalism team (2021) *Financial Times,* 13 December. Copyright © The Financial Times Ltd.

or categories are grouped. As with percentage component bar graphs, the design of the stacked bar graph is dictated by the totals you want to compare. For this reason, in Figure 12.11 (using data from Table 12.3) males and females have been stacked to give totals that can be compared for zero, one, two and three claims in a year.

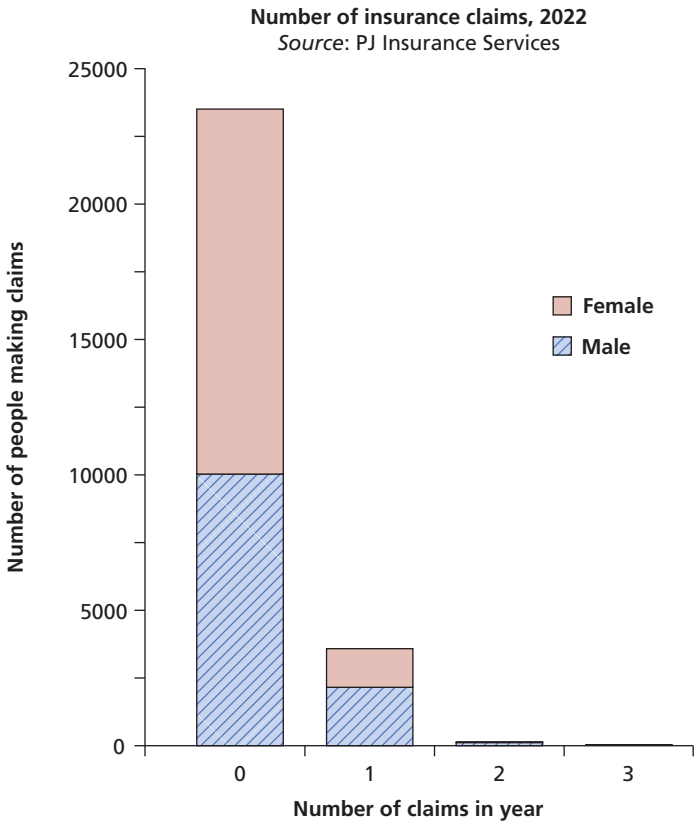


Figure 12.11 Stacked bar graph

To compare the proportions and cumulative totals

Comparative proportional pie charts

To compare both proportions of each category or value and the cumulative totals for two or more variables it is best to use **comparative proportional pie charts** for all data types. For each comparative proportional pie chart, the total area of the pie chart represents the total for that variable. By contrast, the angle of each segment represents the relative proportion of a category within the variable (Box 12.10). Because of the complexity of drawing comparative proportional pie charts, they are rarely used for exploratory data analysis, although they can be used to good effect in infographics and research reports.

To compare the distribution of values

Multiple frequency polygons, bar graphs and box plots

Often it is useful to compare the distribution of values for two or more variables. Plotting multiple frequency polygons (Box 12.11) or bar graphs (Figure 12.9) will enable you to compare distributions for up to three or four variables. After this your diagram is likely just to look a mess! An alternative is to use a diagram of multiple box plots, like the one

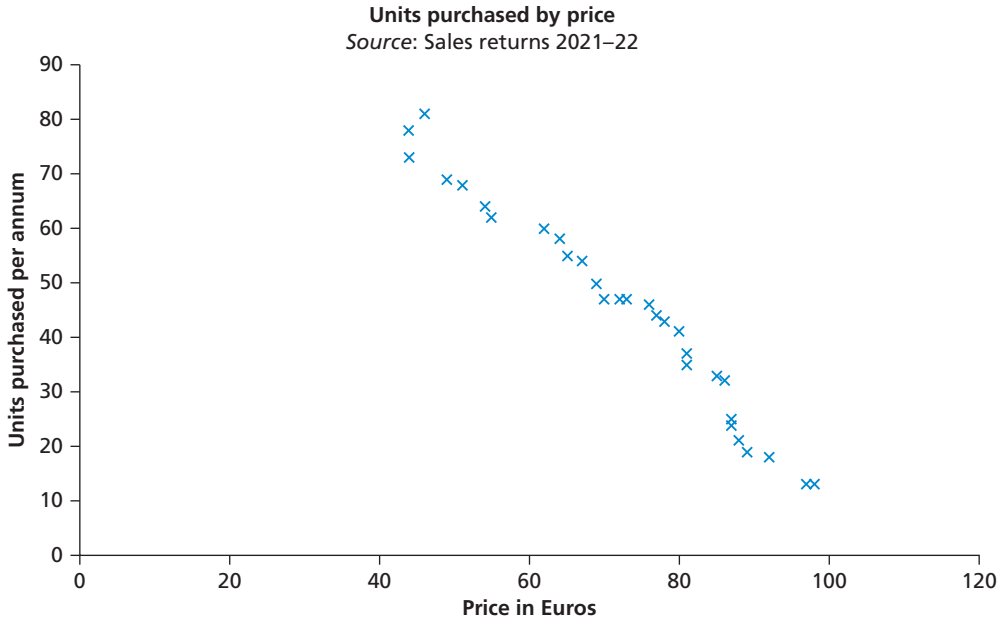


Figure 12.12 Scatter graph

in Figure 12.8. This provides a pictorial representation of the distribution of the data for the variables in which you are interested. These plots can be compared and are interpreted in the same way as the single box plot.

To show the interrelationships between cases for variables

Scatter graphs

You can explore possible interrelationships between ranked and numerical data variables by plotting one variable against another. This is called a **scatter graph** (also known as a **scatter plot**), and each cross (point) represents the values for one case (Figure 12.12). Convention dictates that you plot the **dependent variable** – that is, the variable that changes in response to changes in the other **(independent) variable** – against the vertical axis. The strength of the interdependence or relationship is indicated by the closeness of the points to an imaginary straight line. If as the values for one variable increase, so do those for the other then you have a positive relationship. If as the values for one variable decrease those for the other variable increase, then you have a negative relationship. Thus, in Figure 12.12 there is a negative relationship between the two variables. The strength of this relationship can be assessed statistically using techniques such as correlation or regression (Section 12.11).

12.8 Describing data using statistics

The exploratory data analysis approach (Section 12.5) emphasised the use of diagrams to understand your data. **Descriptive statistics** enable you to describe (and compare) a variable's data values numerically. Your research question(s) and objectives, although limited

by the type of data (Table 12.4), should guide your choice of statistics. Statistics to describe a variable focus on two aspects of the data values' distribution:

- the central tendency;
- the dispersion.

Table 12.4 Descriptive statistics by data type: a summary

To calculate a measure of:		Categorical		Numerical	
		Nominal (Descriptive)	**Ordinal (Ranked)**	**Continuous**	**Discrete**
Central tendency that . . .	. . . represents the value that occurs *most frequently*	Mode			
	. . . represents the *middle* value			Median	
	. . . includes *all* data values (average)			Mean	
	. . . includes all data values *other than those at the extremes* of the distribution			Trimmed mean	
Dispersion that . . .	. . . states the difference between the *highest and lowest* values			Range (data need not be normally distributed but must be placed in rank order)	
	. . . states the difference within the *middle 50%* of values			Inter-quartile range (data need not be normally distributed but must be placed in rank order)	
	. . . states the difference within *another fraction* of the values			Deciles or percentiles (data need not be normally distributed but must be placed in rank order)	
	. . . describes the extent to which data values *differ from the mean*			Variance, or more usually, the standard deviation (data should be normally distributed)	
	. . . compares the extent to which data values *differ from the mean* between variables			Coefficient of variation (data should be normally distributed)	
	. . . allows the *relative extent* that data values differ to be compared			Index numbers	

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2022

When describing data for both samples and populations quantitatively it is usual to provide some general impression of values that could be seen as common, middling or average. These are termed measures of **central tendency** and are discussed in virtually all statistics textbooks. The three main ways of measuring the central tendency most used in business research are the:

- value that occurs most frequently (mode);
- middle value or mid-point after the data have been ranked (median);
- value, often known as the average, that includes all data values in its calculation (mean).

However, as we saw in Box 12.1, beware: if you have used numerical codes, most analysis software can calculate all three measures whether or not they are appropriate!

As well as describing the central tendency for a variable, it is important to describe how the data values are dispersed around the central tendency. As you can see from Table 12.4, this is only possible for numerical data. Two of the most frequently used ways of describing the dispersion are the:

- difference within the middle 50 per cent of values (inter-quartile range);
- extent to which values differ from the mean (standard deviation).

Although these **dispersion measures** are suitable only for numerical data, most statistical analysis software will also calculate them for categorical data if you have used numerical codes.

These measures of central tendency and dispersion are summarised in Table 12.4. Those most pertinent to your research question(s) and objectives will eventually be quoted in your project report as support for your arguments.

To describe the central tendency using the value that occurs most frequently

Modes

The **mode** is the value that occurs most frequently. For descriptive data, the mode is the only measure of central tendency that can be interpreted sensibly. You might read in a report that the most common (modal) colour of motor vehicles sold last year was silver, or that the two equally most popular makes of motorcycle in response to a questionnaire were Honda and Yamaha. In such cases where two categories occur equally most frequently, this is termed bimodal. The mode can be calculated for variables where there are likely to be a large number of categories (or values for numerical data), although it may be less useful. One solution is to group the data into suitable categories and to quote the most frequently occurring or **modal group**.

To describe the central tendency using the middle value

Medians

If you have quantitative data, it is also possible to calculate the middle or **median** value by ranking all the values in ascending order and finding the mid-point (or **50th percentile**) in the distribution. For variables that have an even number of data values, the median will occur halfway between the two middle data values. The median has the advantage that it is not affected by extreme values in the distribution (Box 12.12).

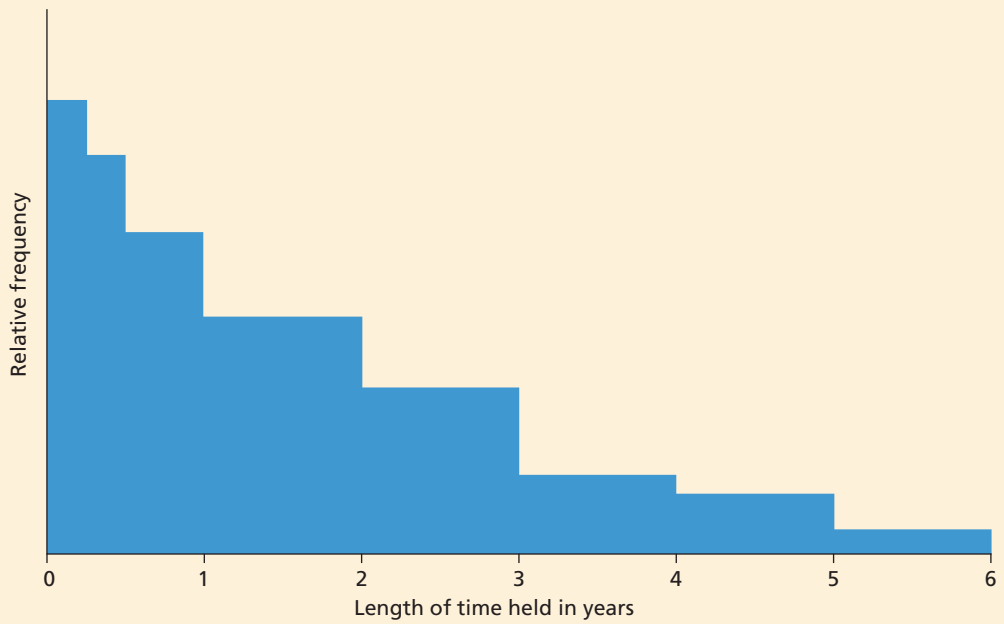
Box 12.12 Focus on student research

Describing the central tendency

As part of her research project, Kylie had obtained secondary data from the service department of her organisation on the length of time for which their customers had held service contracts.

Length of time held contract	Number of customers
< 3 months	50
3 to < 6 months	44
6 months to < 1 year	71
1 to < 2 years	105
2 to < 3 years	74
3 to < 4 years	35
4 to < 5 years	27
5+ years	11

As part of her exploratory analysis, she drew a histogram. This revealed a positively skewed distribution (long tail to the right).



From the table, the largest single group of customers were those who had contracts for 1 to less than 2 years. This was the modal time period (most commonly occurring). However, the usefulness of this statistic is limited owing to the variety of class widths. By definition, half of the organisation's customers will have held contracts below the median time period (approximately 1 year 5 months) and half above it. As there are 11 customers who have held service contracts for over 5 years, the mean time period (approximately 1 year 9 months) is pulled towards longer times. This is represented by the skewed shape of the distribution.

Kylie needed to decide which of these measures of central tendency to include in her research report. As the mode made little sense, she quoted the median and mean when interpreting her data:

> *The length of time for which customers have held service contracts is positively skewed. Although the mean length of time is approximately 1 year 9 months, half of customers have held service contracts for less than 1 year 5 months (median). Grouping of these data means that it is not possible to calculate a meaningful mode.*

To describe the central tendency by including all data values

Means

The most frequently used measure of central tendency is the **mean** (average in everyday language), which includes all data values in its calculation. However, it is usually only possible to calculate a meaningful mean using numerical data.

The value of your mean is unduly influenced by extreme data values in skewed distributions (Section 12.6, Box 12.13). In such distributions the mean tends to get drawn towards the long tail of extreme data values and may be less representative of the central tendency. For this and other reasons Anderson et al. (2020) suggest that the median may be a more useful descriptive statistic. Alternatively, where the mean is affected by extreme data values (outliers) these may be excluded and a **trimmed mean** calculated. This excludes a certain proportion (for example, 5 per cent) of the data from both ends of the distribution, where the outliers are located. Because the mean is the building block for many of the statistical tests used to explore relationships (Section 12.9), it is usual to include it as at least one of the measures of central tendency for numerical data in your report.



Box 12.13 Focus on management research

Accounting for modern slavery

In a recent paper in the *Accounting, Auditing and Accountability Journal,* Christ et al. (2019) analyse the 100 top Australian companies' voluntary practices in supply chains disclosures about modern slavery. Looking at these companies' annual and standalone reports and websites they reveal that the volume of disclosures overall is low and, with 37 of the 100 companies having disclosed a modern slavery statement. A wide range of themes of modern slavery were disclosed with themes of bribery and corruption and human rights issues the most dominant.

Within their analysis of supply chain themes disclosed Christ and colleagues provide details of the overall mean and maximum number of sentences relating to supply chain disclosures and a breakdown for a range of different supply chain modern slavery themes. Overall disclosures range from a total sample mean number of 2.62 sentences in annual reports to a total sample mean number of 69.04 sentences on companies' websites, standalone reports having a total sample mean of 7.38 sentences.

Within annual reports, the theme with the highest mean number of sentences was 'code of conduct' (mean = 0.76 sentences) and 'modern slavery in general (mean = 0.44 sentences), whereas for websites it was 'bribery and corruption' (mean = 17.73 sentences), modern slavery in general (mean = 12.08 sentences) and 'human rights' (mean = 7.32 sentences). All themes were reported at greater length in websites than in annual reports. The maximum number of sentences on a single website (179) related to 'bribery and corruption' whereas the maximum number of sentences in an annual report related to 'code of conduct' (17) or 'modern slavery in general' (17).

Based on their analysis, Christ and colleagues conclude that, although there appear to be habitual processes encouraging disclosure about modern slavery, legislation is required to encourage further engagement.

To describe the dispersion by stating the difference between values

Range and quartiles

To get a quick impression of the distribution of data values for a variable you could simply calculate the difference between the lowest and the highest values once they have been ranked in ascending order – that is, the **range**. However, this statistic is rarely used in research reports as it represents only the extreme values.

A more frequently used statistic is the **inter-quartile range**. As we discussed earlier, the median divides the range into two. The range can be further divided into four equal sections called **quartiles**. The **lower quartile** is the value below which a quarter of your data values will fall; the **upper quartile** is the value above which a quarter of your data values will fall. As you would expect, the remaining half of your data values will fall between the lower and upper quartiles. The difference between the upper and lower quartiles is the inter-quartile range (Anderson et al. 2020). As a consequence, it is concerned only with the middle 50 per cent of data values and ignores extreme values.

Percentiles and deciles

You can also calculate the range for other fractions of a variable's distribution. One alternative is to divide your distribution using **percentiles**. These split your ranked distribution into 100 equal parts. Obviously, the lower quartile is the 25th percentile and the upper quartile the 75th percentile. However, you could calculate a range between the 10th and 90th percentiles so as to include 80 per cent of your data values. Another alternative is to divide the range into 10 equal parts called **deciles**.

To describe the dispersion by comparing the extent by which values differ from the mean

Standard deviation

Conceptually and statistically in research it is important to look at the extent to which the data values for a variable are spread around their mean, as this is what you need to know to assess its usefulness as a typical value for the distribution. If your data values are all close to the mean, then the mean is more typical than if they vary widely. To describe the extent of spread of numerical data you use the **standard deviation**. If your data are a sample (Section 7.1), this is calculated using a slightly different formula than if your data are a population, although if your sample is larger than about 30 cases there is little difference in the two statistics.

Coefficient of variation

You may need to compare the relative spread of data between distributions of different magnitudes (e.g. one may be measured in hundreds of tonnes, the other in billions of tonnes). To make a meaningful comparison you will need to take account of these different magnitudes. A common way of doing this is:

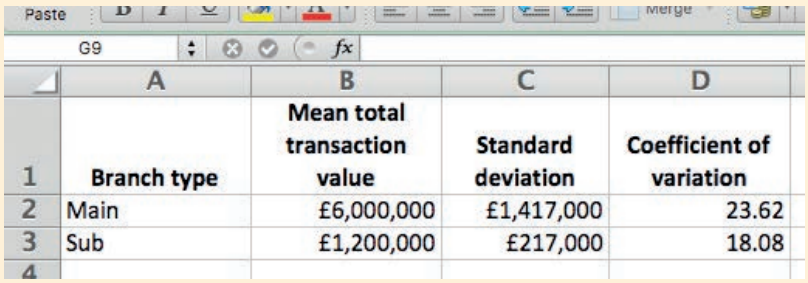
1. to divide the standard deviation by the mean;
2. then to multiply your answer by 100.

This results in a statistic called the **coefficient of variation** (Black 2020). The values of this statistic can then be compared. The distribution with the largest coefficient of variation has the largest relative spread of data (Box 12.14).

Box 12.14 Focus on student research

Describing variables and comparing their dispersion

Cathy was interested in the total value of transactions at the main and sub-branches of a major bank. The mean value of total transactions at the main branches was approximately five times as high as that for the sub-branches. This made it difficult to compare the relative spread in total value of transactions between the two types of branches. By calculating the coefficients of variation, Cathy found that there was relatively more variation in the total value of transactions at the main branches than at the sub-branches. This is because the coefficient of variation for the main branches was larger (23.62) than the coefficient for the sub-branches (18.08).



	A	B	C	D
1	Branch type	Mean total transaction value	Standard deviation	Coefficient of variation
2	Main	£6,000,000	£1,417,000	23.62
3	Sub	£1,200,000	£217,000	18.08
4				

Index numbers

Alternatively, as discussed at the start of the chapter in relation to the Economist's rEV Index, you may wish to compare the relative extent to which values differ. One way of doing this is to use **index numbers** and consider the relative differences rather than actual data values. Such indices compare each data value against a base data value that is normally given the value of 100, differences being calculated relative to this value. An index number greater than 100 represents a larger or higher data value relative to the base value and an index less than 100, a smaller or lower data value.

To calculate an index number for each case for a data variable you use the following formula:

$$\text{Index number for case} = \frac{\text{data value for case}}{\text{base data value}} \times 100$$

We discuss index numbers further when we consider examining trends (Section 12.13).

12.9 Statistical tests' assumptions and hypothesis testing

When examining associations, differences, relationships, predictions and trends using statistics, it is important to ensure that each data variable meets the assumptions of the specific statistic you intend use. These assumptions can include:

- suitability of statistical test for the data type(s);
- whether the data variable is normally distributed;
- sample size required.

Providing these assumptions are met, you should usually be able to assess the significance of your findings using hypothesis testing. As you do this, it will be important to consider the:

- types of hypotheses;
- statistical and practical significance of your findings;
- need to minimise errors when making inferences, in particular by wrongly rejecting a null hypothesis and saying something is true when it is not (a Type I error).

Statistical tests' assumptions

Suitability of the statistical test for the data type

The suitability of the two main groups of statistical tests, non-parametric and parametric, depends upon data type. **Non-parametric statistics** are designed primarily for use with categorical (dichotomous, nominal and ordinal) data where there is no distributional model and so we cannot use statistics to estimate parameters. In contrast, **parametric statistics** are used with numerical (interval and ratio) data. Although parametric statistics are considered more powerful because they use numerical data, a number of assumptions about the actual data being used need to be satisfied if they are not to produce spurious results (Blumberg et al. 2014). These include the:

- data cases selected for the sample should be independent – in other words the selection of any one case for your sample should not affect the probability of any other case being included in the same sample;
- data cases should be drawn from normally distributed populations (Section 12.6 and later in this section);
- populations from which the data cases are drawn should have equal variances (Sections 12.6 and 12.10);
- data used should be numerical.

The normal distribution

As we have already noted, parametric tests assume that the numerical data cases in your sample are drawn from normally distributed populations. This means that the data values for each quantitative variable should also be normally distributed, being clustered around the variable's mean in a symmetrical pattern forming a bell-shaped frequency distribution (Figure 12.13). Fortunately, it is relatively easy to check if data values for a particular variable are distributed normally, both using graphs and statistically.

In Section 12.6 we looked at a number of different types of graphs including histograms (Figure 12.5), box plots (Figure 12.8) and frequency polygons (Figure 12.7). All of these can be used to assess visually whether the data values for a particular numerical variable are clustered around the mean in a symmetrical pattern, and so normally distributed. For normally distributed data, the value of the mean, median and mode are also likely to be the same.

Another way of testing for normality is to use statistics to establish whether the distribution as a whole for a variable differs significantly from a comparable normal distribution. Fortunately, this is relatively easy to do in statistical software such as IBM SPSS Statistics using the **Kolmogorov–Smirnov test** and the **Shapiro–Wilk test** (Box 12.15), as the software also calculates a comparable normal distribution automatically. For both these tests the calculation consists of the test statistic (labelled *D* and *W* respectively), the degrees of

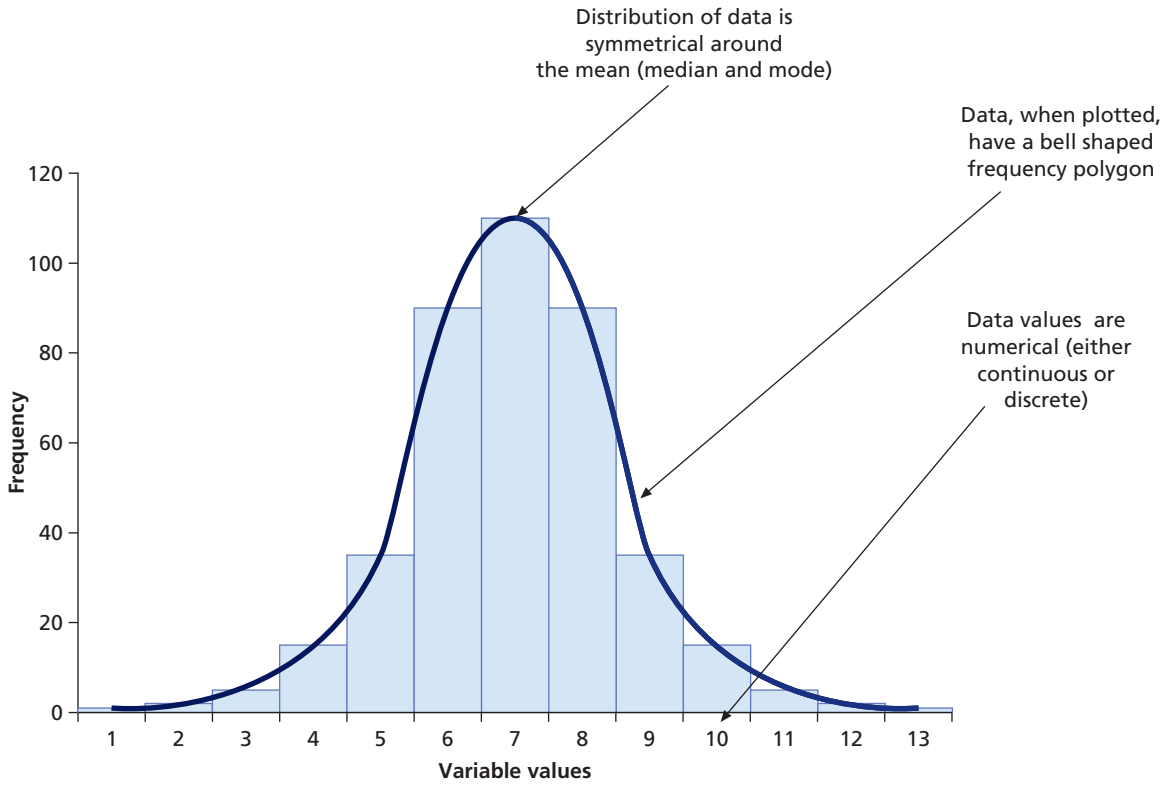


Figure 12.13 Annotated frequency polygon showing the normal distribution

freedom[1] (*df*) and, based on this, the probability (*p*-value). The *p*-value is the probability of the data for your variable, or data more extreme, occurring by chance alone from a comparable normal distribution for that variable if there really was no difference. For either statistic, a probability of 0.05 means there is a 5 per cent likelihood of the actual data distribution or one more extreme occurring by chance alone from a comparable normal distribution if there was no real difference. Therefore, a probability of 0.05 or lower[2] for either statistic means that these data are unlikely to be normally distributed. When interpreting probabilities from software packages, beware: owing to statistical rounding of numbers a probability of 0.000 does not mean zero but that it is less than 0.001 (Box 12.15). If the probability is greater than 0.05, then this is interpreted as the data being likely to be normally distributed. However, with very large samples it is easy to obtain statistically significant differences between a sample variable and a comparable normal distribution when actual differences are quite small. For this reason, it is often helpful to also use a graph to make an informed decision.

[1]Degrees of freedom are the number of values free to vary when computing a statistic. The number of degrees of freedom for a contingency table of at least two rows and two columns of data is calculated from: (number of rows in the table−1) × (number of columns in the table−1).

[2]A probability of 0.05 means that the probability of your test result or one more extreme occurring by chance alone, if there really was no difference, is 5 in 100, that is 1 in 20.

Sample size

In addition, as we will discuss later, you need to ensure that your sample size is sufficiently large to meet the requirements of the statistic you are using (see also Section 7.2). If the assumptions are not satisfied, it is often still possible to use non-parametric statistics.

Hypothesis testing and statistical significance

Assessing the statistical significance of relationships and differences between variables usually involves testing a hypothesis. A **hypothesis** is a tentative, usually testable, explanation that there is an association, difference or relationship between two or more variables.

Types of hypotheses

As part of your research project, you might collect sample data to examine the association between two variables. You will phrase this as a testable explanation that puts forward the absence of that relationship (termed a **null hypothesis**) such as: 'there is no association between . . . ' Once you have entered data into the analysis software, chosen the statistic and clicked on the appropriate icon, an answer will appear. With most statistical analysis software this consists of a test statistic, the degrees of freedom (*df*) and, based on these, the statistical significance (*p*-value). This is the probability that the value of the test statistic summarising a specific aspect of your data would be equal to or more extreme than its actual observed value, given the specified assumptions of that test (Wasserstein and Lazar 2016).

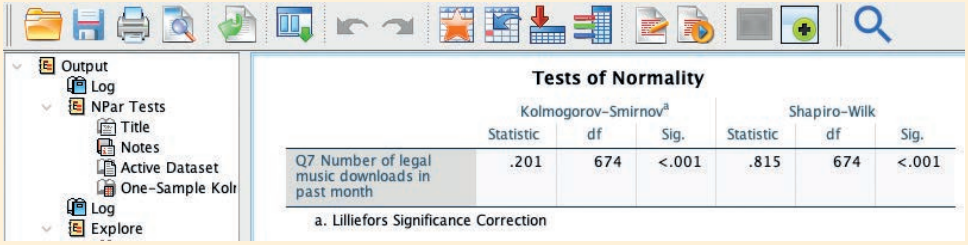
If the probability of your test statistic value or one more extreme having occurred is less than a prescribed significance value (usually $p < 0.05$ or lower[3]), this is usually interpreted as casting doubt on or providing evidence against your null hypothesis and the associated underlying assumptions. This means your data are more likely to support the explanation expressed in your hypothesis; in this example a testable statement such as: 'There is an association between . . . ' Statisticians refer to this as rejecting the null hypothesis and accepting the hypothesis, often abbreviating the terms null hypothesis to H_0 and hypothesis to H_1. Consequently, rejecting a null hypothesis could mean casting doubt on an explanation such as 'there is no difference between . . . ' or 'there is no relationship between . . . ' and accepting an explanation such as 'there is a difference between . . . ' or 'there is a relationship between . . . ' However, conclusions and policy decisions should not be based just on whether the *p*-value passes a specific threshold. Contextual factors such as the research design, quality of data and other external evidence are also important in interpreting the findings (Wasserstein and Lazar 2016). If the probability of obtaining the test statistic or one more extreme by chance alone is greater than or equal to a prescribed value (usually $p = 0.05$), this is normally interpreted as your data being compatible with the explanation expressed by your null hypothesis and its associated underlying assumptions. This indicates the null hypothesis can be accepted and is referred to by statisticians as failing to reject the null hypothesis. There may still be a relationship between the variables under such circumstances, but you cannot make the conclusion with any certainty. Remember, when interpreting probabilities from software packages, beware: owing to statistical rounding of numbers a probability of 0.000 does not mean zero, but that it is less than 0.001 (Box 12.15).

[3]A probability of 0.05 means that the probability of your test result or one more extreme occurring by chance alone, if there really was no difference in the population from which the sample was drawn (in other words if the null hypothesis was true), is 5 in 100, that is 1 in 20.

Box 12.15 Focus on student research

Testing for normality

As part of his research project, Osama had collected quantitative data about music piracy and illegal downloading of music from student respondents. Before undertaking his statistical analysis, Osama decided to test his quantitative variables for normality using the Kolmogorov–Smirnov test and the Shapiro–Wilk test. The output from IBM SPSS Statistics for one of his data variables, 'number of legal music downloads made in the past month', follows:

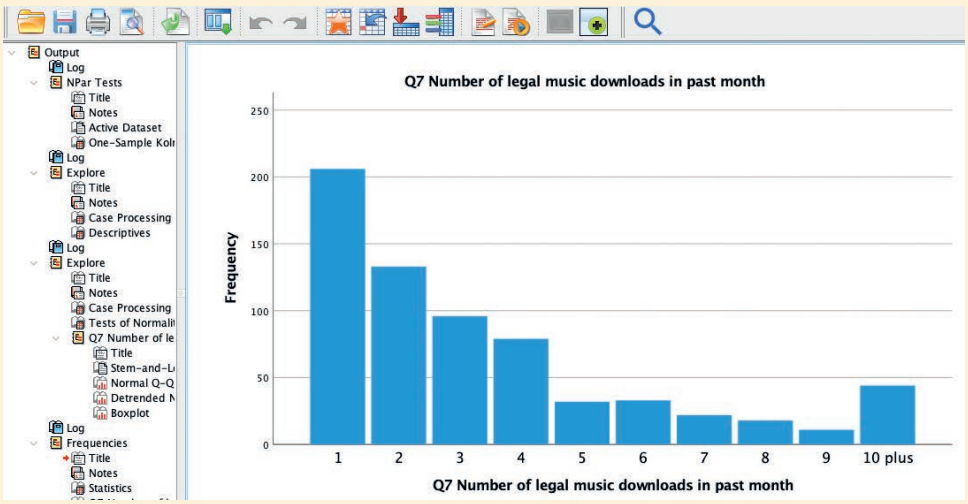


Tests of Normality

	Kolmogorov–Smirnov[a]			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Q7 Number of legal music downloads in past month	.201	674	<.001	.815	674	<.001

a. Lilliefors Significance Correction

This calculated the significance (Sig.) for both the Kolmogorov–Smirnov test and the Shapiro–Wilk test as '000', meaning that for this variable the likelihood of the actual distribution or one more extreme differing from a normal distribution occurring by chance alone was less than 0.001. Consequently, the data values for variable 'Number of legal music downloads in past month' were not normally distributed, reducing his choice of statistics for subsequent analyses. This was confirmed by a bar chart showing the distribution of the data for the variable:



Osama reported the outcome of this analysis in his project report, quoting the test statistics '*D*' and '*W*' and their associated degrees of freedom '*df*' and probabilities '*p*' in brackets:

Tests for normality revealed that data for the variable 'number of legal music downloads in the past month' cast considerable doubt on the data being normally distributed [$D = 0.201$, $df = 674$, $p < 0.001$; $W = 0.815$, $df = 674$, $p < 0.001$].'

The hypothesis and null hypothesis we have just stated are often termed **non-directional**. This is because they refer to a difference rather than also including the nature of the difference. A **directional hypothesis** includes within the testable statement the direction of the difference, for example 'larger'. This is important when interpreting the probability of obtaining the test result, or one more extreme, by chance. Statistical software (Box 12.19) often states whether this probability is one-tailed or two-tailed. Where you have a directional hypothesis such as when the direction of the difference is larger, you should use the one-tailed probability. Where you have a non-directional hypothesis and are only interested in the difference, you should use the two-tailed probability.

While considering hypothesis testing, it is worth mentioning that some quantitative analyses, when written up, do not specify actual hypotheses. Rather, the theoretical underpinnings of the research and the research questions provide the context within which the probability of relationships between variables occurring by chance alone is tested. Thus, although hypothesis testing has taken place, statistical significance is often only discussed in terms of the probability (*p*-value) of the test statistic value or one more extreme occurring by chance.

Statistical and practical significance

The probability of a test statistic value or one more extreme occurring by chance is determined in part by your sample size (Section 7.5). One consequence of this is that it is very difficult to obtain a low *p*-value for a test statistic with a small sample. Conversely, by increasing your sample size, less obvious relationships and differences will be found to be statistically significant until, with extremely large samples, almost any relationship or difference will be significant (Anderson 2003). This is inevitable as your sample is becoming closer in size to the population from which it was selected. You therefore need to remember that small populations can make statistical tests insensitive, while very large samples can make statistical tests overly sensitive. There are two consequences to this:

- if you expect a difference, relationship or association will be small, you need to have a larger sample size;
- if you have a large sample and the difference, relationship or association has statistical significance, you need also to assess the practical significance of this relationship.

Both these points are crucial as it is not unusual for a test statistic to be statistically significant but trivial in the real world. Fortunately, it is relatively straightforward to assess the practical significance of something that is statistically significant by calculating an appropriate **effect size index**. These indices measure the size of either differences between groups (the *d* family of statistical tests) or association between groups (the *r* family of statistical tests) and an excellent discussion can be found in Ellis (2010).

Minimising errors when making inferences

Inevitably, errors can occur when making inferences from samples. Statisticians refer to these as Type I and Type II errors. Blumberg et al. (2014) use the analogy of legal decisions to explain Type I and Type II errors. In their analogy they equate a Type I error to a person who is innocent being unjustly convicted and a Type II error to a person who is guilty of a crime being unjustly acquitted. In business and management research we would say that an error made by wrongly rejecting a null hypothesis and therefore accepting the hypothesis is a **Type I error**. Type I errors might involve you concluding that two variables are related when they are not, or incorrectly concluding that a sample statistic exceeds the value that would be expected by chance alone. This means you are rejecting your null hypothesis when you should not. The term **'statistical significance'** discussed earlier

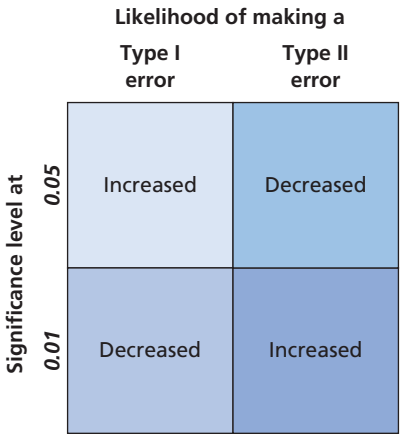


Figure 12.14 Type I and Type II errors

therefore refers to the probability of making a Type I error. A **Type II error** involves the opposite occurring. In other words, you fail to reject your null hypothesis when it should be rejected. This means that Type II errors might involve you in concluding that two variables are not related when they are, or that a sample statistic does not exceed the value that would be expected by chance alone.

Given that a Type II error is the inverse of a Type I error, it follows that if we reduce our likelihood of making a Type I error by setting the significance level to 0.01 rather than 0.05, we increase our likelihood of making a Type II error by a corresponding amount. This is not an insurmountable problem, as researchers usually consider Type I errors more serious and prefer to take a small likelihood of saying something is true when it is not (Figure 12.14). It is therefore generally more important to minimise Type I than Type II errors.

Assessing statistical significance

In examining associations, differences, relationships, predictions and trends you are likely to ask questions such as: 'Do these groups differ?', 'Are these variables related?', or 'Can I predict this variable from another?' or 'What is the trend?'. Through statistical analysis you will establish the probability of the test statistic summarising what you have found in your data, or a finding more extreme, occurring. This process of assessing the statistical significance of findings from a sample is known as **significance testing**, the classical approach to significance testing being **hypothesis testing**. Significance testing can therefore be thought of as assessing the possibility that your result could be due to random variation in your sample.

The way in which statistical significance is assessed using both non-parametric and parametric statistics can be thought of as answering one from a series of questions, dependent on the data type:

- Is the independence or association statistically significant?
- Are the differences statistically significant?
- What is the strength of the relationship and is it statistically significant?
- Are the predicted values statistically significant?

When assessing significance each question will usually be phrased as a hypothesis about the association, difference, relationship, or prediction regarding two or more variables. The questions and associated statistics are summarised in Table 12.5 along with statistics used to help examine trends.

Table 12.5 Statistics to examine associations, differences, relationships, predictions and trends by data type: A summary

	Categorical		Numerical	
	Nominal (Descriptive)	**Ordinal (Ranked)**	**Continuous**	**Discrete**
To test *normality* of a distribution			Kolmogorov–Smirnov test, Shapiro–Wilk test	
To test whether two variables are *independent*	Chi square (data may need grouping)		Chi square if variable grouped into discrete classes	
To test whether two variables are *associated*	Cramer's V and Phi (both variables must be dichotomous)			
To test whether two groups (categories) are *different*		Kolmogorov–Smirnov (data may need grouping) or Mann–Whitney *U* test	Independent *t*-test or paired *t*-test (often used to test for changes over time) or Mann–Whitney *U* test (where data skewed or a small sample)	
To test whether three or more groups (categories) are *different*			Analysis of variance (ANOVA)	
To assess the *strength of relationship* between two variables		Spearman's rank correlation coefficient (Spearman's rho) or Kendall's rank order correlation coefficient (Kendall's tau)	Pearson's product moment correlation coefficient (PMCC)	
To assess the *strength of a relationship* between one dependent and one independent variable			Coefficient of determination	
To assess the *strength of a relationship* between one dependent and two or more independent variables			Coefficient of multiple determination	
To *predict* the value of a dependent variable from one or more independent variables			Regression equation	
To *establish the trend* (explore relative change) over time			Index numbers	
To *compare trends* (relative changes) over time			Index numbers	
To *determine the trend* over time of a series of data			Time series: moving averages or regression equation (regression analysis)	

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2022

12.10 Examining associations and differences

To test whether two variables are independent or associated (using categorical data)

Chi square test

Often descriptive or numerical data will be summarised as categorical data using a two-way contingency table (such as Table 12.3). The **chi square test** (X^2) enables you to find out how likely it is that the two variables are independent. It is based on a comparison of the observed values in the table with what might be expected if the two distributions were entirely independent. Therefore, you are assessing the likelihood of the data in your table, or data more extreme, occurring by chance alone by comparing it with what you would expect if the two variables were independent of each other. This could be phrased as the null hypothesis: 'there is no dependence . . . '.

The test relies on:

- the categories used in the contingency table being mutually exclusive, so that each observation falls into only one category or class interval;
- no more than 25 per cent of the cells in the table having expected values of less than 5. For contingency tables of two rows and two columns, no expected values of less than 10 are preferable (Dancey and Reidy 2020).

If the latter assumption is not met, the accepted solution is to combine rows and columns where this produces meaningful data.

Most statistical analysis software calculates the chi square statistic, degrees of freedom[4] and the *p*-value automatically. However, if you are using a spreadsheet, you will usually need to look up the probability in a 'critical values of chi square' table using your calculated chi square value and the degrees of freedom. There are numerous copies of this table online. A probability of 0.05 means that there is only a 5 per cent likelihood of the data in your table or data more extreme occurring by chance alone and is usually considered statistically significant. Therefore, a probability of 0.05 or smaller means you can be at least 95 per cent certain that the dependence between your two variables represented by the data in the table could not have occurred by chance alone.

Cramer's V

Some software packages, such as IBM SPSS Statistics, calculate the statistic **Cramer's V** alongside the chi square statistic (Box 12.16). If you include the value of Cramer's V in your research report, it is usual to do so in addition to the chi square statistic. Whereas the chi square statistic gives the probability of data in a table, or data more extreme, occurring by chance alone, Cramer's V measures the association between the two variables within the table on a scale where 0 represents no association and 1 represents perfect association. Because the value of Cramer's V is always between 0 and 1, the relative strengths of associations between different pairs of variables that are considered statistically significant can be compared.

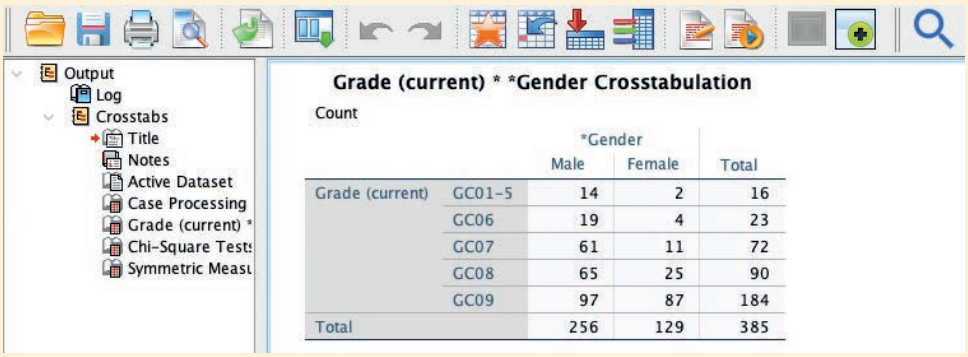
[4] Degrees of freedom are the number of values free to vary when computing a statistic. The number of degrees of freedom for a contingency table of at least two rows and two columns of data is calculated from (number of rows in the table−1) × (number of columns in the table−1).

Box 12.16 Focus on student research

Testing whether two variables are independent or associated

As part of his research project, John wanted to find out whether there was a significant dependence between salary grade of respondent and gender. Earlier analysis using IBM SPSS Statistics had indicated that there were 385 respondents in his sample with no missing data for either variable. However, it had also highlighted there were only 14 respondents in the five highest salary grades (GC01 to GC05).

Bearing in mind the assumptions of the chi square test, John decided to combine salary grades GC01 through GC05 to create a combined grade GC01–5 using IBM SPSS Statistics:

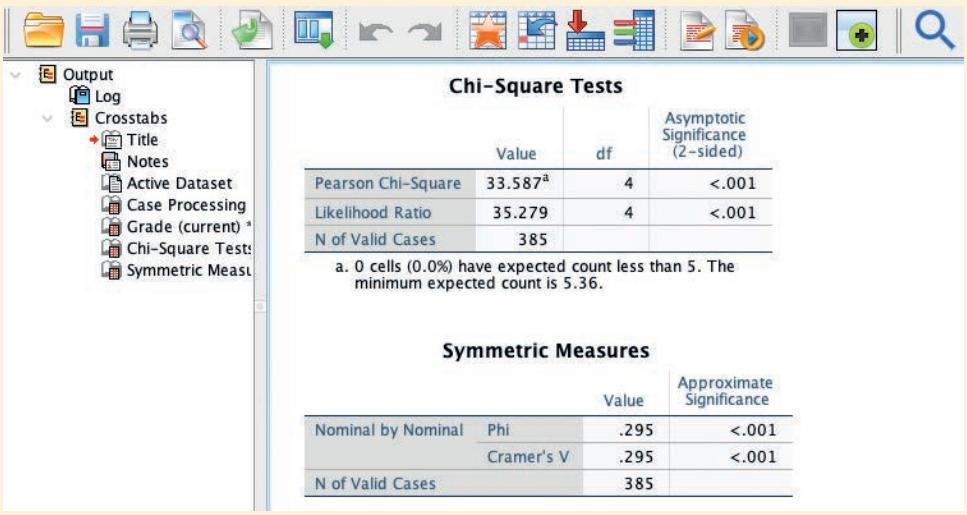


Grade (current) * *Gender Crosstabulation

Count

		*Gender		
		Male	Female	Total
Grade (current)	GC01–5	14	2	16
	GC06	19	4	23
	GC07	61	11	72
	GC08	65	25	90
	GC09	97	87	184
Total		256	129	385

He then used his analysis software to undertake a chi square test and calculate Cramer's V.



Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	33.587[a]	4	<.001
Likelihood Ratio	35.279	4	<.001
N of Valid Cases	385		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.36.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.295	<.001
	Cramer's V	.295	<.001
N of Valid Cases		385	

As can be seen, this resulted in an overall chi square value of 33.59 with 4 degrees of freedom (*df*).

The significance of .000 (Asymp. Sig. – two sided) meant that the probability of the values in his table or values more extreme occurring by chance alone was less than 0.001. He therefore concluded that the gender and grade were extremely unlikely to be independent and quoted the statistic in his project report:

$$[x^2 = 33.59, df = 4, p < 0.001]^*$$

The Cramer's V value of .295, significant at the 0.001 level (Approx. Sig.), showed that the association

between gender and salary grade, although weak, could be considered significant. This indicated that men (coded 1 whereas females were coded 2) were more likely to be employed at higher salary grades GC01–5 (coded using lower numbers). John also quoted this statistic in his project report:

$$[V_c = 0.295, p < 0.001]$$

To explore this association further, John examined the cell values in relation to the row and column totals. Of males, 5 per cent were in higher salary grades (GC01–5) compared to less than 2 per cent of females. In contrast, only 38 per cent of males were in the lowest salary grade (GC09) compared with 67 per cent of females.

*You will have noticed that the computer printout in this box does not have a zero before the decimal point. This is because most software packages follow the North American convention of not placing a zero before the decimal point.

Phi

An alternative statistic used to measure the association between two variables is **Phi**. This statistic measures the association on a scale between −1 (perfect negative association), through 0 (no association) to 1 (perfect association). However, unlike Cramer's V, using Phi to compare the relative strengths of associations between pairs of variables considered statistically significant can be problematic. This is because, although values of Phi will only range between −1 and 1 when measuring the association between two dichotomous variables, they may exceed these extremes when measuring the association for categorical variables where at least one of these variables has more than two categories. For this reason, we recommend that you use Phi only when comparing pairs of dichotomous variables.

To test whether two groups are different (using ranked data)

Kolmogorov-Smirnov two-sample test

Sometimes you need to establish whether the distribution of an observed set of values for each category of a variable differs from a specified distribution other than the normal distribution, for example whether your sample differs from the population from which it was selected. The **Kolmogorov–Smirnov two-sample test** enables you to establish this for ranked data (Corder and Foreman 2014). It is based on a comparison of the cumulative proportions of the observed values in each category of your sample with the cumulative proportions in the same categories for a second 'sample' such as the population from which it was selected. Therefore, you are testing the likelihood of the distribution of your observed values differing from that of the specified population by chance alone.

The Kolmogorov–Smirnov two-sample test calculates a *ks* statistic and an associated probability that the distribution in the first sample or one more extreme differs from the distribution in the second sample by chance (Corder and Foreman 2014). Although the two-sample test statistic is not often found in analysis software other than for comparisons with a normal distribution (Sections 12.6 and 12.9), it is easily accessible online (Box 12.17). A test statistic with a *p*-value of 0.05 means that there is only a 5 per cent likelihood that



Box 12.17 Focus on student research

Testing the representativeness of a sample

Jaimie's research question was: 'To what extent are my organisation's espoused customer service values evident in customer facing employees' views of the service they provide to customers?' As part of her research, she emailed a link to a Web questionnaire to the 217 employees in the organisation where she worked and 94 of these responded. The responses from each category of employee in terms of their seniority within the organisation's hierarchy were as shown in the table below.

Using an online Kolmogrov-Smirnov two-sample test calculator (SciStatCalc 2013) Jaimie calculated a Kolmogorov–Smirnov test statistic (*ks*) of 0.632 with a *p*-value of 0.819. This meant that the probability of the distribution in her sample (or one more extreme) differing from that of the organisation's employees having occurred by chance alone was 0.819; in other words, more than 80 per cent. She concluded that those employees who responded were unlikely to differ significantly from the total population in terms of their seniority within the organisation's hierarchy. This was stated in her research report.

Statistical analysis revealed the sample selected was very unlikely to differ significantly from all employees in terms of their seniority within the organisation's hierarchy [*ks* =.632, *p* =.819].

		Shop floor workers	Technicians	Supervisors	Quality managers	Management team	Total
Respondents	Number	48	29	8	6	3	94
	Percent	51.1	30.9	8.5	6.4	3.2	100
Total employees	Number	112	68	22	14	1	217
	Percent	51.6	31.3	10.1	6.5	0.5	100

the distribution in the sample or one more extreme differs from that in the second sample by chance alone and, is usually considered statistically significant. Therefore, a probability of 0.05 or smaller means you can be at least 95 per cent certain that the difference between your two distributions is unlikely to be explained by chance factors alone.

To test whether two groups are different (using numerical data)

t-tests

If a numerical variable can be divided into two distinct groups using a descriptive variable, you can assess the likelihood of these groups being different using an **independent groups *t*-test** (Box 12.17). This compares the difference in the means of the two groups using a measure of the spread of the scores. If the likelihood of an observed difference or one greater between these two groups occurring by chance alone is low, this is represented by a large *t* statistic with a low probability (*p*-value). A *p*-value of 0.05 or less is usually termed statistically significant.

Alternatively, you might have numerical data for two variables that measure the same feature but under different conditions. Your research could focus on the effects of an

intervention such as employee counselling. Consequently, you would have pairs of data that measure work performance before and after counselling for each case. To assess the likelihood of any difference or one greater between your two variables (each half of the pair) occurring by chance alone, you would use a **paired *t*-test**. Although the calculation of this is slightly different, your interpretation would be the same as for the independent groups *t*-test.

Both forms of ***t*-test** assumes that the data are normally distributed (Section 12.6 and 12.9), and this can be ignored without too many problems for sufficiently large samples, this often being defined as less than 100 (Lumley et al. 2002) and by some as less than 30 (Hays 1994). The assumption that the data for the two groups have the same variance (standard deviation squared) can also be ignored provided that the two samples are of similar size (Hays 1994).

Mann–Whitney U test

If the data are skewed or the sample size is small, the most appropriate statistical test is the **Mann–Whitney *U* Test**. This test is the non-parametric equivalent of the independent groups *t*-test (Dancey and Reidy 2020). Consequently, if the likelihood of a difference or one greater between these two groups occurring by chance alone is low, this will be represented by a large *U* statistic with a probability less than 0.05. This is termed statistically significant.

To test whether three or more groups are different (using numerical data)

One-way analysis of variance (ANOVA)

Where a numerical variable can be divided into three or more distinct groups using a descriptive variable, you can assess the likelihood of these groups being different occurring by chance alone by using **one-way analysis of variance** or one-way **ANOVA** (Box 12.18). As you can gather from its name, ANOVA analyses the **variance**, that is, the spread of data values, within and between groups of data by comparing means. The *F* ratio or *F* statistic represents these differences. If the likelihood of the observed difference or one greater between groups occurring by chance alone is low, this will be represented by a large *F* ratio with a probability of less than 0.05. This is usually considered statistically significant.



Box 12.18 Focus on management research

Testing whether groups are different

A vast body of research supports the benefits of smiling leading to the belief that the larger the smile the better for business. However, there is also evidence that, although broad smiles enhance warmth judgements of the person smiling, they also signal that the smiler is less competent than an individual who is smiling only slightly. Drawing on this, research by Wang et al. (2017) argues that while a broad as opposed to a slight smile conveys a marketer is friendly and sociable, the broad smile also suggests that a marketer may lack competence. In their paper titled, 'Smile big or not? Effects of smile intensity on perceptions of warmth and competence' in the *Journal of Consumer Research* they expressed this as a hypothesis:

> H^1: *Compared to a slight smile, a broad smile will lead to higher perceptions of the marketer's warmth, but lower perceptions of the marketer's competence. (Wang et al. 2017: 789).*



Box 12.18 Focus on management research (*continued*)

Testing whether groups are different

To test this hypothesis, they selected two images of the same person from a database of digital morphed photographs of facial expressions of different emotions at five different levels of intensity; one of a slight and one of a broad smile. These two photographs were consistence in other appearance cues such as head orientation, brow position and gaze orientation.

Next, they collected data from a sample of 123 adults from Amazon's Mechanical Turk (Mturk) who were each told that the purpose of the research was to examine people's first impressions. Each respondent was shown one of the two photographs and asked to report their warmth and competence perceptions. Warmth was measured using a scale comprising four questions relating to whether the person in the photograph was (i) warm, (ii) kind, (iii) friendly and (iv) sincere. Competence was measure using a scale comprising four questions relating to whether the person in the photograph was (i) competent, (ii) intelligent, (iii) capable and (iv) skilful. All these questions were scored 1 = 'not at all', through to 7 = 'very much so'. To ensure that the manipulation of the smile had not affected the variables, respondents were also asked questions about the authenticity of the smile and the attractiveness of the person.

Independent sample *t*-tests revealed that the ratings of smile intensity were significantly higher when the person was smiling broadly ($t = 2.60$, $p = .01$). Ratings of the person's perceived authenticity and attractiveness did not appear to differ significantly between broad and slight smiles, the *t* statistic not being reported in the paper.

Subsequently, Wang and colleagues tested their hypothesis regarding the differential effect of smile intensity on perceptions of warmth and competence by calculating ANOVA (analysis of variance) statistics. This revealed that judgements of warmth were significantly higher for a broad smile than for a slight smile ($F(1,121) = 23.28$, $p < .001$). However, competence judgements were significantly lower for a broad smile than for a slight smile ($F(1,121) = 6.29$, $p = .01$). This they noted provided support for their hypothesis arguing that individuals displaying broad smiles tend to be judged as warmer but less competent than those displaying slight smiles.

Subsequent research reported in the same paper investigated the impact on perceptions of smiles of different consumption contexts looking at the marketer's persuasive intent, perceived purchased risk and regulatory frameworks.

The following assumptions need to be met before using one-way ANOVA. More detailed discussion is available in Hays (1994) and Dancey and Reidy (2020).

- Each data value is independent and does not relate to any of the other data values. This means that you should not use one-way ANOVA where data values are related in some way, such as the same case being tested repeatedly.
- The data for each group are normally distributed (Sections 12.6 and 12.9). This assumption is not particularly important provided that the number of cases in each group is large (30 or more).
- The data for each group have the same variance (standard deviation squared). However, provided that the number of cases in the largest group is not more than 1.5 times that of the smallest group, this appears to have very little effect on the test results.

12.11 Assessing the strength of relationships

If your data set contains ranked or numerical data, it is likely that, as part of your exploratory data analysis, you will already have plotted the relationship between cases for these ranked or numerical variables using a scatter graph (Figure 12.12). Such relationships

might include those between weekly sales of a new product and those of a similar established product, or age of employees and their length of service with the company. These examples emphasise the fact that your data can contain two sorts of relationship:

- those where a change in one variable is accompanied by a change in another variable but it is not clear which variable caused the other to change, a **correlation**;
- those where a change in a (dependent) variable is caused by a change in another (independent) variable(s), a **causal relationship**.

To assess the strength of relationship between pairs of variables (using numerical data)

Correlation coefficients

A **correlation coefficient** enables you to quantify the strength of the linear relationship between two ranked or numerical variables. This coefficient (usually represented by the letter *r*) can take on any value between +1 and −1 (Figure 12.15). A value of +1 represents a perfect **positive correlation**. This means that the two variables are precisely related and that as values of one variable increase, values of the other variable will increase. By contrast, a value of −1 represents a perfect **negative correlation**. Again, this means that the two variables are precisely related; however, as the values of one variable increase those of the other decrease. Correlation coefficients between +1 and −1 represent weaker positive and negative correlations, a value of 0 meaning the variables are perfectly independent. Within business research it is extremely unusual to obtain perfect correlations.

For data collected from a sample, you will need to know the probability of your correlation coefficient or one more extreme (larger) having occurred by chance alone. Most analysis software calculates this probability automatically (Box 12.19). As outlined earlier, if this probability is very low (usually less than 0.05) then the relationship is usually considered statistically significant. In effect you are rejecting the null hypothesis, that is a statement such as: 'there is no correlation between . . . ' and accepting a hypothesis such as: 'there is a correlation between . . . ' If the probability is greater than 0.05 then your relationship is usually considered not statistically significant.

Pearson's product moment correlation coefficient (PMCC)

If both your variables contain numerical data, you should use **Pearson's product moment correlation coefficient** (PMCC) to assess the strength of relationship (Box 12.19). Where these data are from a sample then the sample should have been selected at random and the data should be normally distributed. If one or both of your variables contain ranked data you cannot use PMCC, but will need to use a correlation coefficient that is calculated using ranked data.

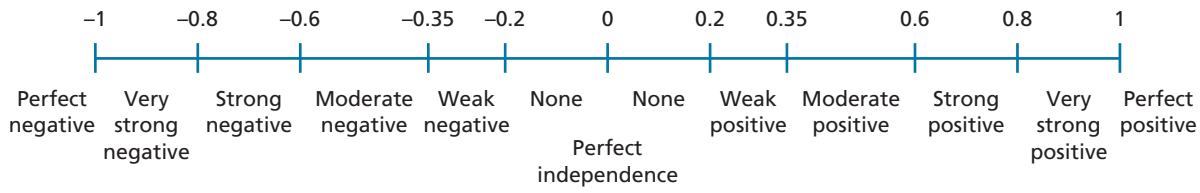


Figure 12.15 Interpreting a correlation coefficient
Source: Developed from earlier editions, Hair et al. (2018)

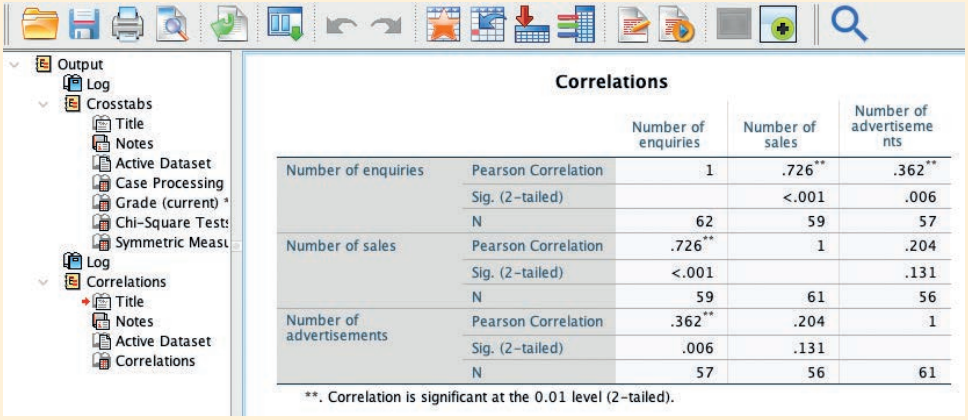
Box 12.19 Focus on student research

Assessing the strength of relationship between pairs of variables

As part of his research project, Hassan obtained data from a company on the number of television advertisements, number of enquiries and number of sales of their product. These data were entered into the analysis software. He wished to discover whether there were any relationships between the following pairs of these variables:

- number of television advertisements and number of enquiries;
- number of television advertisements and number of sales;
- number of enquiries and number of sales.

As the data were numerical, he used the statistical analysis software to calculate Pearson's product moment correlation coefficients for all pairs of variables. The output was the correlation matrix:



Correlations

		Number of enquiries	Number of sales	Number of advertisements
Number of enquiries	Pearson Correlation	1	.726**	.362**
	Sig. (2-tailed)		<.001	.006
	N	62	59	57
Number of sales	Pearson Correlation	.726**	1	.204
	Sig. (2-tailed)	<.001		.131
	N	59	61	56
Number of advertisements	Pearson Correlation	.362**	.204	1
	Sig. (2-tailed)	.006	.131	
	N	57	56	61

**. Correlation is significant at the 0.01 level (2-tailed).

Hassan's matrix is symmetrical because correlation implies only a relationship rather than a cause-and-effect relationship. Cell values in the matrix include the correlation coefficient. Thus, the correlation between the number of advertisements and the number of enquiries is 0.362. This coefficient shows that there is a weak to moderate positive relationship between the number of television advertisements and the number of enquiries. The (**) highlights that the probability of this correlation coefficient or one more extreme occurring by chance alone is less than or equal to 0.01 (1 per cent). This correlation coefficient is therefore usually considered statistically significant. The two-tailed significance for each correlation, rather than a one-tailed significance, is stated as correlation does not test the direction of a relationship, just whether they are related.

Using the data in this matrix Hassan concluded that:

> *There is a significant strong positive relationship between the number of enquiries and the number of sales* (r (59) = .726, $p < 0.001$) *and a significant but weak to moderate relationship between the number of television advertisements and the number of enquiries* (r (57) = .362, p = 0.006). *However, there appears to be no significant relationship between the number of television advertisements and the number of sales* (r (56) = . 204, p = 0.131).

Spearman's and Kendall's rank correlation coefficients

Rank correlation coefficients represent the degree of agreement between the two sets of rankings. Before calculating the rank correlation coefficient, you will need to ensure that the data for both variables are ranked. Where one of the variables is numerical this will necessitate converting these data to ranked data. Subsequently, you have a choice of rank correlation coefficients. The two used most widely in business and management research are **Spearman's rank correlation coefficient** (Spearman's ρ, the Greek letter rho) and **Kendall's rank correlation coefficient** (Kendall's τ, the Greek letter tau). Where data are being used from a sample, both these rank correlation coefficients assume that the sample is selected at random, and the data are ranked (ordinal). Given this, it is not surprising that whenever you can use Spearman's rank correlation coefficient you can also use Kendall's rank correlation coefficient. However, if your data for a variable contain tied ranks, Kendall's rank correlation coefficient is generally considered to be the more appropriate of these coefficients to use. Although each of the correlation coefficients discussed uses a different formula in its calculation, the resulting coefficient is interpreted in the same way as PMCC.

To assess the strength of a cause-and-effect relationship between dependent and independent variables (using numerical data)

Coefficients of determination and multiple determination

The **coefficient of determination** enables you to assess the strength of relationship between a numerical dependent variable and one numerical independent variable; and the **coefficient of multiple determination** enables you to assess the strength of relationship between a numerical dependent variable and two or more independent variables. Once again, where these data have been selected from a sample, the sample must have been selected at random. For a dependent variable and one (or perhaps two) independent variables you will have probably already plotted this relationship on a scatter graph. If you have more than two independent variables this is unlikely as it is very difficult to represent four or more scatter graph axes visually!

The coefficient of determination (represented by r^2) and the coefficient of multiple determination (represented by R^2) can both take on any value between 0 and +1. They measure the proportion of the variation in a dependent variable (amount of sales) that can be explained statistically by the independent variable (marketing expenditure) or variables (marketing expenditure, number of sales staff, etc.). This means that if all the variation in amount of sales can be explained by the marketing expenditure and the number of sales staff, the coefficient of multiple determination will be 1. If 50 per cent of the variation can be explained, the coefficient of multiple determination will be 0.5, and if none of the variation can be explained, the coefficient will be 0 (Box 12.20). Within our research we have rarely obtained a coefficient above 0.8.

For a dependent variable and two or more independent variables you will have probably already plotted this relationship on a scatter graph. The process of calculating the coefficient of determination and regression equation using one independent variable is normally termed **regression analysis**. Calculating a coefficient of multiple determination



Box 12.20 Focus on student research

Assessing a cause-and-effect relationship

As part of her research project, Arethea wanted to assess the relationship between employees' annual salaries and the number of years each had been employed by an organisation. She believed that an employee's annual salary would be dependent on the number of years for which she or he had been employed (the independent variable). Arethea entered these data into her analysis software and calculated a coefficient of determination (r^2) of 0.37.

As she was using data for all employees of the firm (the total population) rather than a sample, the probability of her coefficient occurring by chance alone was 0. She therefore concluded that 37 per cent of the variation in current employees' salary could be explained by the number of years they had been employed by the organisation.

and regression equation using two or more independent variables is termed **multiple regression analysis**, and we advise you to use statistical analysis software and consult a detailed statistics textbook that also explains how to use the software, such as Field (2018). For sample data most statistical analysis software will automatically calculate the significance of the coefficient of multiple determination or one more extreme occurring by chance. A very low *p*-value (usually less than 0.05) means that your coefficient or one more extreme is unlikely to have occurred by chance alone.

12.12 Making predictions

To predict the value of a variable from one or more other variables

Calculating the regression equation

Regression analysis can also be used to predict the values of a dependent variable given the values of one or more independent variables by calculating a **regression equation** (Box 12.21). You may wish to predict the amount of sales for a specified marketing expenditure and number of sales staff. You would represent this as a regression equation:

$$AoS_i + \alpha + \beta_1 ME_i + \beta_2 NSS_i$$

where:

- AoS is the amount of sales (the dependent variable).
- ME is the marketing expenditure (an independent or predictor variable).
- NSS is the number of sales staff (an independent or predictor variable).
- α is the regression coefficients.
- β_1 and β_2 are the beta coefficients.

Box 12.21 Focus on student research

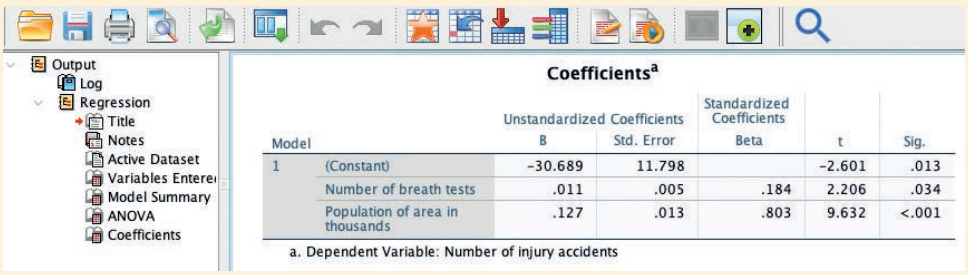
Forecasting the number of road injury accidents

As part of her research project, Nimmi had obtained data on the number of road injury accidents and the number of drivers breath tested for alcohol in 39 police force areas. In addition, she obtained data on the total population (in thousands) for each of these areas from the most recent census. Nimmi wished to find out if it was possible to predict the number of road injury accidents (*RIA*) in each police area (her dependent variable) using the number of drivers breath tested (*BT*) and the total population in thousands (*POP*) for each of the police force areas (independent variables). This she represented as an equation:

$$RIA_i + \alpha + \beta_1 BT_i + \beta_2 POP_i$$

Nimmi entered her data into the analysis software and undertook a multiple regression analysis. She scrolled down the output file and found the table headed 'Coefficients'. Nimmi substituted the 'unstandardised coefficients' into her regression equation (after rounding the values):

$$RIA_i = -30.689 + 0.011\ BT_i + 0.127\ POP_i$$



Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-30.689	11.798		-2.601	.013
	Number of breath tests	.011	.005	.184	2.206	.034
	Population of area in thousands	.127	.013	.803	9.632	<.001

a. Dependent Variable: Number of injury accidents

This meant she could now predict the number of road injury accidents for a police area of different populations for different numbers of drivers breath tested for alcohol. For example, the number of road injury accidents for an area of 500,000 population in which 10,000 drivers were breath tested for alcohol can now be estimated:

$$-30.689 + (0.011 \times 10000) + (0.127 \times 500)$$
$$= -30.689 + 110 + 49 + 63.5$$
$$= 81.8$$

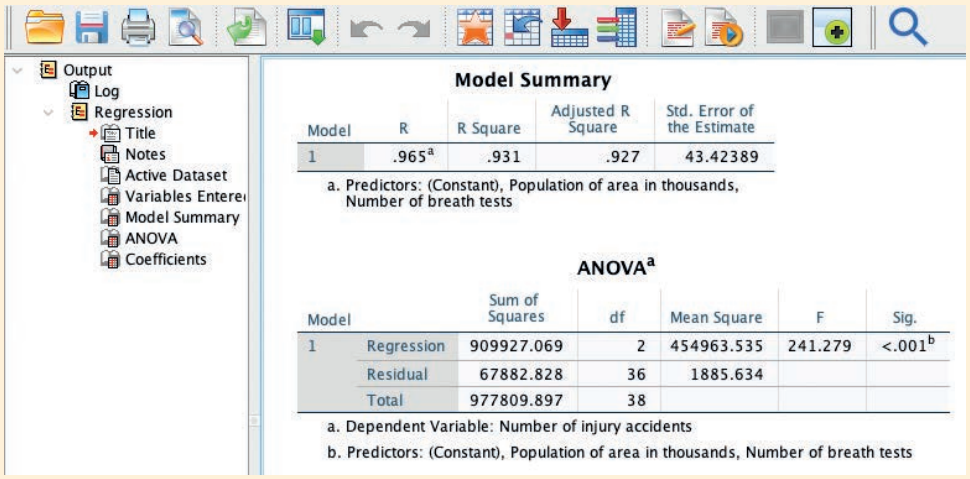
In order to check the usefulness of these estimates, Nimmi scrolled back up her output and looked at the results of R^2, *t*-test and *F*-test.

The R^2 and adjusted R^2 values of 0.965 and 0.931 respectively both indicated that there was a high degree of goodness of fit of her regression model. It also meant that over 90 per cent of variance in the dependent variable (the number of road injury accidents) could be explained by the regression model. The *F*-test result was 241.279 with a significance ('Sig.') of .000. This meant that the probability of these or more extreme results occurring by chance was less than 0.001. This she interpreted as a significant relationship between the number of road injury accidents in an area and the population of the area, and the number of drivers breath tested for alcohol.

The *t*-test results for the individual regression coefficients (shown in the first extract) for the two independent variables were 9.632 and 2.206. Once again, the probability of both these or more extreme results occurring by chance was less than 0.05, being less than 0.001 for the independent variable population of area in thousands and 0.034 for the independent variable number of breath tests. This means that the regression coefficients for these variables were both considered significant at the $p < 0.05$ level.

Box 12.21 Focus on student research (*continued*)

Forecasting the number of road injury accidents



Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965[a]	.931	.927	43.42389

a. Predictors: (Constant), Population of area in thousands, Number of breath tests

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	909927.069	2	454963.535	241.279	<.001[b]
	Residual	67882.828	36	1885.634		
	Total	977809.897	38			

a. Dependent Variable: Number of injury accidents

b. Predictors: (Constant), Population of area in thousands, Number of breath tests

This equation can be translated as stating:

$$Amount\ of\ sales_i = value + (\beta_1 * Marketing\ expenditure_i) + (\beta_2 * Number\ of\ sales\ staff_i)$$

Using regression analysis, you would calculate the values of the constant coefficient a and the slope coefficients β_1 and β_2 from data you had already collected on amount of sales, marketing expenditure and number of sales staff. A specified marketing expenditure and number of sales staff could then be substituted into the regression equation to predict the amount of sales that would be generated. When calculating a regression equation, you need to ensure the following assumptions are met:

- the relationship between dependent and independent variables is linear. **Linearity** refers to the degree to which the change in the dependent variable is related to the change in the independent variables. Linearity can easily be examined through residual plots (these are usually drawn by the analysis software). Two things may influence the linearity. First, individual cases with extreme values on one or more variables (outliers) may violate the assumption of linearity. It is, therefore, important to identify these outliers and, if appropriate, exclude them from the analysis. Second, the values for one or more variables may violate the assumption of linearity. For these variables the data values may need to be transformed. Techniques for this can be found in other, more specialised books on multivariate data analysis, for example Hair et al. (2018).
- the extent to which the data values for the dependent and independent variables have equal variances (this term was explained earlier in Section 12.4), also known as **homoscedasticity**. Again, analysis software usually contains statistical tests for equal variance. For example, the Levene test for homogeneity of variance measures the equality of variances for a single pair of variables. If **heteroscedasticity** (that is, unequal variances)

exists, it may still be possible to carry out your analysis. Further details of this can again be found in more specialised books on multivariate analysis, such as Hair et al. (2018).

- absence of correlation between two or more independent variables (**collinearity** or **multicollinearity**), as this makes it difficult to determine the separate effects of individual variables. The simplest diagnostic is to use the correlation coefficients, extreme collinearity being represented by a correlation coefficient of 1. The rule of thumb is that the presence of high correlations (generally 0.90 and above) indicates substantial collinearity (Hair et al. 2018). Other common measures include the tolerance value and its inverse – the **variance inflation factor** (VIF). Hair et al. (2018) recommend a very small tolerance value (0.10 or below) or a large VIF value (10 or above) indicates high collinearity.
- the errors for the independent variables are normally distributed (Sections 12.6 and 12.9). The **residuals** are the 'errors' (differences) between each predicted value for the dependent variable when using the regression equation and the associated observed value for the dependent variable. A simple diagnostic tool is to either draw a histogram or frequency polygon of the residual values and look for a normal distribution (Figures 12.7 and 12.17). Alternatively, you can use a scatter graph (Figure 12.12) to plot the residual values against the predicted values and look for a diagonal line running from bottom left to top right.
- if your data are a sample, rather than a population, you also need to estimate the number of cases required in your sample. For regression analysis a widely used formula to estimate the number needed to satisfy the analysis' assumptions is:

$$\textit{Sample size} = 50 + (8 \times \textit{number of independent (predictor) variables})$$

Consequently, for a regression analysis with two independent variables the sample size can be estimated as:

$$\begin{aligned} \textit{sample size} &= 50 + (8 \times 2) \\ &= 50 + 16 = 66 \end{aligned}$$

However, this is an approximation and will overestimate the sample size required as the number of independent variables increases (Green 1991).

To measure the goodness of fit of the regression equation

Coefficients of determination and multiple determination

The coefficient of determination, r^2 (discussed earlier), can be used as a measure of how good a predictor your regression equation is likely to be. If your equation is a perfect predictor then the coefficient of determination will be 1. If the equation can predict only 50 per cent of the variation, then the coefficient of determination will be 0.5, and if the equation predicts none of the variation, the coefficient will be 0. The coefficient of multiple determination (R^2) indicates the degree of the goodness of fit for your estimated multiple regression equation. It can be interpreted as how good a predictor your multiple regression equation is likely to be. It represents the proportion of the variability in the dependent variable that can be explained by your multiple regression equation. This means that when multiplied by 100, the coefficient of multiple determination can be interpreted as the percentage of variation in the dependent variable that can be explained by the estimated regression equation. The adjusted R^2 statistic (which takes into account the number of independent variables in your regression equation) is preferred by some researchers as it helps avoid overestimating the impact of adding an independent variable on the amount of variability explained by the estimated regression equation.

t-tests and F-tests

The *t*-test and *F*-test are used to work out the probability of the relationship represented by your regression analysis or one more extreme having occurred by chance. In simple linear regression (with one independent and one dependent variable), the *t*-test and *F*-test will give you the same answer. However, in multiple regression, the *t*-test is used to find out the probability of the relationship between each of the individual independent variables and the dependent variable or one more extreme occurring by chance. In contrast, the *F*-test is used to find out the overall probability of the relationship or one more extreme between the dependent variable and all the independent variables occurring by chance. The *t* distribution table and the *F* distribution table are used to determine whether a *t*-test or an *F*-test is significant by comparing the results with the *t* distribution and *F* distribution respectively, given the degrees of freedom and the predefined significance level.

12.13 Examining trends

When examining longitudinal data, the first thing we recommend you do is to draw a line graph to obtain a visual representation of the trend (Figure 12.6). Subsequently, statistical analyses can be undertaken. Three of the more common uses of such analyses are:

- to explore the trend or relative change for a single variable over time;
- to compare trends or the relative change for variables measured in different units or of different magnitudes;
- to determine the long-term trend and forecast future values for a variable (time series analysis).

To establish the trend

Index numbers

To answer some research question(s) and meet some objectives you may need to establish the trend for one variable. One way of doing this is to use **index numbers** to compare the relative magnitude for each data value (case) over time rather than using the actual data value. Index numbers are also widely used in business publications and by organisations. Various share indices (Box 12.22), such as the *Financial Times* FTSE 100, and the Nasdaq Composite Index are well-known examples.

Although such indices can involve quite complex calculations, they all compare change over time against a base period. The **base period** is normally given the value of 100 (or 1000 in the case of many share indices, including the FTSE 100) and change is calculated relative to this. Thus, a value greater than 100 would represent an increase relative to the base period, and a value less than 100 a decrease.

To calculate simple index numbers for each case of a longitudinal variable you use the following formula:

$$\textit{Index number for case} = \frac{\textit{date value for case}}{\textit{base period data value}} \times 100$$

Thus, if a company's sales were 125,000 units in 2021 (base period) and 150,000 units in 2022, the index number for 2021 would be 100 and for 2022 it would be 120.

Box 12.22 Focus on research in the news

Stocks dip as traders weigh Covid curbs and monetary policy direction

Nasdaq drops 1.7 per cent while Tesla, Peloton and BuzzFeed fall sharply

Global stocks dipped on Thursday, as traders weighed new restrictions aimed at tackling the spread of the Omicron coronavirus variant along with questions about the direction of monetary policy.

The technology focused Nasdaq Composite index closed 1.7 per cent lower, hitting a session low just before the bell. Shares in exercise bike company Peloton fell 11.4 per cent, while Tesla ceded 6.1 per cent. Media company BuzzFeed, which went public earlier this week, gave up 23.6 per cent.

Wall Street's blue-chip S&P 500 index slipped 0.7 per cent, also hitting session lows near the close. The equity gauge had ended the previous session within reach of its all-time closing high, wiping out almost all of its losses sustained in volatile trading since the emergence of Omicron rattled markets in late November.

European equities ended the day lower. The regional Stoxx 600 index dipped by just under 0.1 per cent, while London's FTSE 100 dropped 0.2 per cent.

The UK moved to implement its plan B restrictions on Wednesday evening, including guidance to work from home and mandatory mask-wearing for most indoor venues. Denmark tightened its virus control measures, following similar moves by other EU nations including Germany, Italy and Poland.

Meanwhile, economists surveyed by Refinitiv expect data to be released on Friday to show US consumer prices rose 6.8 per cent in the year to November. 'There was a post-Omicron rally but I think it is still too soon to interpret the recent data,' said Lale Akoner, senior market strategist at BNY Mellon. 'If there is a big inflation uptick, then I do believe the market is going to get nervous about the Fed hiking [interest rates] earlier and faster than has been priced in so far.'

FT *Source:* Abridged from: 'Stocks dip as traders weigh Covid curbs and monetary policy direction', Naomi Rovnick and Kate Duguid (2021) *Financial Times,* 9 December. Copyright © The Financial Times Ltd

To compare trends between two or more variables

Index numbers

To answer some other research question(s) and to meet the associated objectives you may need to compare trends between two or more variables measured in different units or at different magnitudes. For example, to compare changes in prices of fossil fuels such as oil and coal over time is difficult as the prices are recorded for different units (litres and tonnes). One way of overcoming this is to use index numbers) and compare the relative changes in the value of the index rather than actual figures. The index numbers for each variable are calculated in the same way as outlined earlier.

To determine the trend and forecast

Moving averages

The trend can be estimated by drawing a freehand line through the data on a line graph. However, these data are often subject to variations such as seasonal fluctuations, and so this method is not very accurate. A straightforward way of overcoming this is to calculate a moving average for the time series of data values. Calculating a **moving average** involves replacing each value in the time series with the mean of that value and those values directly preceding and following it (Anderson et al. 2020). This smooths out the variation in the data so that you can see the trend more clearly. The calculation of a moving average is relatively straightforward using either a spreadsheet or statistical analysis software.

Once the trend has been established, it is possible to forecast future values by continuing the trend forward for time periods for which data have not been collected. This involves calculating the **long-term trend** – that is, the amount by which values are changing in each time period after variations have been smoothed out. Once again, this is relatively straightforward to calculate using analysis software.

Forecasting using regression analysis

Forecasting can also be undertaken using other statistical methods, including regression analysis. If you are using regression for your time-series analysis, the **Durbin–Watson statistic** can be used to discover whether the value of your dependent variable at time t is related to its value at the previous time period, commonly referred to as $t - 1$. This situation, known as **autocorrelation** or **serial correlation**, is important as it means that the results of your regression analysis are less likely to be reliable. The Durbin–Watson statistic ranges in value from zero to 4. A value of 2 indicates no autocorrelation. A value towards zero indicates positive autocorrelation. Conversely, a value towards 4 indicates negative autocorrelation. More detailed discussion of the Durbin–Watson test can be found in other, more specialised books on multivariate data analysis, for example Hair et al. (2018).

12.14 Summary

- For data to be analysed quantitatively it must either already be quantified or able to be transformed into quantitative data.
- Non-numerical data such as text, voice and visual data can be quantified by classifying into sets or categories.
- Data for quantitative analysis comprise categorical and numerical data.
- Categorical data are either descriptive (dichotomous, or nominal) or ordinal (rank).
- Numerical data can be divided into either continuous and discrete data, or interval or ratio data.
- The data type, and associated precision of measurement, will constrain the tables, graphs, and statistical analysis techniques you can use.
- All data should, with few exceptions, be recorded using numerical codes to facilitate quantitative analyses.
- Where possible, you should use existing coding schemes to enable comparisons.
- For primary data you should include pre-set codes on the data collection form to minimise coding after collection. For variables where responses are not known, you will need to develop a codebook after data have been collected for the first 50 to 100 cases.

- You should enter codes for all data values, including missing data.
- Data are prepared for analysis as a data matrix in which each column usually represents a variable and each row a case. Your first variable should be a unique identifier to facilitate error checking.
- Your initial analysis should explore data using both tables and graphs. Your choice of table or graph will be influenced by your research question(s) and objective(s), the aspects of the data you wish to emphasise, and the data type.
- This may involve using:
  - tables to show specific amounts;
  - bar graphs, multiple bar graphs, histograms and, occasionally, pictograms and word clouds to show (and compare) highest and lowest amounts and relative distributions;
  - line graphs to show trends;
  - pie charts and percentage component bar graphs to show proportions or percentages;
  - box plots to show distributions;
  - multiple line graphs to compare trends and show intersections;
  - scatter graphs to show relationships between variables.
- Your choice of statistics will be influenced by your research question(s) and objective(s), statistical assumptions such as suitability for the data type, whether the data are normally distributed and sample size.
- Your analysis will use statistics to describe, examine associations and differences, examine relationships, make predictions, and examine and determine trends:
  - the mean, median or mode to describe the central tendency;
  - the inter-quartile range or the standard deviation to describe the dispersion;
  - Kolmogorov–Smirnov or Shapiro–Wilk to test for normality;
  - chi square to test whether two variables are independent;
  - Cramer's V and phi to test whether two variables are associated;
  - Kolmogorov–Smirnov to test whether the values differ from a specified population;
  - *t*-tests and ANOVA to test whether groups are different;
  - correlation, and coefficients of determination and multiple determination (regression), to assess the strength of relationships between variables;
  - regression analysis to predict values.
- Longitudinal data may necessitate selecting different statistical techniques such as:
  - index numbers to establish a trend or to compare trends between two or more variables measured in different units or at different magnitudes;
  - moving averages and regression analysis to determine the trend and forecast.

Self-check questions

Help with these questions is available at the end of the chapter.

12.1 The following secondary data have been obtained from the Park Trading Company's audited annual accounts:

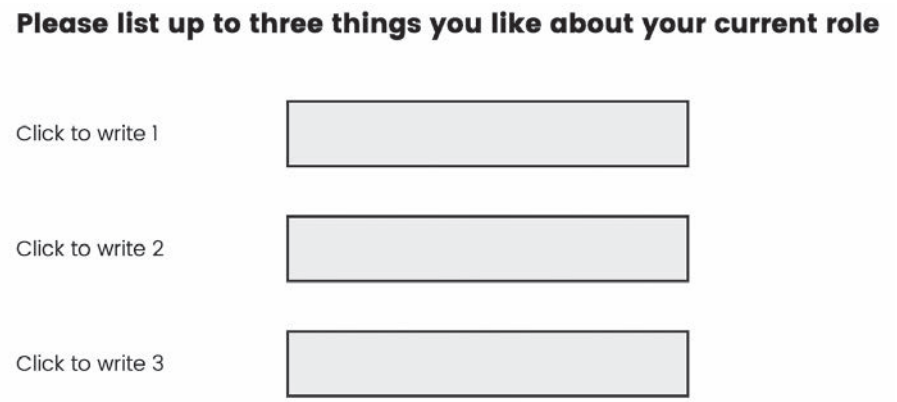
Year end	Income	Expenditure
2013	11000000	9500000
2014	15200000	12900000
2015	17050000	14000000

Year end	Income	Expenditure
2016	17900000	14900000
2017	19000000	16100000
2018	18700000	17200000
2019	17100000	18100000
2020	17700000	19500000
2021	19900000	20000000

a Which are the variables, and which are the cases?

b Sketch a possible data matrix for these data for entering into a spreadsheet.

12.2 **a** How many variables will be generated from the following request?



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b How would you go about devising a coding scheme for this question from a Web questionnaire that has been returned by over 600 employees?

12.3 **a** Illustrate the data from the Park Trading Company's audited annual accounts (Question 12.1) to show trends in income and expenditure.

b What does your diagram emphasise?

c What diagram would you use to emphasise the years with the lowest and highest income?

12.4 As part of research into the impact of television advertising on donations by text message to a major disaster appeal, data have been collected on the number of viewers reached by the advertising campaign and the number of donations by text message each day for the past two weeks.

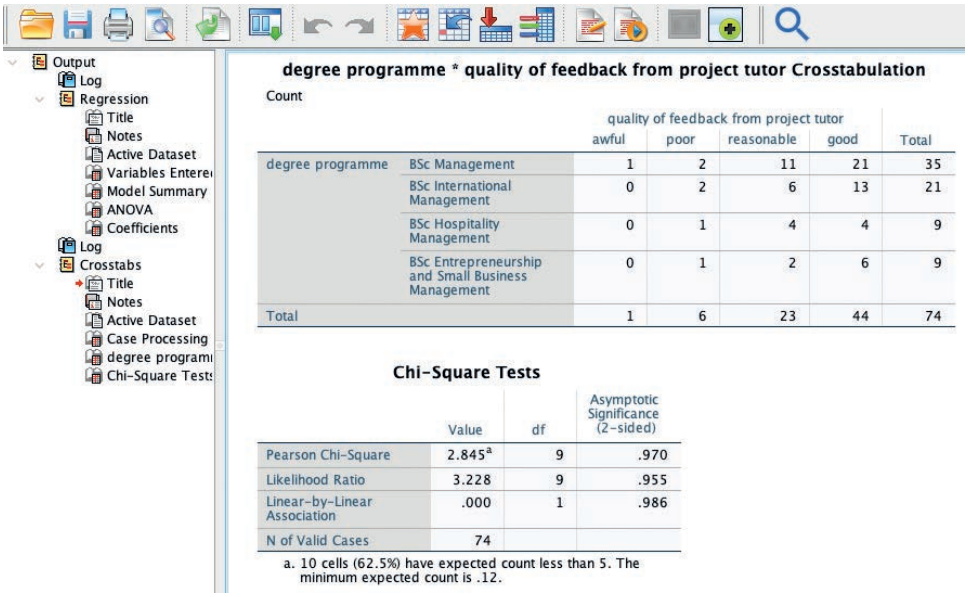
a Which diagram or diagrams would you use to explore these data?

b Give reasons for your choice.

12.5 **a** Which measures of central tendency and dispersion would you choose to describe the Park Trading Company's income (Question 12.1) over the period 2013–2021?

b Give reasons for your choice.

12.6 **a** A colleague has collected data from a sample of 74 students. They present you with the following output from the statistical analysis software:
Explain what this tells you about students' opinions about feedback from their project tutor.



12.7 Briefly describe when you would use regression analysis and correlation analysis, using examples to illustrate your answer.

12.8 **a** Use an appropriate technique to compare the following data on share prices for two financial service companies over the past six months, using the period six months ago as the base period:

	EJ Investment Holdings	AE Financial Services
Price 6 months ago	€10	€587
Price 4 months ago	€12	€613
Price 2 months ago	€13	€658
Current price	€14	€690

b Which company's share prices have increased most in the last six months? (Note: you should quote relevant statistics to justify your answer.)

Review and discussion questions

12.9 Use a search engine to discover coding schemes that already exist in secondary data you are interested in using. This might be ethnic group, family expenditure, industry group, socio-economic class and the like.

a Discuss how credible you think each coding scheme is with a friend. To come to an agreed answer, pay particular attention to:

- the organisation (or person) that is responsible for the coding scheme;
- any explanations regarding the coding scheme's design;
- use of the coding scheme to date.

b Widen your search to include coding schemes that may be of use for your research project. Make a note of the web address of any that are of interest.

12.10 With a friend, choose a large company in which you are interested. Obtain a copy of the annual report for this company. Examine the use of tables, graphs and charts in your chosen company's report.
- **a** To what extent does the use of graphs and charts in your chosen report follow the guidance summarised in Box 12.8 and Table 12.2?
- **b** Why do you think this is?

12.11 With a group of friends, each choose a different share price index. Well-known indices you might choose include the Nasdaq Composite Index, France's CAC 40, Germany's Dax, Hong Kong's Hang Seng Index (HSI), Japan's Nikkei Index, the UK's FTSE 100 and the USA's Dow Jones Industrial Average Index.
- **a** For each of the indices, find out how it is calculated and note down its daily values for a one-week period.
- **b** Compare your findings regarding the calculation of your chosen index with those for the indices chosen by your friends, noting down similarities and differences.
- **c** To what extent do the indices differ in the changes in share prices they show? Why do you think this is?

12.12 Find out whether your university provides you with access to IBM SPSS Statistics. If it does, visit this book's companion website and download the self-teach package and associated data sets. Work through this to explore the features of IBM SPSS Statistics.



Progressing your research project

Analysing your data quantitatively

- Examine the technique(s) you are proposing to use to obtain data to answer your research question. You need to decide whether you will be using any data that could usefully be analysed quantitatively.
- If you decide that your data should be analysed quantitatively, you must ensure that the data collection methods have been designed to make analysis as straightforward as possible. In particular, you need to pay attention to the coding scheme for each variable and the layout of your data matrix.
- Once your data have been prepared for your analysis software, you will need to explore and present them. Bearing your research question in mind, you should select the most appropriate diagrams and tables after considering the suitability of all possible techniques. Remember to label your diagrams clearly and to keep a copy, as they may form part of your research report.
- Once you are familiar with your data, use appropriate statistics to answer your research questions. This may include one or more of describing data, examining associations and differences, examining relationships, making predictions and examining trends.
- Remember to keep an annotated copy of your analyses, as you will need to quote statistics to justify statements you make in the findings section of your research report.
- Use the questions in Box 1.4 to guide you in your reflective diary entry.

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Further reading

Berman Brown, R. and Saunders, M. (2008) *Dealing with Statistics: What You Need to Know.* Maidenhead: McGraw Hill Open University Press. This is a statistics book that assumes virtually no statistical knowledge, focusing upon which test or graph, when to use it and why. It is written for people who are fearful and anxious about statistics and do not think they can understand numbers!

De Vaus, D.A. (2014) *Surveys in Social Research* (6th edn). Abingdon: Routledge. Chapters 9 and 10 contain an excellent discussion about coding data and preparing data for analysis. Part IV (Chapters 12–18) provides a detailed discussion of how to analyse survey data.

Field, A. (2018) *Discovering Statistics Using SPSS* (5th edn). London: Sage. This book offers a clearly explained guide to statistics and using SPSS. It is divided into four levels, the lowest of which assumes no familiarity with the data analysis software and very little with statistics. It covers entering data and how to generate and interpret a wide range of tables, diagrams and statistics using SPSS.

Hair, J.F., Black, B., Babin, B., Anderson, R.E. and Tatham, R.L. (2018) *Multivariate Data Analysis* (8th edn). Andover: Cengage. This book provides detailed information on statistical concepts and techniques. Issues pertinent to design, assumptions, estimation and interpretation are systematically explained for users of more advanced statistical techniques.

McCandless, D. (2021) *Beautiful News. Positive Trends, Uplifting Stats, Creative Solutions.* London: William Collins. This book of infographics focuses on positive things happening in the world and is uplifting! Like the author's books *Knowledge is Beautiful* (2014) and *Information is Beautiful* (2012), it is best considered as a visual miscellenium of facts and ideas to explore.

Case 12
High performance work practices in SMEs



Source: hans engbers/Shutterstock

For over a quarter of a century, there has been extensive debate about whether human resource (HR) practices, most commonly referred to as high-performance work practices (HPWPs), are associated, or even cause firms to achieve better performance, such as financial performance (FP) (Guest 2011; Harney and Alkhalaf 2020). Freya's research project tutor had collected data using a telephone questionnaire on HPWPs and firm performance from a stratified random sample of SMEs (firms with 11–249 employees) for two time periods: 2007 and 2011.

Variable label	Variable name	Data type
Size	Number of employees (full time equivalent employees)	Ratio
Age	Age of firm	Ratio
Industry	1 = services ; 2 = manufacturing	Nominal
Strategy	1 = cost ; 2 = quality; 3 = innovation	Nominal
HPWPs07	Number of high performance work practices 2007	Ratio
HPWPs11	Number of high performance work practices 2011	Ratio
FP07	Financial performance 2007 compared to competitors (1 = very much worse, 5 = very much better)	Ordinal
FP11	Financial performance 2007 compared to competitors (1 = very much worse, 5 = very much better)	Ordinal

Each of these variables had been coded to reflect its data type and the associated values for each had been entered into IBM SPSS Statistics and Microsoft Excel. Freya's supervisor had checked the accuracy of the coding, corrected any coding errors, added missing values, and checked (where appropriate) the variables' data were normally distributed.

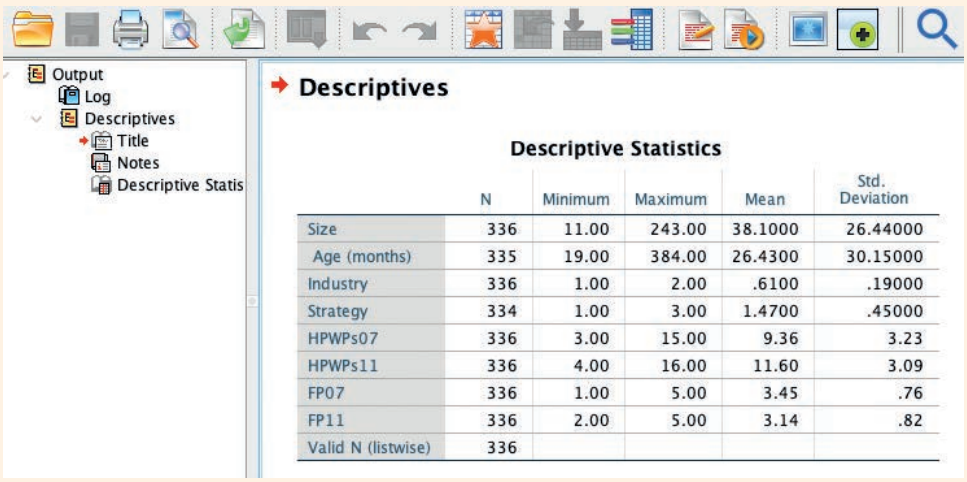
Freya read about how these survey data had been collected. She discovered her project tutor had selected a stratified random sample of 5,998 SMEs in 2007 and 6,165 in 2011 from Dun and Bradstreet (D&B) databases of UK firms. Respondents in the 2007 survey were asked if they would agree to be re-surveyed at a future date, and these respondents were prioritised in the 2011 survey. In the SPSS datafile for 2007 there were 1,589 unique firm records and in 2011, there were 1,522, 336 respondents answering in both 2007 and 2011 and comprising the balanced panel. Before meeting with her project tutor, Freya drafted a table showing

response rates for the two studies and undertook a preliminary analysis of these data using both SPSS and Excel.

Table C12.1 Response rates

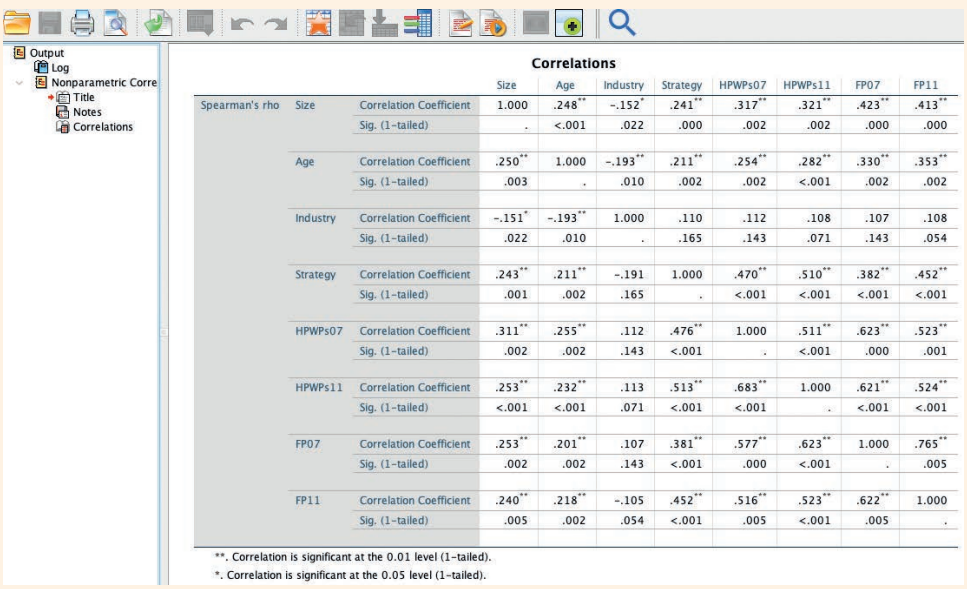
	2007 survey (t = 1)	2011 survey (t = 2)	Balanced 'panel' (2007 and 2011)
Sample	5998	6165	-
Response (n)	1589	1522	336
Response rate (%)	26.5%	24.7%	21.1% (out of 1589)

Table C12.2 Descriptive statistics for the balanced panel



	N	Minimum	Maximum	Mean	Std. Deviation
Size	336	11.00	243.00	38.1000	26.44000
Age (months)	335	19.00	384.00	26.4300	30.15000
Industry	336	1.00	2.00	.6100	.19000
Strategy	334	1.00	3.00	1.4700	.45000
HPWPs07	336	3.00	15.00	9.36	3.23
HPWPs11	336	4.00	16.00	11.60	3.09
FP07	336	1.00	5.00	3.45	.76
FP11	336	2.00	5.00	3.14	.82
Valid N (listwise)	336				

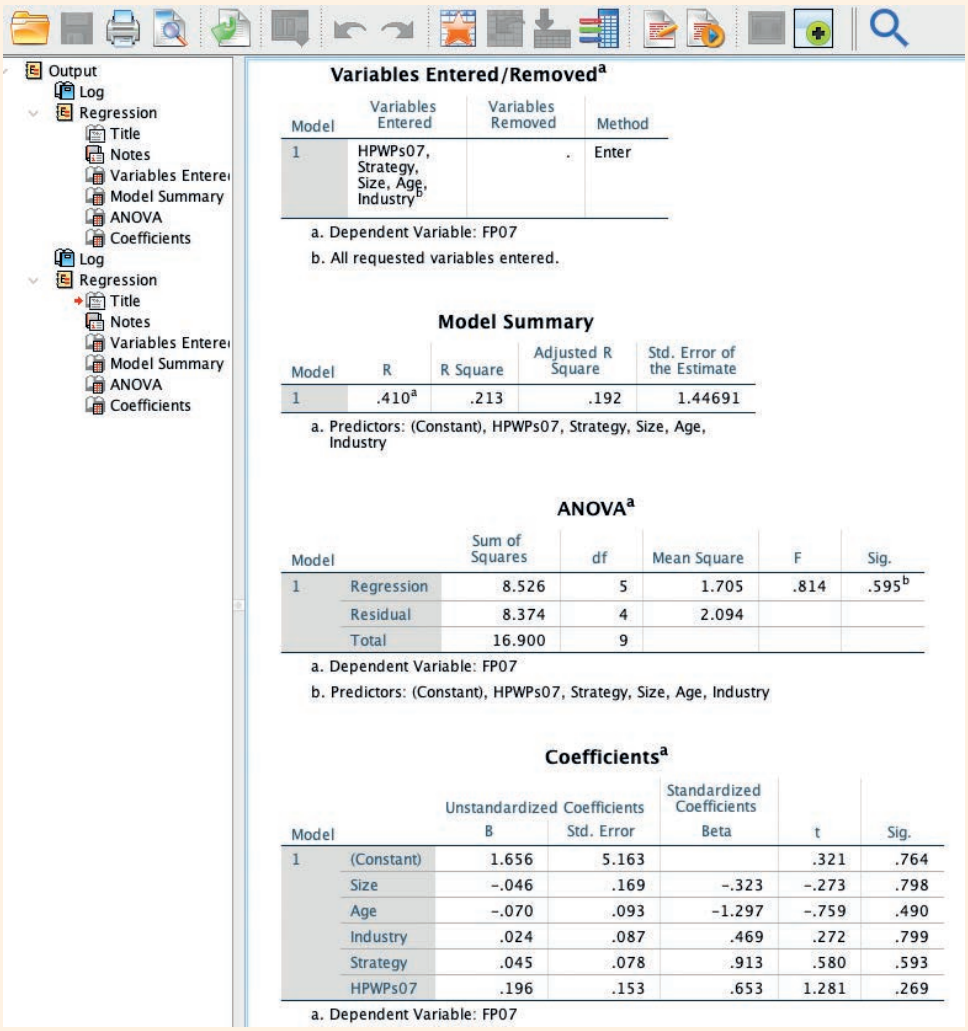
Table C12.3 Correlation analysis assessing the strength of relationship between each of the study variables



			Size	Age	Industry	Strategy	HPWPs07	HPWPs11	FP07	FP11
Spearman's rho	Size	Correlation Coefficient	1.000	.248**	-.152*	.241**	.317**	.321**	.423**	.413**
		Sig. (1-tailed)	.	<.001	.022	.000	.002	.002	.000	.000
	Age	Correlation Coefficient	.250**	1.000	-.193**	.211**	.254**	.282**	.330**	.353**
		Sig. (1-tailed)	.003	.	.010	.002	.002	<.001	.002	.002
	Industry	Correlation Coefficient	-.151*	-.193**	1.000	.110	.112	.108	.107	.108
		Sig. (1-tailed)	.022	.010	.	.165	.143	.071	.143	.054
	Strategy	Correlation Coefficient	.243**	.211**	-.191	1.000	.470**	.510**	.382**	.452**
		Sig. (1-tailed)	.001	.002	.165	.	<.001	<.001	<.001	<.001
	HPWPs07	Correlation Coefficient	.311**	.255**	.112	.476**	1.000	.511**	.623**	.523**
		Sig. (1-tailed)	.002	.002	.143	<.001	.	<.001	.000	.001
	HPWPs11	Correlation Coefficient	.253**	.232**	.113	.513**	.683**	1.000	.621**	.524**
		Sig. (1-tailed)	<.001	<.001	.071	<.001	<.001	.	<.001	<.001
	FP07	Correlation Coefficient	.253**	.201**	.107	.381**	.577**	.623**	1.000	.765**
		Sig. (1-tailed)	.002	.002	.143	<.001	.000	<.001	.	.005
	FP11	Correlation Coefficient	.240**	.218**	-.105	.452**	.516**	.523**	.622**	1.000
		Sig. (1-tailed)	.005	.002	.054	<.001	.005	<.001	.005	.

**. Correlation is significant at the 0.01 level (1-tailed).
*. Correlation is significant at the 0.05 level (1-tailed).

Table C12.4 Multiple regression analysis to test hypothesis H1a while controlling for firm strategy, size, industry, and age



Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	HPWPs07, Strategy, Size, Age, Industry[b]	.	Enter

a. Dependent Variable: FP07

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.410[a]	.213	.192	1.44691

a. Predictors: (Constant), HPWPs07, Strategy, Size, Age, Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.526	5	1.705	.814	.595[b]
	Residual	8.374	4	2.094		
	Total	16.900	9			

a. Dependent Variable: FP07

b. Predictors: (Constant), HPWPs07, Strategy, Size, Age, Industry

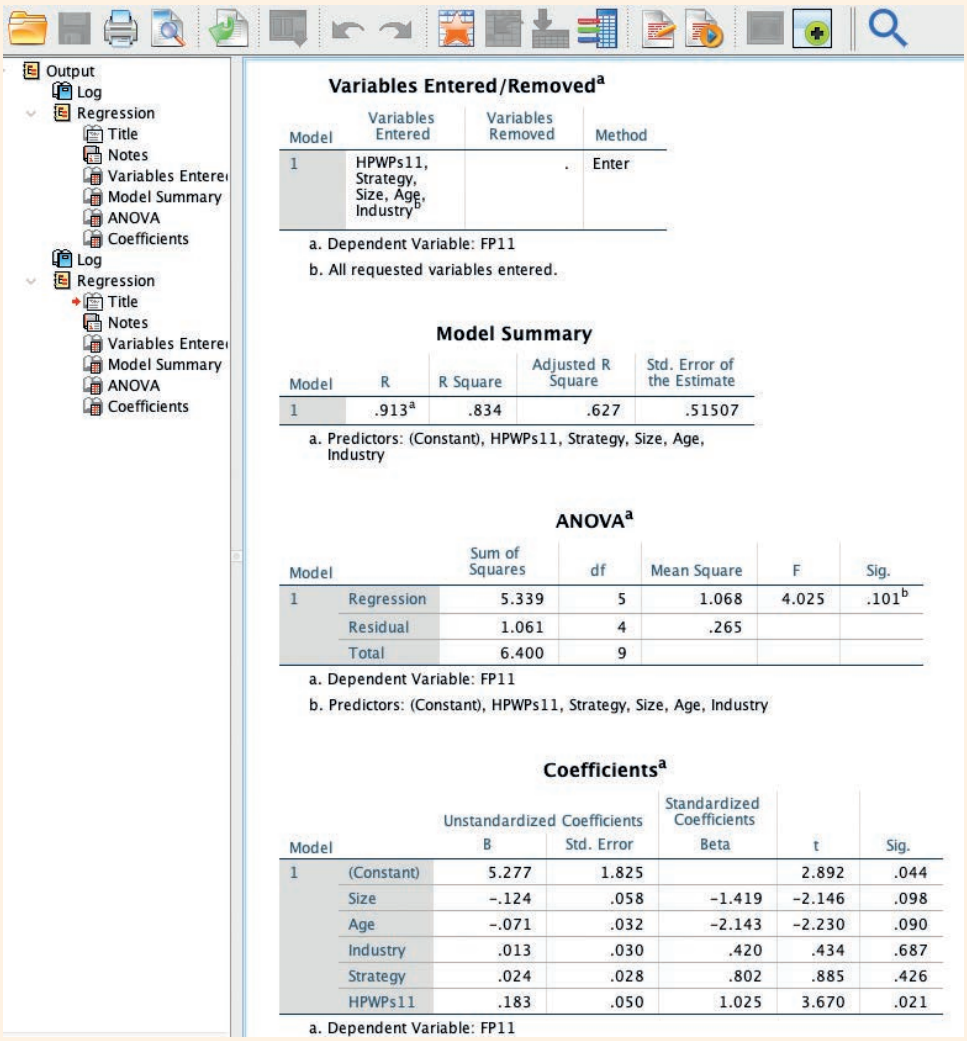
Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.656	5.163		.321	.764
	Size	-.046	.169	-.323	-.273	.798
	Age	-.070	.093	-1.297	-.759	.490
	Industry	.024	.087	.469	.272	.799
	Strategy	.045	.078	.913	.580	.593
	HPWPs07	.196	.153	.653	1.281	.269

a. Dependent Variable: FP07

H1a: There is a positive relationship between the number of HPWPs (at time 1) and subjective financial performance (at time 1).

Table C12.5 Multiple regression analysis to test hypothesis H1b while controlling for firm strategy, size, industry, and age



Output
- Log
- Regression
  - Title
  - Notes
  - Variables Entered
  - Model Summary
  - ANOVA
  - Coefficients
- Log
- Regression
  - Title
  - Notes
  - Variables Entered
  - Model Summary
  - ANOVA
  - Coefficients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	HPWPs11, Strategy, Size, Age, Industry[b]	.	Enter

a. Dependent Variable: FP11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.834	.627	.51507

a. Predictors: (Constant), HPWPs11, Strategy, Size, Age, Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.339	5	1.068	4.025	.101[b]
	Residual	1.061	4	.265		
	Total	6.400	9			

a. Dependent Variable: FP11

b. Predictors: (Constant), HPWPs11, Strategy, Size, Age, Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.277	1.825		2.892	.044
	Size	−.124	.058	−1.419	−2.146	.098
	Age	−.071	.032	−2.143	−2.230	.090
	Industry	.013	.030	.420	.434	.687
	Strategy	.024	.028	.802	.885	.426
	HPWPs11	.183	.050	1.025	3.670	.021

a. Dependent Variable: FP11

H1b: There is a positive relationship between the number of HPWPs (at time 2) and subjective financial performance (at time 2).

References

Guest, D.E. (2011) 'Human resource management and performance: still searching for some answers', *Human Resource Management Journal,* Vol. 21, No. 1, pp. 3–13.

Harney, B. and Alkhalaf, H. (2020) 'A quarter‐century review of HRM in small and medium‐sized enterprises: capturing what we know, exploring where we need to go', *Human Resource Management,* Vol. 60, No. 3, pp. 5–29.

Questions

Before meeting with her project tutor, Freya decides to draft a paragraph interpreting the data in each of her analyses making sure she only uses statistics that are appropriate for the data type.

1 Draft a separate paragraph interpreting the tables and output relating to each of:
   a response rates;
   b descriptive statistics (be sure to select the appropriate statistic for each variable);
   c correlation analysis;
   d multiple regression analysis.

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.



They are:

- The marketing of arts festivals (focussing on coding questionnaire data for quantitative analysis).
- The impact of family ownership on financial performance (focussing on regression analysis).
- Small business owner-managers' skill sets (focussing on descriptive statistics, parametric statistics and non-parametric statistics).
- Food miles, carbon footprints and supply chains (focussing on parametric statistics).
- Predicting work performance (focussing on graphs, descriptive statistics, and hypothesis testing).
- Giving proper attention to risk management controls when using derivatives (focussing on descriptive statistics and non-parametric statistics).

Self-check answers

12.1 a The variables are 'income', 'expenditure' and 'year'. There is no real need for a separate case identifier as the variable 'year' can also fulfil this function. Each case (year) is represented by one row of data.

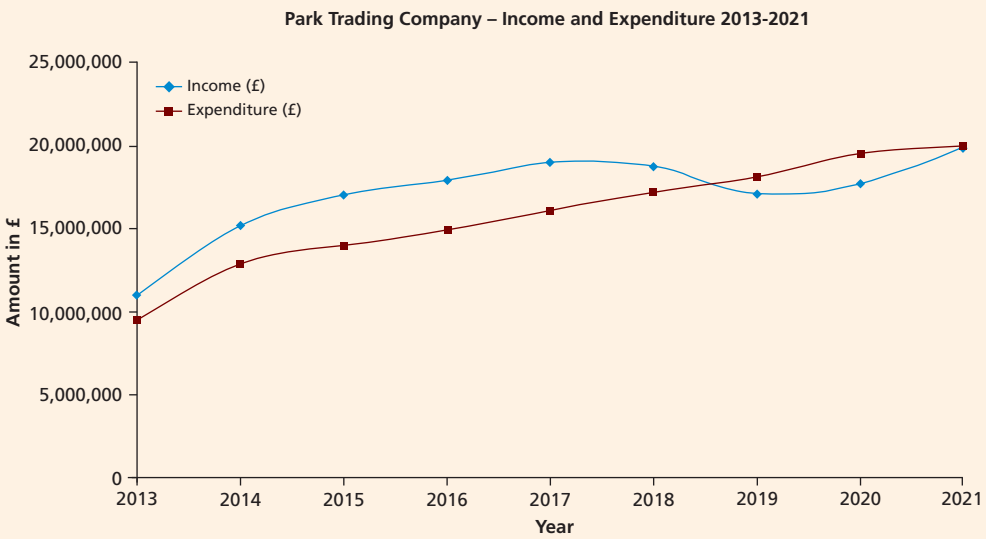
b When the data are entered into a spreadsheet the first column will be the case identifier, for these data the year. Income and expenditure should not be entered with the £ sign as this can be formatted subsequently using the spreadsheet:

	A	B	C
1	***Year***	***Income (£)***	***Expenditure (£)***
2	2013	11000000	9500000
3	2014	15200000	12900000
4	2015	17050000	14000000
5	2016	17900000	14900000
6	2017	19000000	16100000
7	2018	18700000	17200000
8	2019	17100000	18100000
9	2020	17700000	19500000
10	2021	19900000	20000000
11			

12.2 a There is no one correct answer to this question as the number of variables will depend on the method used to code these descriptive data. If you choose the multiple-response method, three variables will be generated. If the multiple-dichotomy method is used, the number of variables will depend on the number of different responses.

b Your first priority is to decide on the level of detail of your intended analyses. Your coding scheme should, if possible, be based on an existing coding scheme. If this is of insufficient detail, then it should be designed to be compatible to allow comparisons. To design the coding scheme, you need to take the responses from the first 50–100 cases and establish broad groupings. These can be subdivided into increasingly specific subgroups until the detail is sufficient for the intended analysis. Codes can then be allocated to these subgroups. If you ensure that similar responses receive adjacent codes, this will make any subsequent grouping easier. The actual responses that correspond to each code should be noted in a codebook. These codes need to include missing data, such as when two or fewer 'things' have been mentioned

12.3 a



b Your diagram (it is hoped) emphasises the upward trends of expenditure and (to a lesser extent) income. It also highlights the conjunction where income falls below expenditure in 2019.

c To emphasise the years with the lowest and highest income, you would probably use a histogram because the data are continuous. A frequency polygon would also be suitable.

12.4 a You would probably use a scatter graph in which number of text message donations would be the dependent variable and number of viewers reached by the advertisement the independent variable.

b This would enable you to see whether there was any relationship between number of viewers reached and number of text message donations.

12.5 a The first thing you need to do is to establish the data type. As it is numerical, you could theoretically use all three measures of central tendency and both the standard deviation and inter-quartile range. However, you would probably calculate the mean and perhaps the median as measures of central tendency and the standard deviation and perhaps the inter-quartile range as measures of dispersion.

b The mean would be chosen because it includes all data values. The median might be chosen to represent the middle income over the 2013–21 period. The mode would be of little use for these data as each year has different income values.

c If you had chosen the mean you would probably choose the standard deviation, as this describes the dispersion of data values around the mean. The inter-quartile range is normally chosen where there are extreme data values that need to be ignored. This is not the case for these data.

12.6 The probability of a chi square value of 2.845 with 9 degrees of freedom occurring by chance alone for these data is 0.970. This means that statistically the interdependence between students' degree programmes and their opinion of the quality of feedback from project tutors is extremely likely to be explained by chance alone. In addition, the assumption of the chi square test that no more than 20 per cent of expected values should be less than 5 has not been satisfied.

To explore this lack of interdependence further, you examine the cell values in relation to the row and column totals. For all programmes, over 80 per cent of respondents thought the quality of feedback from their project tutor was reasonable or good.

12.7 Your answer needs to emphasise that correlation analysis is used to establish whether a change in one variable is accompanied by a change in another. In contrast, regression analysis is used to establish whether a change in a dependent variable is caused by changes in one or more independent variables – in other words, a cause-and-effect relationship. Although it is impossible to list all the examples you might use to illustrate your answer, you should make sure that your examples for regression illustrate a dependent and one or more independent variables.

12.8 **a** These quantitative data are of different magnitudes. Therefore, the most appropriate technique to compare these data is index numbers. The index numbers for the two companies are:

	EJ Investment Holdings	AE Financial Services
Price 6 months ago	100	100.0
Price 4 months ago	120	104.4
Price 2 months ago	130	112.1
Current price	140	117.5

b The price of AE Financial Services' shares has increased by €103 compared with an increase of €4 for EJ Investment Holdings' share price. However, the proportional increase in prices has been greatest for EJ Investment Holdings. Using six months ago as the base period (with a base index number of 100), the index for EJ Investment Holdings' share price is now 140 while the index for AE Financial Services' share price is 117.5.

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- Follow live links to useful websites.

Chapter 13

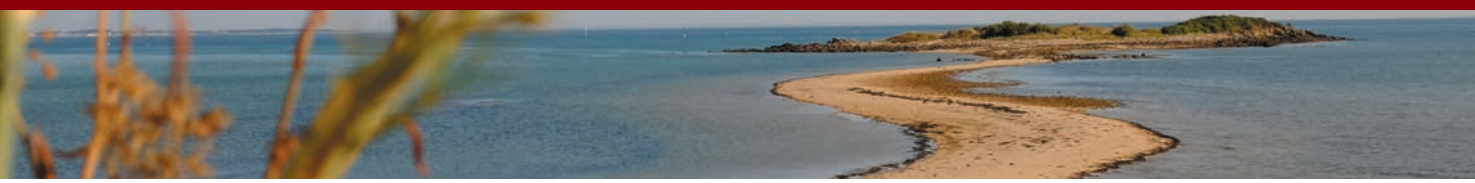


Analysing data qualitatively

Learning outcomes

By the end of this chapter, you should be able to:

- discuss the diversity of qualitative data and the interactive nature of qualitative analysis;
- identify the key aspects to consider when deciding how to analyse data qualitatively;
- describe the main issues when preparing your qualitative data for analysis including using Computer-Aided Qualitative Data Analysis Software (CAQDAS);
- transcribe a recorded interview or notes of an interview or observation and create a data file for analysis by computer;
- choose from different analytical aids to help you to analyse your qualitative data;
- outline Thematic Analysis and Template Analysis as approaches to analysing qualitative data and differentiate between them;
- differentiate between Analytic Induction, deductive explanation building and pattern matching processes;
- explain how Grounded Theory Method can be used;
- discuss different approaches to Narrative Analysis and discourse analysis;
- recall the processes used in visual data analysis;
- identify the common functions of CAQDAS and the issues associated with its use;
- progress your research project by analysing data qualitatively.



13.1 Introduction

This chapter is about analysing qualitative data, that is both primary and secondary data that are derived from spoken, written or printed words and still or moving visual images that have not been quantified. The diversity of such qualitative data and their implications for interactive analyses are discussed in Section 13.2. As you read this chapter you will rediscover the interconnected and interactive nature of qualitative data collection and analysis, and the need to begin to analyse and interpret your data during the collection process.

In Section 13.3 we discuss key aspects of different qualitative analysis techniques to help you to choose an appropriate way of analysing your data. In Section 13.4 we discuss the preparation of your data for analysis, and in Section 13.5 we outline several aids that will help you analyse these data and record your ideas about how to progress your research.

Sections 13.6 to 13.13 outline a range of qualitative analysis techniques, methods, approaches and processes. These are grouped under Thematic Analysis (Section 13.6), Template Analysis (Section 13.7), explanation building and testing (Section 13.8), Grounded Theory Method

Qualitative data analysis and completing a jigsaw puzzle

Nearly all of us have, at some time in our lives, completed a jigsaw puzzle. As children we may have played with jigsaw puzzles and, as we grew older, those we were able to complete became more complex. Qualitative data analysis can be likened to the process of completing a jigsaw puzzle in which the pieces represent data. These pieces of data and the relationships between them help us as researchers to create a picture of what we think the data are telling us!

When trying to complete a jigsaw puzzle, most of us begin by looking at the picture on the lid of our puzzle's box. A puzzle for which there is no picture is usually more challenging as we have no idea how the pieces fit together or what the picture will be! Similarly, we may not be clear about how, or even if, the data we have collected can form a clear picture.

Perhaps you haven't tried to complete a jigsaw puzzle for many years, but you might find the following useful as well as entertaining! Get a friend to give you the contents of a jigsaw in a bag without the box



Source: © Mark Saunders 2018

(since this normally shows the picture of what it is!). Turn all the pieces picture side up. Think about how you will categorise the pieces. What do they mean? You will be likely to group pieces with similar features such as those of a particular colour together. Some pieces can be placed in more than one category such as blue and also green. These pieces are crucial as they give clues to the relationship between pieces. Normally you might then try to fit these similar pieces together to begin to reveal the picture.

Perhaps completing jigsaws reinforces a sense of there being an external reality 'out there', so all we need to do is reveal it! However, for many qualitative researchers, the picture that our pieces of data reveal will depend on our research question and the concepts we use to make sense of what we see!

(Section 13.9), Narrative Analysis (Section 13.10), discourse analysis (Section 13.11), visual analysis (Section 13.12) and data display and analysis (Section 13.13). The use of quotations when reporting the findings of your analysis in your research report is considered in Section 14.3.

A variety of CAQDAS is available, which we consider briefly in Section 13.14. Consequently, although you need to understand which analytical technique, or combination of techniques, is suitable for analysing your data, it may no longer be necessary for you to undertake tasks such as coding your data and developing analytical categories manually. Within this chapter we do not assume you will be using CAQDAS. Although a variety of software packages are available in most universities, and these are helpful for managing and organising data, to support your analysis, they are not analysis programs and make no analytical contribution to your research (Woolf and Silver 2018). Rather the actual process remains thoughtful, reflective and reflexive rather than mechanical. Consequently, using CAQDAS isn't a quick fix, and you still need to perform the associated processes. We therefore focus on these analysis processes, referring to and including screenshots of the NVivo software in some worked examples. These illustrate generic issues associated with analysis rather than implying that you must use such software.

13.2 Analysing qualitative data, diversity and interactive processes

Diversity and analytical implications

Unlike quantitative research where analysis occurs after data collection, qualitative research often involves the concurrent collection, analysis and interpretation of data. These data are diverse comprising spoken words (verbal data), written, typed or printed words (textual data) and still or moving visual images (visual data). **Verbal data** are collected in the form of extended speech, which are passages of spoken words. These may be audio recorded or derived from existing audio or audio-visual sources. These data are likely to be transcribed and turned into text but may still be classified as verbal data if they maintain their structural integrity as a verbatim account (Chapters 8, 9 and 10). **Text data** are collected as notes from interviews or observations, as written diaries and participant accounts (Chapters 9 and 10) or derived from documents including reports, tweets, emails, blogs and the like (Chapter 8). **Visual data** may be created or found in many forms including drawings, digital images and video (Chapters 9 and 10). These data are associated with particular analytical implications, which we consider in Section 13.12.

This diversity of qualitative data arises from the variety of procedures used to obtain it. Many of these involve the collection of data in natural settings, where the researcher observes or interview participants, or asks participants to collect data themselves through audio or video recording, photography, or keeping a research diary. Such naturalistically collected data are often contrasted with contrived data collected through laboratory-based experiments, or questionnaires that do not consider the context within which these are used.

Qualitative data collected in natural settings are likely to be rich in contextual detail. The opportunity to explore issues in interviews, record mundane details during observations or read through participants' detailed accounts in research diaries is likely to produce descriptive and explanatory data that help to facilitate analysis and interpretation. Much of these data will come directly from participants, by recording their words during interviews, detailing their actions during observations, using their written words from diaries, transcribing the audio recordings they create, watching and making notes about the video recordings they make, or looking at the visual images they provide. Through these, you can give participants a 'voice' through which to talk about and record their experiences and perceptions.

This production of highly contextualised data, emphasis on recording participants' interpretations and practice of using participants to collect data each have implications for qualitative analysis. Qualitative data, characterised by their fullness and richness, provide an opportunity for in-depth analysis, where context can be related to the themes that emerge from analysis, to produce well-grounded and contextualised explanations. In this way, a contrast is drawn between the 'thin' abstraction or description that principally results from quantitative data and the 'thick' or 'thorough' abstraction or description associated with qualitative data (Dey 1993).

The philosophical assumptions underpinning a research project will affect its design and conduct, including data collection and analysis. An interpretivist philosophy often informs qualitative research projects (Section 5.3), emphasising participants' interpretations of their social world, reality being seen as being socially constructed (Sections 4.2 and 4.4). As an interpretivist researcher you would, typically, undertake research inductively (Section 4.5), allowing the conduct of the research to follow the flow of the data collected. These data will reflect variations in participants' experiences and perspectives and your analysis will need to recognise and report the breadth of these experiences and perspectives, rather than attempting to reconcile differences and ignore this diversity of viewpoints. Analysis of data collected through an interpretivist approach therefore needs to be sensitive to their variability and complexity to be meaningful. It will involve deriving research-specific concepts from which a conceptual framework may be developed. This framework will be developed initially during data collection and then refined as your analysis progresses. Various techniques to develop this analytical approach are discussed in Sections 13.6 to 13.13.

A realist philosophy can also inform qualitative research projects (Section 5.3). A realist researcher believes reality exists independently from participants' interpretations of it. In other words, an external 'reality' helps to shape participants' interpretations rather than being constructed by them (Sections 4.2 and 4.4). As a realist, critical realist or pragmatist you would use your perspective to inform the design and conduct of your qualitative research. You would, typically, undertake research deductively (Section 4.5), your themes being derived from existing theory. These themes would inform the questions you asked participants, which would need to be asked or applied consistently to produce comparable and valid data to test the applicability of the theory in this research context. Various techniques to develop this analytical approach are discussed in Sections 13.6 to 13.13 excluding 13.9.

Irrespective of your philosophy, the meanings from your data will principally be derived from words and images, not numbers. As these may have multiple as well as unclear meanings, it is necessary to explore and clarify them with great care. Consequently, the quality of your qualitative research depends partly on the interaction between your data collection and data analysis and allowing meanings to be explored and clarified.

Qualitative data collected by participants will also have analytical implications. These data will reflect the experiences and perspectives of those who collect them. They will be characterised by specific meanings that you will need to understand in order to interpret. This may mean using multiple methods during data collection and analysis, such as using a multi-method qualitative study (Section 5.4), where you conduct interviews (Chapter 10) in conjunction with some form of observation (Chapter 9) to explore meanings and produce participant-focused interpretations.

The non-standardised and complex nature of qualitative data has further implications for their analysis. You will be confronted by either a mass of paper, still images, audio and visual recordings or electronic files that you will need to explore, analyse, synthesise and transform to address your research objectives and answer your research question. Most of the analytical techniques discussed later in this chapter will involve you using processes where you summarise some parts of your data to condense them; code and categorise data to group them according to themes that begin to make sense; and then to link these categories and themes in ways that provide you with a structure or structures to answer your research question. Without using such techniques, the most that may result is an impressionistic view of what these qualitative data mean.

Interactive nature

Qualitative analysis is undertaken during and after data collection; the analysis process helping to shape the direction of data collection, especially when following an inductive or grounded approach. Research propositions that emerge from your data in an inductive approach or those you commenced with at the start of your data collection in a deductive approach will be tested as you compare them with the data in your study. The key point here is the relative flexibility that this type of process permits.

The interactive nature of data collection and analysis allows you to recognise important themes, patterns and relationships during data collection: in other words, for these to emerge from the process of data collection and analysis. This means you are likely to need to re-categorise and re-code your existing data to see whether emergent themes, patterns and relationships are present in the cases where you have already collected data. You will also be able to adjust your future data collection to establish whether related data exists in those cases where you intend to conduct your research.

This concurrent process of data collection and analysis has implications for the way in which you manage your time and organise your data and related documentation. It will be necessary to arrange interviews or observations with enough space between them to allow sufficient time to write up or word process a transcript or set of notes, and to undertake a preliminary analysis before proceeding to the next (Section 10.6). You may also be able to find a little time between interviews to carry out a cursory level of analysis. As part of this we have found it extremely helpful to listen to audio recordings of interviews while travelling to and from the university.

There is a clear limit to the value of continuing to undertake interviews or observations without analysing these. There is also a danger of data overload where you just continue to collect data. This will be associated with a lost opportunity to understand what your data reveal in relation to your research question and the directions that might be worth pursuing subsequently as your research progresses. Important ideas that occur to you as

you undertake an interview, conduct an observation, read a document, listen to an audio recording, or view a set of images or a visual-recording may be lost if you do not record these because you are focused only on collecting data.

13.3 Choosing a qualitative analysis technique

Choosing a qualitative analysis technique can be confusing. Choice in qualitative analysis is different to choice in quantitative analysis. Quantitative analysis necessitates specified statistical techniques dependent on the data type and what you are trying to illustrate, describe, examine or predict (Sections 12.5 to 12.13). Choice in qualitative analysis is not necessarily between a 'right' and 'wrong' technique. Some forms of qualitative analysis are not exclusive; in other words, you may have to choose between alternative ways to analyse your qualitative data. This may also mean using two or more complementary techniques to analyse your data, thereby gaining more insights than would be possible from a single technique. You therefore need to understand the nature of different techniques to be able to choose those which offer the possibility of complementary insights.

Aspects that are particularly important in your choice of qualitative analysis techniques relate to:

- the methodological and philosophical basis;
- the approach to theory development;
- the analytical techniques used.

We discuss each of these in turn.

Methodological and philosophical basis

Some qualitative research strategies are associated with a specific or prescriptive methodology. In these the research philosophy, approach to theory development and research practices including analytical techniques are closely defined. Of the research strategies we consider (Section 5.5), Grounded Theory has a specific methodology. To use the Grounded Theory Method you would need to follow each of the elements associated with this approach (Section 13.9). While the specific or prescriptive nature of this type of methodological approach might be considered rigid, it provides you with a clear set of guidelines for your entire research project including the analytical technique.

Other qualitative research strategies are neither so closely specified nor prescriptive. This means you will need to choose an analytical technique that is appropriate for your research philosophy, strategy (Sections 4.4 and 5.8) and the nature of the data you collect. Where, for example, you use an interpretivist philosophy, it will be important to ensure that your choice of analytical technique(s) is compatible with this research philosophy. Here you would need to allow the voices of your participants to emerge through your analysis, and probably include participant quotations in your findings. An analytical technique concentrating on condensing participants' data to display them in a highly reduced and summarised form would be unlikely to be suitable for interpretivist research.

Approach to theory development

Theory is developed using either deductive, inductive or abductive reasoning (Section 4.5). Where you commence your research project using a deductive approach you will use existing theory to inform your data collection and analysis. Where you commence your research

project using an inductive approach you will seek to build a theory that is grounded in your data. Subsequently if, based on a surprising fact, you collected additional data, and to potentially revise or modify an existing theory you would be using an abductive approach. Some qualitative analysis techniques we discuss in Sections 13.6 to 13.13 are specifically associated with either a deductive or inductive approach, while others can be used regardless of your approach to theory development.

Analytical techniques used

Analytical techniques can be differentiated by their:

- use of data fragmentation and reduction versus maintaining data integrity;
- analytical focus.

We discuss each of these in turn.

Data fragmentation and reduction versus maintaining data integrity

In qualitative data analysis, it is generally accepted that to analyse large amounts of non-standardised data it is necessary to fragment these data by coding and reorganising them into analytical categories. This process often involves simplifying or reducing qualitative data by summarising their meanings to be able to comprehend them and undertake further analysis. Such techniques include Thematic Analysis (Section 13.6), Template Analysis (Section 13.7), Grounded Theory Method (Section 13.9) and data display and analysis (Section 13.13).

Where it is important to maintain the integrity of the data by analysing them without using fragmentation and reduction, other alternative techniques can be used. These include Narrative Analysis, where the sequential and chronological nature of storied data are essential to and maintained during analysis (Section 13.10), and discourse analysis (Section 13.11), where analysis relies on the wholeness of data.

Analytical focus

The focus of qualitative analysis techniques can be:

- thematic;
- actions or processes;
- the use of language.

Thematic analysis is seen by some as a generic approach rather than as a specific technique as it is used in various analytical techniques. In practice, there are a number of variants, which can be used as standalone analytical techniques. We refer to one of these as Thematic Analysis, deliberately using capital letters to distinguish it from other variants (Section 13.6). Even if you use another variant we advise you to read this section on Thematic Analysis carefully as it contains helpful insights whichever approach you use. Further standalone variants of thematic analysis include Template Analysis (outlined in Section 13.7) and data display and analysis (considered in Section 13.13). Thematic analysis is also used in some approaches to the Grounded Theory Method (Section 13.9), in Narrative Analysis (Section 13.10), and may be used in analytical induction (Section 13.8), deductive explanation building (Section 13.8) and visual analysis (Section 13.12).

While some approaches in the Grounded Theory Method code data thematically, Charmaz (2014) advocates coding data for actions in order to stay close to meanings in the data and to understand these through the actions or interactions that take place (Section 13.9).



Box 13.1 Checklist

To help you to choose a qualitative analysis technique, or combination of techniques

- ✔ Is your analytical technique linked to a specific or prescriptive methodology? (In this chapter the Grounded Theory Method is linked to such a methodology; all other analytical techniques discussed are not.)
- ✔ Is your analytical technique appropriate for your research strategy and the underpinning research philosophy? (Your research philosophy has implications for both these.)
- ✔ Is your analytical technique(s) appropriate for your approach to theory development? (Some qualitative analysis techniques are associated specifically with either a deductive or inductive approach, while others may be used more flexibly.)
- ✔ Will it be beneficial to fragment your data during analysis or alternatively to maintain the integrity of your data items? (Most qualitative analysis techniques involve fragmentation and reorganisation of data and sometimes their reduction, but some maintain the original form of the data during analysis.)
- ✔ What is the most appropriate analytical focus for foci for your data? (The focus of analysis varies between techniques, most focusing on analysing themes, some focussing on actions or processes and others the use of language.)

Other qualitative analysis techniques consider the use of language in the data. These focus on structural elements to understand the implications of how language is used or how narratives are constructed. We introduce two analytical approaches that focus on the use of language: structural narrative analysis (Section 13.10) and discourse analysis (Section 13.11).

We summarise these aspects as a checklist to help you to choose an appropriate technique, or combination of techniques (Box 13.1).

13.4 Preparing data for analysis

Despite the varied forms of qualitative data, most analyses focus on verbal or text data being converted into word-processed text. Even when we are analysing visual data, our analyses and associated interpretations make considerable use of words. Consequently, to undertake most analyses, you will need to convert your data to word-processed text, check it for accuracy and typographical errors, and plan ahead for your analysis, especially if using CAQDAS software.

Within this, it is important to emphasise the need to make back-up copies of your recordings, transcriptions of both these and your notes to ensure your data are not lost. In this section we focus upon the conversion of qualitative data from oral or handwritten form to word-processed text, as this is the way that you are most likely to use these in your analysis. As part of this, we discuss the general requirements of CAQDAS packages (see Section 13.14).

Transcribing qualitative data

In Chapter 10 we emphasised that, in qualitative research interviews, the interview is often audio recorded and subsequently **transcribed,** that is, reproduced verbatim as a

Table 13.1 Reducing the time needed to transcribe audio recordings

Way	Potential problems
Pay a touch-typist to transcribe your audio recordings	• Expense of paying someone else • Important data such as pauses, coughs, sighs and the like may not be included • Lack of familiarity with the data as you are not transcribing them yourself • Transcription will still require careful checking as errors can creep in
Use a transcription machine with a foot-operated play–pause–rewind–fast forward mechanism and software to control the audio speed	• Although this will allow you to control the audio recorder more easily, the speed of transcription will still be dependent upon your typing ability • Transcription will still require careful checking • May not be able to gain access to a transcription machine
'Dictate' your audio recordings using voice-recognition software	• Need to teach voice-recognition software to recognise your voice • Need to listen to and dictate the entire audio recording • Transcription will still require careful checking as the software is not entirely accurate
Only transcribe sections of each audio recording that are pertinent to your research (**data sampling**)	• Still need to listen to the entire recording carefully first, at least twice • May miss certain things, meaning you will have to go back to the audio recording later • Sections you transcribe will still require careful checking

word-processed account. We also emphasised that, as an interviewer, you would be interested not only in what participants said, but in the way they said it as well. This means that the task of transcribing audio recorded interviews is likely to be time-consuming as you will need not only to record exactly what was said and by whom, but also try to give an indication of the tone in which it was said and the participants' non-verbal communication using transcription notation (Table 13.2). Without this additional contextual information, important incidents that affect the conduct of your interview or observation may be missed (Boxes 10.12 and 13.4). You also need to ensure it can be linked to the contextual information that locates the interview (Section 10.7).

Even if you are a touch-typist, you will find transcribing an audio recording extremely time-consuming. Most research methods texts suggest that it takes a touch-typist between 6 and 10 hours to transcribe every hour of audio recording. Consequently, it is helpful if your interviews are transcribed as soon as possible after they are undertaken to avoid a build-up of audio recordings and associated transcription work. Fortunately, there are several possible ways of reducing the vast amount of personal time needed to transcribe interviews verbatim. These are summarised in Table 13.1 along with some of the potential problems. One aspect, however you choose to transcribe the data, is making sure that the transcription is accurate by correcting any transcription errors. This process is known as **data cleaning**. Once this has been done, some researchers send a copy of the transcript to the participant for final checking. While this can be helpful for ensuring factual accuracy, we have found that interviewees often want to correct their own grammar and use of language as well! This is because spoken and written language are very different. You therefore need to think carefully before offering to provide a copy of a complete transcript to an interviewee.

Table 13.2 Commonly used Jefferson transcription symbols

Symbol	Meaning
(.)	Notable pause, but not a significant length
(0.3)	Timed pause, number denotes time in seconds
[ ]	Onset and off set of overlapping utterances
> <	Pace of speech quicker within brackets
< >	Pace of utterance slower within brackets
( )	Something is being said, but words spoken too unclear to transcribe
(word)	Uncertainty of what was said, but a likely possibility
(( ))	Transcriber's description of what is happening, e.g. ((coughs))
_____	Underlining of word or words denotes an increase in volume or emphasis
CAPITALS	Using capitals denotes shouting
↑	Rise in intonation
↓	Fall in intonation
::	Prolongation of the previous sound
(h)	Laughter (humour) within the utterance

Sources: Developed from Silverman (2013), University of Leicester (n.d.)

When transcribing interviews and group interviews, you need to be able to distinguish between the interviewer and the participant or participants. This means you need to have clear speaker identifiers such as '17FA' for the 17th interviewee who is a female administrator. This tends to be more visible in the transcript if they are in capitals (Box 13.2). Similarly, you need to be able to distinguish between topic headings you use, questions and responses. One way of doing this, dependent upon the precise requirements of your CAQDAS, is to put topic headings in CAPITALS, questions in *italics* and responses in normal font. The most important thing is to be consistent within and across all your transcriptions. Some authors also recommend the use of specific transcription symbols to record intakes of breath, overlapping talk and changes in intonation, a widely used form being the Jefferson system that captures both what was said, and the way in which it is said (Table 13.2). This helps you derive meanings from the words and the way they are uttered when placed within an interactional sequence (Reissner and Whittle 2021).

In a transcription of a more structured interview, you also need to include the question number and the question in your transcription. For example, by including the question number 'Q27' at the start of the question you will be able to search for and find question 27 quickly. In addition, by having the full question in your transcript you will be far less likely to misinterpret the question your respondent is answering.



Box 13.2 Focus on student research

Extract from an interview transcript

Michael had decided to use the code IV to represent himself in the transcripts of his in-depth interviews and 01FS to represent his first interviewee, a female student. By using capital letters to identify both himself and the interviewee Michael could identify clearly where questions and responses started. In addition, it reduced the chance of a mistype in the transcription as identifiers were always a combination of capital letters and numbers. Michael used transcription symbols such as '(.)' to represent a brief pause and (h) to represent a laugh. He also included brief comments relating to a respondent's actions in the interview transcript. These he enclosed with double parentheses (()). A brief extract from a transcript follows:

> IV: So tell me, why do you use the Student Union Bar?
>
> 01FS: Well,((in-breath)) (..), a lot of my friends go there for the final drink of the evening (0.3) there is an atmosphere and the drinks are cheap. I don't feel embarrassed to walk in on my own and there's always someone to talk to and scrounge a fag off (h).

Naming datafiles

Each interview you transcribe should be saved as a separate word-processed file. As part of this we recommend using a filename that maintains confidentiality and preserves anonymity, can easily be recognised, and which codifies important information. When doing this Mark always starts his transcription filenames with the interview number and saves the word-processed transcripts for each research project in a password protected separate subdirectory. Subsequent parts of the filename provide more detail. Thus the file '26MPOrg1.docx' is the transcript of the **26**th interview, **M**ale, **P**rofessional, undertaken at **Org**anisation**1.** As some CAQDAS programs require filenames of eight or fewer characters, you may need to limit your filenames to this length.

Using electronic text data including scanned documents and automatic transcription

For some forms of text data such as, for example, email interviews or electronic versions of documents, including organisational emails, blogs and web-based reports, your data will already be in electronic format. Although these data have already been captured electronically, you are still likely to need to spend some time preparing them for analysis. This is likely to involve you in ensuring that these data are:

- suitably anonymised, such as by using separate codes for yourself and each participant;
- appropriately stored for analysis, for example one file for each interview, each meeting's minutes or each organisational policy;
- free of typographical errors and, where these have occurred, they have been 'cleaned';
- free of other errors such as parts of speech being incorrectly recognised by automatic transcription.

Box 13.3 Checklist

Transcribing interviews

- ✔ Have you thought about how you intend to analyse your data and made sure that your transcription will facilitate this?
- ✔ Have you chosen clear interviewer and participant identifiers and used them consistently?
- ✔ Have you included the interview questions in full in your transcription?
- ✔ Have you saved your transcribed data using a separate file for each interview?
- ✔ Does your filename maintain confidentiality and preserve anonymity while still allowing you to recognise important information easily?
- ✔ Have you ensured your data files maintain confidentiality and preserve anonymity?
- ✔ Have you checked your transcript for accuracy and, where necessary, 'cleaned up' the data?
- ✔ (If you intend to use CAQDAS) Will the package you are going to use help you to manage and analyse your data effectively? In other words, will it do what you need it to do?
- ✔ (If you intend to use CAQDAS) Are your saved transcriptions compatible with the CAQDAS package you intend to use, so you will not lose any features from your word-processed document when you import the data?
- ✔ (If you intend to use CAQDAS) Have you checked your transcript for accuracy and 'cleaned up' the data *prior* to importing into your chosen CAQDAS package?
- ✔ Have you stored a separate backup or security copy of each data file, for example on your phone?

Planning for analysis

When transcribing audio recordings or your own notes you need to consider how you intend to analyse your transcriptions. If you only have access to a black and white printer, there is little point in using different coloured fonts to distinguish between participants in a group interview or to distinguish non-verbal responses such as nervous laughter in your transcripts as these will be difficult to discern when working from the paper copies.

You also need to be careful about using these and other word-processing software features if you are going to analyse the data using CAQDAS. These programs often have precise file formats, which can mean that word-processing software features such as *bold* and *italics* generated by your word-processing software will disappear when your data file is imported (Silver and Lewins 2014). For example, although you may transcribe your interviews using a word processor such as Microsoft Word, your chosen CAQDAS package may require this textual data to be saved as a text-only file (.txt) or using rich text format (.rtf), resulting in the loss of some of these features. These along with other aspects of transcribing interviews are summarised as a checklist in Box 13.3.

13.5 Aids to help analysis

Your earlier recording of contextual information about the interviews or observations that you conduct (Section 10.5) will also help you to recall the circumstances and context of each as well as informing your interpretation. Various researchers have suggested ways of

recording information and developing reflective ideas to supplement your written notes or transcripts as you analyse your data (e.g. Brinkmann and Kvale 2015). These include:

- interim or progress summaries;
- transcript summaries;
- document summaries;
- self-memos;
- research notebook;
- reflective diary or journal.

The way you use these analytical aids will be dependent on your preferred approach to recording your ideas and reflections, and the context of your research. Where you produce transcripts of interviews or observations, it will be helpful to write a transcript summary for each one; similarly where you use documents, it will be helpful to write document summaries. Your university may require you to keep a reflective diary, and you may also find it helpful to write interim summaries, self-memos or keep a research notebook.

Interim or progress summaries

As your analysis progresses it is helpful to write an **interim summary** after one or a set of related interviews or observations or period of using secondary data. In this your summaries will show the development of your thoughts and aid your analysis and the direction of your subsequent data collection. Alternatively, your interim summary may become a working document that you add to and modify as your research project progresses. An interim summary may include:

- what you have found so far;
- how much confidence you have in your findings and explanations to date;
- what you intend to do to improve the quality of your data and/or to seek to substantiate your apparent explanations or to seek alternative explanations;

Transcript summaries

After you have written up your notes, or produced the transcript of an interview or observation, you can also produce a summary of the key points that have emerged. A **transcript summary** compresses long statements into briefer ones, the main sense of what has been said or observed being paraphrased into in fewer words. Through summarising you will become conversant with the principal themes emerging. You may be able to identify and note possible relationships between themes so that you can return to these to seek to establish their wider credibility. It will also be useful to include some contextual information about the person(s) you interviewed or observed, the setting in which this occurred and whether anything occurred during the interview or observation which might have affected the nature of the data that you collected (Boxes 10.5, 13.4). Once you have produced a summary of the key points that emerge from the interview or observation and its context, you can attach a copy to the file of your written-up notes or transcript for further reference.

Document summaries

Where you use any sort of document, it is helpful to produce a **document summary**. This can be used to summarise and list the document's key points for your research, outline how it relates to your work and why it is significant. As your research progresses, there is



Box 13.4 Focus on student research

Noting an event that affected the nature of data collection

Birjit was the moderator for a focus group whose participants were the customers of a large department store. Approximately halfway through the allotted time, an additional participant joined the group. This person almost immediately took control of the discussion, two other participants appearing to become reticent and withdrawing from the discussion. Despite this, all Birjit's questions were answered fully, and she felt the data she had obtained was valuable. However, she recorded the point at which the new participant joined the group in a post-transcript summary in case any divergence was apparent between the nature of the data in the two parts of the focus group.

a likelihood that you will forget some of your thoughts about your previous data collection and analysis, so that a document summary, like other analytical aids discussed in this sub-section, will act as a reminder of your earlier ideas.

Self-memos

Self-memos allow you to record ideas about any aspect of your research, as you think of them. Where you omit to record an idea as it occurs to you it may well be forgotten. The occasions when you are likely to want to write a memo include:

- when you are writing up interview or observation notes, or producing a transcript;
- when you are coding and categorising data;
- as you continue to categorise, analyse and interpret these data;
- when you are constructing a narrative;
- when you are writing up your research project.

Most CAQDAS programs include a self-memoing tool for adding comments or write memos as you are analysing your data (Silver and Lewins 2014). This dates self-memos automatically so you can also trace the development of your ideas.

Ideas may also occur during an interview or observation. In this case you may record the idea briefly as a margin or scratch note and write it as a memo to yourself after the event. Similarly, ideas may occur as you work through a documentary source or create a research diary entry. We suggest you use your phone or carry a notebook to record your ideas, whenever and wherever they occur.

Self-memos may vary in length from a few words to one or more pages. They can be written as simple notes and do not need to be set out formally. It is useful to date them and include cross-references to appropriate places in your written-up notes or transcripts, where appropriate. Alternatively, an idea that is not grounded in any data (which may nevertheless prove to be useful) should be recorded as such. Self-memos should be filed together and where appropriate they should be linked to specific data. Memos may also be categorised and can help you in the later stages of your analysis. They may also be updated as your research progresses, so your bank of ideas continues to have currency and relevance.

Research notebook

An alternative approach for recording your ideas about your research is to keep a **research notebook**. You may keep such a notebook alongside the creation of self-memos. Its purpose

will be similar; to record your ideas and reflections, and act as an aide-mémoire about your intentions for the direction of your research. Using a chronological format may help you to identify the development of certain ideas (such as data categories, propositions or hypotheses) and the way in which your research has progressed.

Reflective diary or journal

In Section 1.5 we recommended you also keep a reflective diary or journal about your experiences of undertaking research, what you have learnt from these experiences, how you will seek to apply this learning and what you need to do to develop your competence further. Reflection occurs in several ways. It can occur during an event, as you reflect on your approach while you are conducting an activity such as when interviewing or observing. Reflection may also occur after an activity has taken place as you consider on what occurred and how you might be able to do better next time. A more fundamental type of reflection, known as reflexivity, involves you in monitoring and reflecting on all aspects of the research project from initial ideas to submission of the project report. It includes recognition of the relational, cultural and political practices associated with interviewing, the implications of these, and to report variations between interview account (Reissner and Whittle 2021). Your reactions, your interactions with those taking part and your attitudes and beliefs may each impact on your interpretation of the data that are shared with you. Engaging in forms of reflexivity may enable you to develop greater insights as you explore and analyse these data. Developing a reflexive focus in your reflective diary may therefore prove to be a valuable aid to further your research (Section 1.5).

13.6 Thematic Analysis

Overview

Thematic Analysis is often considered a general analytic approach or method in which patterns of meaning are developed through processes of coding (Braun and Clarke 2006; 2022). The process is found in other approaches to qualitative analysis, albeit in more particularised ways, as we outline in subsequent sections. The essential purpose is to search for themes, or patterns, that occur across a data set (such as a series of interviews, observations, documents or diaries). Thematic Analysis involves you coding your qualitative data to identify themes or patterns for further analysis, related to you research question.

Thematic Analysis offers a systematic yet flexible and accessible approach to analyse qualitative data (Braun and Clarke 2022). It is systematic as it provides an orderly and logical way to analyse qualitative data, leading to rich descriptions, explanations and theorising. Thematic Analysis can be used to help you:

1. comprehend often large and disparate amounts of qualitative data;
2. integrate related data drawn from different transcripts and notes;
3. identify key themes or patterns from a data set for further exploration;
4. produce a thematic description of these data; and/or
5. develop and test explanations and theories based on apparent thematic patterns or relationships;
6. draw and verify conclusions.

Thematic Analysis is flexible as it is not tied to a particular research philosophy. You may use Thematic Analysis irrespective of whether you are adopting an objectivist or subjectivist position (Section 4.2). Your assumptions will, however, affect how you use it to interpret your data. As a critical realist you may use Thematic Analysis to seek to understand factors underpinning human attitudes and actions. Alternatively, as an interpretivist you may use it to explore different interpretations of a phenomenon.

Thematic Analysis can be used irrespective of your approach to theory development. In a deductive approach, the themes you wish to examine are linked to existing theory. Your research question is also more likely to be firmly established and this and your research objectives may be used to derive the themes through which to examine your data. This may lead you to focus on parts of your data set rather than seek to analyse it all.

In an inductive approach, your themes will be derived from the data. You will search the entire data set for themes to explore related to your research interest but will not impose a framework of themes to examine your data set based on existing theory. Depending on which themes emerge and reoccur in an inductive approach, you may also modify your research question. You may also use an abductive approach, either commencing analysis with theoretically derived themes that you then modify or add to as you explore your data or using existing theories to structure inductively identified concepts (Bishop et al. 2020).

Process

The nature and flexibility of Thematic Analysis mean that it is comparatively straightforward. Where you use Thematic Analysis, your energy can be invested in making sure your analysis is rigorous, rather than spending lots of time checking you are applying a more particularised approach to qualitative analysis according to strict rules advocated for its use. In practice, this procedure is neither simple nor linear. Rather, it is concurrent and recursive, involving you analysing data as you collect them and going back over earlier data and analysis as you refine the way in which you code and categorise newly collected data and search for analytical themes.

Thematic analysis involves six phases:

- data familiarisation;
- data coding;
- initial theme generation;
- theme development and review;
- theme refining, defining, and naming;
- (writing up).

Data familiarisation

You will start to become familiar with your data as you produce transcripts of the interviews or observations you conduct, or as you read through documents or diaries or review visual images. The act of transcribing a data item yourself, although laborious, allows you to develop familiarity. It should also prompt you to generate summaries, self-memos or entries in your notebook that aid your analysis.

Familiarisation with your data involves a process of immersion that continues throughout your research project. You will need to read and re-read your data during your analysis. You will be interested to look for meanings, recurring themes and patterns in your data.

Without familiarity, you will not be able to engage in the analytical procedures that follow. Producing transcripts and data familiarisation are therefore important elements in analysing data.

Data coding

Coding is used to categorise data with similar meanings. **Coding** involves labelling each unit of data within a data item (such as a transcript or document) with a code that symbolises or summarises that extract's meaning. Your purpose in undertaking this process is to make each piece of data in which you are interested accessible for further analysis (Boxes 13.5 and 13.6). Qualitative data sets are frequently large and their content complex. A qualitative data set may include references to actions, behaviours, beliefs, conditions, events, ideas, interactions, outcomes, policies, relationships, strategies, etc. Without coding these data you may struggle to comprehend all the meanings in your data in which you are interested. Coding is therefore an important means to manage your data so that you can rearrange and retrieve them under relevant codes. This process effectively involves fragmenting your original data items and regrouping units of data with similar meanings together to be able to examine them in relation to other groups of similar units of data.

A **code** is a single word or a short phrase, which may also be abbreviated in use (Boxes 13.5 and 13.6). A coded extract of data is referred to as a unit of data. A **unit of data** may be a number of words, a line of a transcript, a sentence, a number of sentences, a complete paragraph, other chunk of textual data or visual image that had one or more codes attached to it (Boxes 13.5 and 13.6). The exact size of a unit of data will be determined by its meaning. Some units of data will overlap, and some will be coded using more than one code (Box 13.5).

The process of coding allows you to link units of data that refer to the same aspect or meaning, or to link aspects or meanings that you want to compare and contrast. It allows you to rearrange your original data into groupings for the next stage of analysis. Any unit of data may be coded with as many different codes as you think is appropriate, creating a web of connections to aid your analysis (Boxes 13.5 and 13.6). It is often important to understand the context of the data you are analysing. Where it is important to include some contextual background, you can code larger units of data such as whole paragraphs, as opposed to smaller units such as a few words or single sentences. You should also note that codes may be referred to as categories: these terms are sometimes used interchangeably and sometimes to refer to different aspects of the analytical process – see the next sub-section.

If you think that a new piece of data has a similar meaning to a previously coded unit of data, it should be labelled with the same code. If you think that a new piece of data does not have a similar meaning to a previously coded unit of data, you will need to devise a new code for it. Throughout the process of coding you need to keep a list of codes you are using and a working definition for each, to ensure consistency.

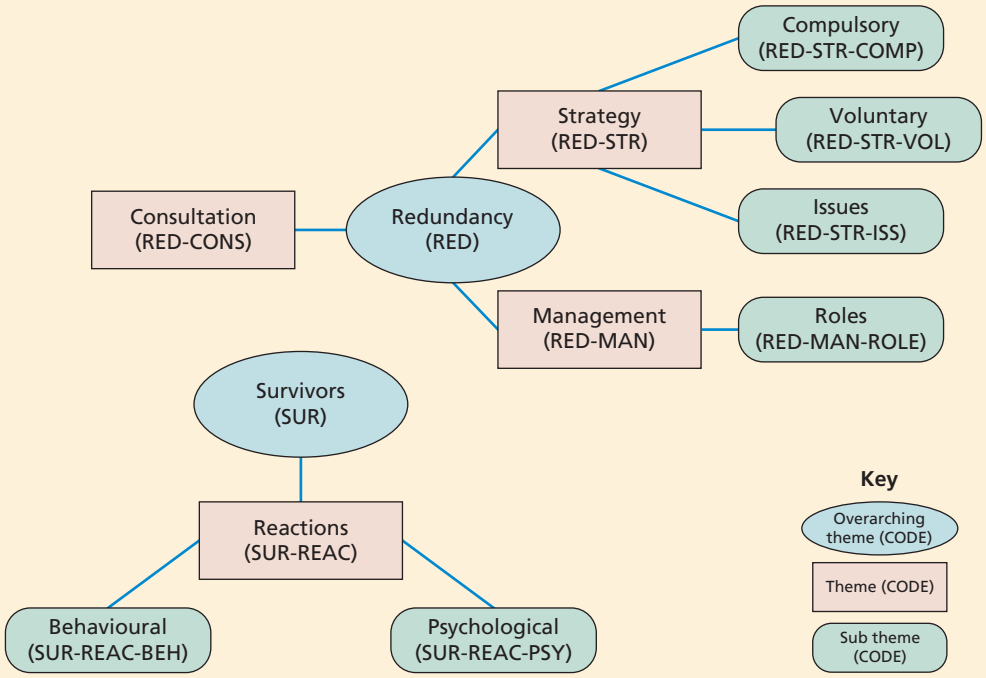
At this point you may be asking two questions. How much of my data should I code – all or only some of it? Where should my codes come from? Both of these questions are related to your approach to theory development and your research question – whether you are setting out to use an inductive or deductive approach and how well you have defined your research question. We answer each of these questions in turn.

How much of your data you code will depend upon your research approach and research question. Where you use a purely deductive approach, you will commence with a framework of codes derived from prior conceptual or theoretical work. In this case you are likely to commence coding by applying theoretically codes to your data and developing an initial thematic map of how you think the codes relate. This is where you start

Box 13.5 Focus on student research

Coding an interview deductively using a priori codes

Adrian's research project was concerned with how human resource management professionals managed a downsizing process in their own organisations and the impact on surviving employees. He derived initial codes from existing theory in the academic literature and constructed an initial thematic map. He attached his most detail level codes (sub themes) to appropriate units of data in each transcript. His coding was hierarchical, the codes he used being shown in brackets in the thematic map. These were then attached to the interview transcript, using sentences as units of data. Like our jigsaw example at the start of this chapter, those units of data that were coded with more than one category suggested interrelationships. (Later when he wrote his methodology chapter, Adrian included a copy of his finalised thematic map.)



Adrian's initial thematic map

CODE	TRANSCRIPT	LINE
RED–CONS	27MM The first stage is to find out what particular employees	1
	want for themselves and how they want this to happen. Staff are	2
	seen by their line manager and/or a member of personnel.	3
RED–MGT–ROLE	Employees might want to talk to someone from personnel rather	4
	than talk with their line manager – well, you know, for obvious	5
	reasons, at least as they see it – and this would be acceptable to the	6
RED–STR–VOL	organisation. This meeting provides them with the opportunity to	7



Box 13.5 Focus on student research (*continued*)

Coding an interview deductively using a priori codes

CODE	TRANSCRIPT	LINE
	opt for voluntary redundancy. We do not categorise employees	8
RED–STR–ISS	into anything like core or non-core, although we will tell a group	9
RED–CONS	of employees something like 'there are four of you in this	10
	particular function and we only need two of you, so you think	1
RED–CONS	about what should happen'. Sometimes when we attempt to give	2
	employees a choice about who might leave, they actually ask us to	3
	make the choice. This is one such situation where a compulsory	4
RED–STR–COM	selection will occur. We prefer to avoid this compulsory selection	5
SUR–REAC–PSY	because of the impact on those who survive – negative feelings,	6
	guilt and so on.	7

thinking about the relationship between the overarching themes, themes, and sub themes. Once you have a set of themes and sub themes, you will begin to see the significance of individual themes. You will then review and refine these and produce your first thematic map (Box 13.5). These themes are subsequently reviewed, refined and, eventually, clearly defined by comparing them with the data. A final thematic map is then produced, which can be included in the methodology of your project report.

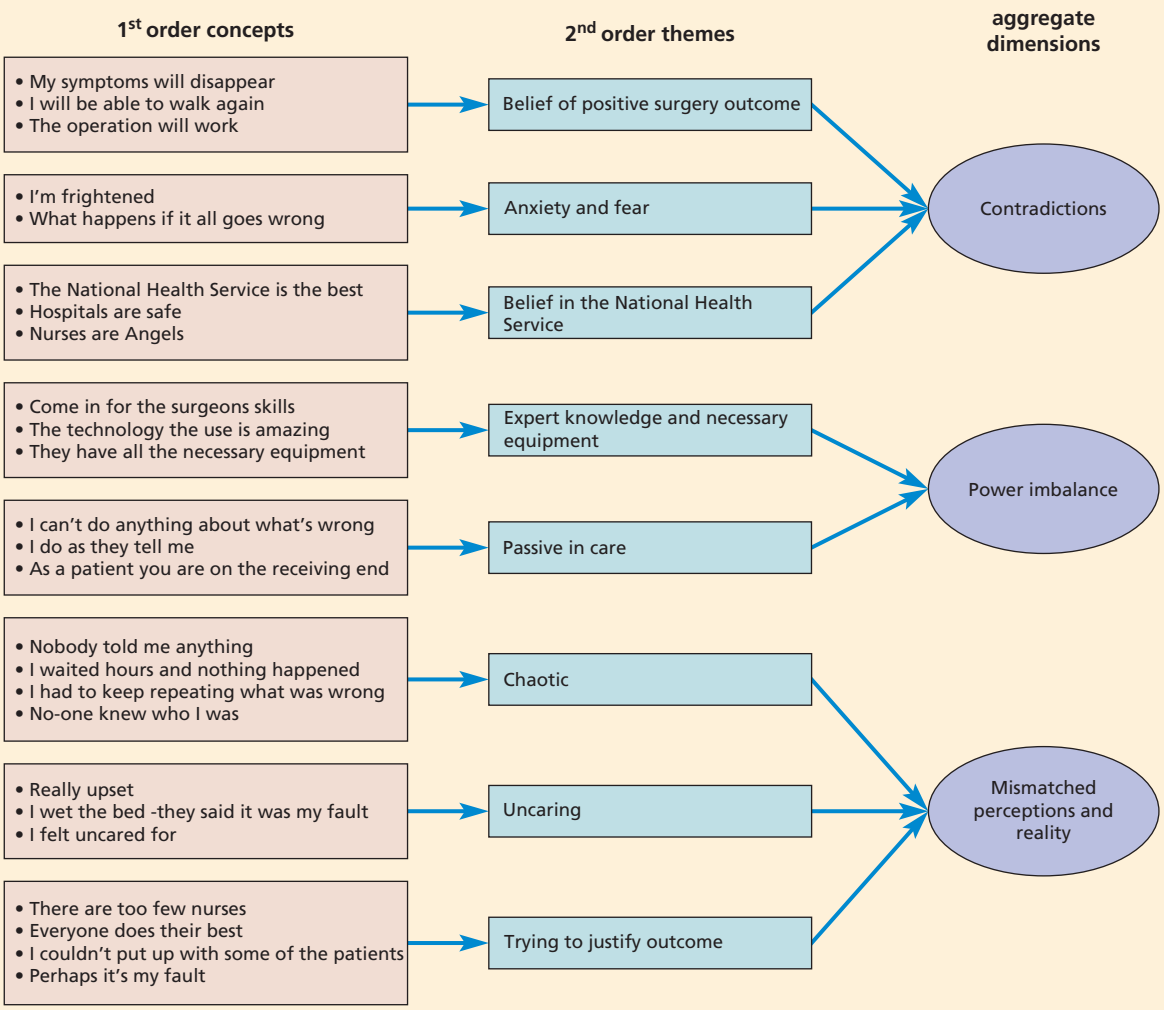
Where you use a purely inductive approach you will be likely to code all your data, as you explore all possible meanings to guide the direction of your research. If you are following the Gioia methodology (Gioia et al. 2012) you will start by coding at the most detailed level, identifying first order concepts from the data and coding them using data-centric terms. As your analysis progresses you will start to see similarities and differences between these concepts allowing them to be grouped into more abstract second order themes. You will now be asking yourself whether these emerging themes help you understand and explain what you are observing. Once you have a workable set of concepts and themes you then try and distil these even further into a smaller number of aggregate dimensions and can build a data structure (Box 13.6). In a similar way to a thematic map, your data structure not only helps you to configure your data but also, when included in your methodology, provides a graphical representation of how you moved from your data to themes helping you demonstrate rigour in your research.

A purely inductive approach may mean that you spend a great deal of time coding every possible unit of data before you decide on a particular research focus. Using a purely inductive approach is appropriate for a very exploratory study but you would need to ensure that

Box 13.6 Focus on student research

Coding an interview inductively

Carole was interested why patients who were in hospital for elective surgery trusted their doctors and nurses. Having received ethical approval from the hospital where she worked, she interviewed 14 patients before and after their hospital stay using face to face semi-structured interviews and fully transcribed her audio recordings. Reading and re-reading her transcripts she identified first order concepts labelling them using the participants' own words (in-vivo codes). These she grouped into themes iteratively, constantly comparing patients' accounts to select and reduce the data to a core set of second order themes. She then looked for evidence of explanations in her data, these becoming her aggregate themes. She summarised these as a data structure diagram in her research project.



you have ample time to conduct it, perhaps related to a major research project. Where you use an inductive approach and have defined a research question, you should be able to use this question to help select which data to code. In this case, while all your data may be potentially interesting, your research question will help you focus on which data to code. Using a purely deductive approach may lead you to conclude that your list of prior codes is inadequate and that you need to devise other codes to be able to code your data adequately to begin to answer your research question and address your research objectives.

This discussion indicates where your codes may come from. There are three main sources of codes, which dependent on your approach to theory development can be used on their own or in combination. Codes may be:

- actual terms used by your participants, recorded in your data. These are often referred to as 'in vivo' codes;
- labels you develop from your data (Box 13.7);
- derived from existing theory and the literature. These are often referred to as 'a priori' codes.

These sources of codes are shown in Figure 13.1 to illustrate their relationship.

Your approach to coding will be guided your research question and objectives. Another researcher with different objectives might derive different codes from the same data. You will be likely to develop new codes as you conduct more interviews or observations and expand your data set. You will also be likely to gain new insights about the utility of existing codes, that suggest possible amendments alongside new codes during the process of analysis. This will require you to re-read all your earlier transcripts and re-code them according to your current list of codes. This process is termed constant comparison and is undertaken to ensure consistency in the way you code and analyse your data set.

Your codes will indicate the occurrence or non-occurrence of a theme and the strength of opinion in some instances. Some codes may be attached to a large number of units of data, proving too broad for further analysis without being subdivided. For example, a research project where some codes (themes) had large amounts of data attached to them, while others attracted relatively small amounts of data. This can lead to the large codes being subdivided into further codes (sub-themes) during the analysis (Box 13.5). Codes attracting small numbers of units of data may be merged with similar ones or retained until later in the process of analysis in case they prove to be more important than they appear initially.

You may use CAQDAS to help you to code your data (Section 13.14) or you may use a manual approach (Box 13.7). Where you use a manual approach, you can label a unit of data with the appropriate code (or codes) in the margin of your transcript or set of notes

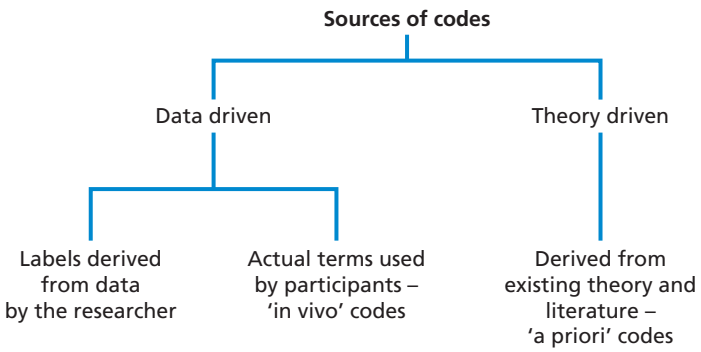


Figure 13.1 Sources and types of code



Box 13.7 Focus on management research

Inductively coding diary entries

Hjálmsdóttir and Bjarnadóttir's (2021) research explores the gendered realities of work–life balance during the Covid-19 pandemic. In particular, they consider the how the changes brought about by the pandemic reflected and affected the gendered division of unpaid labour including childcare and household chores.

In their paper they analyse the open diary entries from 37 mothers who were in heteronormative relationships, in which their participants kept old-style diary entries. While writing these, they were asked to reflect on their day, the impact of Covid-19 on their life, the division of household duties and responsibilities, and other aspects they wished to include.

Their written reflections were analysed drawing on Braun and Clarke's (2006) thematic analysis. Both authors sorted the diary text by date and participant and read it several times, adding notes and then discussing the diaries' content with each other. Initial coding of each diary entry was open and undertaken inductively, focussing on the participants' experiences as recorded. The authors then collated similar codes and associated text segments to look for and identify repeated patterns of meaning within the data. This generated two main themes:

- complexities of work life balance in COVID-19 times including particularly gendered interactions of mental work, stress, and work-life balance;
- emotional labour performed by women including how conscious they were of family members' wellbeing.

(Box 13.6). Text with the same or similar codes can then be copied and collated to identify repeated patterns. When doing this, it is essential to label each unit of data carefully so that you know its precise source. An alternative is to index each segment by recording precisely where they occur in your transcripts or notes (e.g. interview 7, page 2, line 16) on cards headed with particular codes. This has the effect of reducing and rearranging your data into a more manageable and comprehensible form. In undertaking this stage of the analytic process, you are engaging in a selective process, guided by the aim of your research and your research objectives.

Theme generation, development and review

Although seen as two distinct stages of analysis, in practice you will be searching for themes, developing them and reviewing the as you collect and code data. Your progress summaries, transcript summaries, document summaries, self-memos and/or entries in your research notebook and reflective diary will help you to record your ideas about potential themes, patterns and relationships in your data. A **theme** is a broad category incorporating several codes that appear to be related and indicate an idea that is important to your research question. A theme may also be a single code indicating an idea of general importance to your research question. Searching for themes condenses your coded data by grouping these with similar codes into analytic categories.

The search for themes begins fully when you have coded all your data. At this point you will have created a long list of codes to make sense of and draw meaning from your data. Advice about the number of codes varies considerably. Some suggest working with up to 30 codes, while others suggest creating as many codes as you require to interpret every relevant meaning in your data. This may mean creating up to a couple of hundred codes, or possibly more. Our view is that data should not be constrained by a particular number of codes. Rather, your number of codes will be related to the meanings you wish to explore

in your data set, the nature of your research approach and the focus of your research question. However, if you find yourself creating very large numbers of codes you will need to consider whether your coding is too detailed. Always refer back to your research question, research aim and research objectives to focus your approach to data analysis.

In some discussions, terms like codes and themes are used interchangeably and this can lead to confusion (Ritchie et al. 2014). We are sometimes asked about the difference between a code and a theme. One way we have found it helpful to explain this is to say that data are organised by coding them while codes are organised by drawing them together as themes. You may also see the term 'thematic code': this is simply an alternative way to refer to the type of coding we describe here, where your coding leads to identification of themes as opposed to coding for actions as advocated by Charmaz (2014) in constructivist grounded theory (Section 13.9).

Searching for themes involves you making judgements about your data and immersing yourself in them. As you search these codes, initial questions you can ask include:

- What are the key concepts in these codes?
- What, if anything, seems to be recurring in these codes?
- What seems to be important, whether it recurs often or not?
- What patterns and/or trends are evident in the coded data?
- Which codes appear to be related?
- How do a particular set of codes appear to be related?

Next, as you start to decide on themes through which to analyse your data further, additional questions may include:

- What is the essence of each theme?
- How might themes be related to each other?
- Which themes appear to be main themes and, within these, which appear to be sub-themes? (There may also be third level themes evident in your analysis.)
- How can the relationship between themes be represented (as a hierarchy or a network) to produce a thematic map?
- Is there an overarching theme (or more than one) that unites the analysis?

You should not expect this process to be unproblematic. In attempting to achieve a thorough understanding of your data set, some further questions you may ask include:

- How well does this initial thematic map represent the relationships between themes?
- Which themes, if any, do not fit within this thematic representation?
- Does the way the data have been coded need to be revised; if so which data and how?
- Which themes need to be refined, discarded or newly introduced?
- How may the thematic representation be modified to represent my data better?

In the first set of questions, you begin to decide on themes to further your analysis. In the second set of questions, you begin to define your themes and their relationships. Some themes (2nd order themes) will become overarching themes (aggregate dimensions); some may become themes (2nd order themes), linked to a overarching theme (aggregate dimension) yet others may be sub themes (1st order concepts), linked to a theme (2nd order theme). In the third set of questions, you evaluate your themes (2nd order themes) and the relationships between them. This will mean refining your themes and testing propositions.

Theme refining, defining and naming

Refining defining and naming themes is an important part of your analytical process. The themes that you devise need to be coherent to provide you with a well-structured analytical

framework to pursue your analysis. As you develop themes you should reorganise your coded data extracts under the relevant theme or sub-theme. This will allow you to evaluate whether these coded data are meaningful to one another within their theme and, more widely, whether (and how) themes are meaningful in relation to one another. This is likely to be an iterative process, as you re-read and reorganise your data. As you continue to examine your data, you will be likely to refine these themes.

You may decide that some of your initial themes should be combined to make a new theme while others should be separated into different themes, or even discarded. By reading the coded data attached to a theme, you will be able to evaluate whether they support the continuation of the theme. This will also allow you to decide if the data are too dissimilar so that these should be separated into two or more themes. It will also allow you to decide whether two or more themes contain similar meanings and so should be collapsed into a single theme. As you refine your themes in this way you will also be able to revise the relationships between them.

As you seek to reveal patterns within your data and to recognise relationships between themes, you will be able to develop testable propositions (Box 13.8). The appearance of an apparent relationship or connection between themes will need to be tested to establish whether there is an actual relationship. However, while this is sometimes referred to as 'testing a hypothesis', it is not the same as the statistical hypothesis or significance testing we discuss in relation to quantitative analysis (Section 12.9).

It is important to test the propositions that emerge inductively by seeking alternative explanations and negative examples that do not conform to the pattern or relationship being tested. Alternative explanations frequently exist, and only by testing the propositions that you identify will you be able to move towards formulating valid conclusions and an explanatory theory, even a simple one (Miles et al. 2019). Dey (1993: 48) points out that 'the association of one variable with another is not sufficient ground for inferring a causal or any other connection between them'. The existence of an intervening variable may offer a more valid explanation of an association that is apparent in your data (Box 13.9).



Box 13.8 Focus on student research

Research propositions

During the process of qualitative data analysis, a student evaluating the use of online retailing formulated the following proposition:

> *Customers' willingness to trust specific online retailer depends on their previous customers' review for that retailer.*

A student exploring mortgage borrowers' decision making drew up this proposition:

> *Potential mortgage borrowers' choice of lending institution is strongly affected by the level of customer service that they receive during the initial inquiry stage.*

Another student investigating cause-related marketing formulated the following proposition:

> *Companies engaging in cause-related marketing are motivated principally by altruism.*

A relationship is evident in each of these propositions. Each was tested using the data that had been collected.



Box 13.9 Focus on student research

The impact of an intervening variable

Kevin's research project involved looking at the use of subcontractors by an organisation. A relationship appeared to emerge between the awarding of contracts to a particular subcontractor and the size of that contractor in terms of number of employees; in particular, those contractors with larger numbers of employees appeared to be awarded more contracts. This could have led Kevin to conclude the awarding of contracts to a particular subcontractor was related to their size and that the organisation tended to use larger subcontractors.

Reality was not so simple. The organisation had originally used over 2,500 subcontractors but had found this exceedingly difficult to manage. To address this issue the organisation had introduced a system of preferred contractors. All 2,500 subcontractors had been graded according to the quality of their work, with those whose work had been consistently of high quality being awarded preferred contractor status. This meant that they were invited by the organisation Kevin was researching to tender for all relevant contracts. The intervening variable was therefore the introduction of preferred contractor status dependent upon the quality of work previously undertaken. The fact that most of these subcontractors were larger was not the reason why the organisation had awarded them contracts.

By rigorously testing your propositions against your data, looking for alternative explanations and seeking to explain why negative cases occur, you will be able to move towards the development of valid/credible and well-grounded conclusions. The validity/credibility of your conclusions needs to be verified by their ability to withstand alternative explanations and negative cases. **Negative cases** are those that do not support your explanations or the induction of your grounded theory. These should be seen positively as these will help to refine your explanations and direct the selection of further cases to collect and analyse data.

This will help you to avoid interpretations that prove to be unreliable because you only notice evidence that supports your own opinions. It relates to our earlier discussion of reflexivity (Section 13.5) and the need to recognise your own attitudes and beliefs about the topic being researched, to understand how this affects your judgement while analysing these data. Brinkmann and Kvale (2015: 278) refer to this process as seeking to achieve 'reflexive objectivity'.

Evaluation

Thematic Analysis is a generic systematic approach to qualitative data analysis that is accessible and flexible and not overly prescriptive. It is suitable to use with several qualitative research strategies, where you are not following a named version of a strategy that prescribes precise analytic procedures, as in the Grounded Theory Method. Thematic Analysis is adaptable, so if the research strategy you are using requires you to search for particular themes you may consider using it. The process of searching for themes is common to other analytical approaches, as we consider in the following sections. It can be used for deductive, inductive and abductive approaches to theory development.

13.7 Template Analysis

Overview

Template Analysis is a specific approach to thematic analysis, with a few key differences to that outlined previously (Section 13.6). In Template Analysis only a proportion of the data items are coded before developing an initial coding structure and interpretive themes, these data items being chosen for their representativeness or heterogeneity to try to overcome it (King and Brookes 2017). This contrasts with some other approaches to Thematic Analysis where all data items (transcripts or other text) are coded before the search for interpretive themes begins fully, thereby avoiding early thematic interpretation prematurely shaping or skewing the direction of the research in this emergent approach.

Within Template Analysis the **coding template** is a hierarchical representation of the codes and interpretive themes, providing the central analytical tool. A researcher using Template Analysis will start by coding a sufficient part of their data to develop an initial coding template (Box 13.10). This may mean coding a small number of transcripts to develop an initial set of themes. These are then arranged and rearranged until a satisfactory initial template is developed, representing a hierarchy of higher order themes, subthemes and lower order thematic codes. Subsequent transcripts are then coded using the codes in this initial template. This is modified as new data suggests deficiencies in the codes, leading eventually to the development of a final coding template. Template Analysis is a standalone analytical technique, rather than being part of a wider methodological approach. Consequently, it may be used irrespective of whether you are adopting an objectivist or subjectivist position or whether you adopt a deductive or inductive approach to theory development. It may commence with a number of a priori codes, which are then supplemented by the use of in vivo codes.

Process

King and Brookes (2017) describe a procedure for Template Analysis composed of six stages, involving:

1. familiarisation with data;
2. preliminary coding;
3. clustering codes;
4. production of an initial coding template;
5. development of this template;
6. application of the final template.

The first stage, familiarisation with data, is the same as the initial stage of Thematic Analysis. During this stage, you will need to become familiar with your data by transcribing these and carefully reading each transcript several times, to understand and gain insights into these data.

As you become familiar with your transcribed data, you can look for units of data that relate to your research question and begin to code these. Like with Thematic Analysis, you may begin by using a priori codes that you have identified from existing literature, or alternatively in vivo codes derived from your data (Section 13.6). Initial use of a priori codes may also be supplemented by the subsequent development and use of in vivo codes.

As you develop codes and code your data you will start to see how these codes may be related to each other. At this stage you will be clustering your codes and arranging them hierarchically. This is the same process of developing themes that we described for Thematic Analysis, albeit that it occurs earlier in Template Analysis. This leads into the next stage where you produce an initial coding template. This template will show the clusters of codes you have produced in a hierarchical fashion to display the relationships between them, with each cluster being headed by a theme or subtheme.

Box 13.10 provides an example of an initial coding template, showing the hierarchical relationship between the themes. In this example, three levels of themes have been used. The numbering system and placing of lower-level thematic codes towards the right-hand side helps indicate the hierarchical relationships in this coding template. Codes are grouped together in lower levels to show how higher-order themes are constituted.

As your data collection and analysis proceeds, you will also develop your template further. This is an iterative process that involves modifying it until you devise a structure that represents all relevant ideas in your data and the relationships between them, both hierarchically and laterally where appropriate (King and Brookes 2017). Analysing your interview transcripts or observation notes will lead to some earlier themes being revised and even changes to their level or place in the template hierarchy. Where you consider introducing a new code or theme, or altering the level of an existing code or theme in the template, you need to verify this action and explore its implications in relation to your previous coding activity. This is usually more straightforward using CAQDAS (Silver and Lewins 2014). As part of this, it is helpful to use self-memos to note the reasons for these changes.

King and Brookes (2017) outline five principal ways in which a template may be reorganised and revised:



Box 13.10 Focus on student research

Part of an initial template to analyse an advertising campaign's impact

Joss was asked to gather and analyse perceptions from a range of professionals in an organisation about a recent advertising campaign it had commissioned. After conducting a few interviews, transcribing the data and undertaking preliminary coding she embarked on the production of an initial template. She had used existing literature to inform her interview guide and used this to commence her coding and the production of this initial template. This initial template reflected her use of a priori codes to commence analysis, with higher-order themes shown in CAPITALS and lower-order ones in lower case and *italic script*. An extract of her initial template follows:

1 CONTEXTUAL FACTORS
- **1.1** Reasons for campaign
- **1.2** Environment
  - **1.2.1** *Political*
  - **1.2.2** *Economic*
  - **1.2.3** *Socio-cultural*
  - **1.2.4** *Technological*
  - **1.2.5** *Legal*
- **1.3** Nature of the product
  - **1.3.1** *Cost*
  - **1.3.2** *Features*
  - **1.3.3** *Target groups*

2 NATURE OF THE CAMPAIGN
- **2.1** Media
- **2.2** Coverage

3 AWARENESS BY TARGET GROUPS AND OTHERS
- **3.1** Those in target groups
- **3.2** Others

- Insertion of a new code or theme into the hierarchy as the result of a relevant issue being identified through data collection;
- Deletion of a code or theme from the hierarchy if it is not needed;
- Merging codes or themes that were originally considered distinctive;
- Altering the classification of codes or themes, either by promoting to a higher level or demoting within the coding template;
- Changing the scope of a code or theme. Inserted, deleted, merged and altered codes or themes may have implications, resulting in the need to move a code or theme within the coding template, change its purpose or split it into two or more new codes or themes.

Box 13.11 shows how the themes and codes in the initial coding template in Box 13.10 were altered as the process of data collection and analysis progressed. Several have been deleted and new ones inserted that better reflect the terms used by participants. Some initial themes or codes have been merged. For example, the original, second-level theme, 'Reasons for campaign' has been merged with the first-level theme, 'Contextual factors', to form a new first-level theme, 'Perceiving the need for the campaign'. The original second-level themes, 'Media' and 'Coverage' have both been reclassified to become first-level themes. As a result of this reclassification, the scope of these themes has been enlarged and new subsidiary themes created to encompass this.

Your template is likely to undergo revision until all data have been coded and possibly beyond. The final template should represent all units of data that are relevant to your research question so that no further changes are required. To check this you should work through all your codes and ensure they are appropriately represented through the final template. Once this is achieved all of your data can then be applied to the template. This provides a basis for further analysis and interpretation, allowing the nature of the themes within the template to be fully explored and the relationships between them to be tested in the same way as we described for Thematic Analysis (Section 13.6). This will allow the relative importance of themes to be explored, their different roles that in the overall structure to be recognised (for example, some may contextualise others), the similarity or diversity of participant perspectives to be evaluated, and whether predicted or expected relationships exist or are contradicted. The creation of the final form of a template is



Box 13.11 Focus on student research

Part of a final template to analyse an advertising campaign's impact

As Joss continued to collect data she used her coding template to conduct her analysis. The coding template was revised as these data were analysed. An extract of her final template follows:

1 PERCEIVING THE NEED FOR THE CAMPAIGN
- **1.1** Market changes
  - **1.1.1** *Globalisation*
  - **1.1.2** *Competition*
  - **1.1.3** *Segmentation*
  - **1.1.4** *Technological convergence*
  - **1.1.5** *Compliance*
- **1.2** Product promotion
  - **1.2.1** *Product awareness*
  - **1.2.2** *Product differentiation*
  - **1.2.3** *Product upgrades*

2 EVALUATING MEDIA
- **2.1** Social media
- **2.2** Television
- **2.3** Radio
- **2.4** Printed media

3 EXPLORING COVERAGE
- **3.1** National
- **3.2** Regional/Local
- **3.3** Market segments

therefore not the end of the analytical and interpretive process but a means to explore this further to verify explanations and develop theory.

Evaluation

Like Thematic Analysis, Template Analysis offers a systematic, flexible and accessible approach to analyse qualitative data. It adopts a higher level of structure earlier on than Thematic Analysis through the development of an initial coding template. Using a template may also help you to select a priori themes to explore and to identify emergent issues that arise through the process of data collection and analysis that you may not have intended to focus on as you commenced your research project (King and Brookes 2017). Template Analysis's flexibility in developing a coding template early on and then revising this in relation to each subsequent data item or number of items allows you to undertake the stages of analysis (e.g. coding, devising and linking themes, exploring relationships, sense-making) in a more holistic way. However, some researchers may feel constrained by using a template while working though transcripts and may become too focused on applying the template to the data rather than using the data to develop the template (King and Brookes 2017).

13.8 Explanation building and testing

In this section we outline three further processes where the emphasis is on building (or predicting) and testing an explanation. These are analytic induction, deductive explanation building and pattern matching.

Analytic induction

Overview

Analytic induction is an inductive version of explanation building. A key characteristic of this process is that it uses an incremental approach to build and test an explanation or theory. **Analytic induction** seeks to develop and test an explanation by intensively examining the phenomenon being explored through the successive selection of purposive cases. This means the process of collecting and analysing data will be composed of a number of repeated steps to find a valid explanation of the phenomenon being studied (Johnson 2004).

Analytic induction emphasises a cycle of developing and testing propositions that are inductively grounded in participants' data rather than deductively testing existing theory. It may use theory in conjunction with grounded data to formulate the propositions that guide each step to help to find a valid explanation (Bansal and Roth 2000). The analytical procedures are not highly developed or formalised, so you may also find the generic procedures outlined for Thematic Analysis (Section 13.6) helpful to guide your analysis within each case.

Process

Data will have been collected from an initial purposive case study, usually by conducting exploratory interviews or observations. Your data should be analysed to devise codes and themes, and recognise relationships between them to develop an initial definition of a

proposition that seeks to explain the phenomenon being studied. This initial proposition is then tested through the purposive selection (Section 7.9) of a second, related case study, involving further exploratory interviews or observations.

Given the loosely defined nature of your initial proposition, it is likely that it will either need to be redefined or the scope of the phenomenon to be explained will need to be narrowed. Redefining the proposition leads to a third iteration or step in the analytic induction process, involving the purposive selection of a third case study to explore the phenomenon and test your redefined proposition. If at this stage your redefined proposition appears to explain the phenomenon, you may either cease data collection on the basis that you believe you have found a valid explanation or seek to test the explanation in other purposively selected cases to see whether it is still valid.

You are likely to encounter one or more cases where your proposition is not adequate to explain the phenomenon you are studying. These are referred to as negative or deviant cases. When you encounter a negative case you will need to take this into account in redefining your proposition, and to test this in the context of another purposively selected case. This process continues until a redefined proposition is generated that reasonably explains the phenomenon in relevant cases where you have collected and analysed data. In practice, several redefinitions of the proposition may be necessary to develop a valid explanation.

Evaluation

As an inductive and incremental way of collecting and analysing data qualitatively, analytic induction can lead to the development of well-grounded explanations. It encourages the collection of data that are thorough and rich by exploring the actions and meanings of those who participate in this process, through in-depth interviews or observation, or some combination of these methods.

However, it is neither a quick nor an easy approach to conducting qualitative analysis. While it may lead to a well-grounded and unassailable explanation, where all negative cases are either accounted for by the final revised explanation or excluded by redefining the phenomenon being studied, this outcome is only likely to occur if that technique is used in a thorough and rigorous manner. This will involve a search for cases that are related to the phenomenon being studied, the in-depth collection of data within each case and the rigorous analysis of these data to devise a final revised proposition that explains the phenomenon being studied throughout these cases.

Your sample selection needs to be undertaken carefully. Selecting diverse cases related to the phenomenon being studied can help to overcome issues related to theoretical generalisability. For example, if you were seeking to explain how small enterprises respond to regulatory change you could select a sample of cases (organisations) from different business sectors and in relation to a range of regulatory changes, where feasible. Despite this, it may be criticised because of issues about its limited representativeness and generalisability. However, this criticism misses the point of inductive research; namely to find explanations that are well grounded in the context being researched. These explanations will exhibit high levels of reliability and internal validity. Others may subsequently seek to test these explanations in other settings.

Deductive explanation building

Overview

Deductive explanation building involves an incremental attempt to build an explanation by testing and refining a predetermined theoretical proposition.

Process

As with analytic induction, the process comprises a number of repeated steps to find a valid explanation (Yin 2018):

1. Devise a theoretically based proposition, which you seek to test.
2. Undertake data collection using an initial, purposive case study to compare the findings in relation to your theoretically based proposition.
3. Where necessary, amend the theoretically based proposition in the light of the findings from the initial case study.
4. Select a further, purposive case study to undertake a further round of data collection in order to compare the findings to your revised proposition.
5. Where necessary, further amend the revised proposition in the light of the findings from the second case study.
6. Undertake further iterations until a satisfactory explanation is reached.

Evaluation

Like pattern matching this technique uses a deductive approach involving testing a theoretical proposition or prediction. Where you are able to utilise existing theory to produce such a proposition or prediction this may make the process of explaining the phenomenon less onerous than using analytic induction. Given the commonality of using a deductive approach in these techniques, we offer a combined evaluation after outlining pattern matching.

Pattern matching

Overview

Pattern matching involves predicting a pattern of outcomes based on theoretical propositions to explain a set of findings (Yin 2018). You develop your conceptual or analytical framework, utilising existing theory, and then test the adequacy of the framework deductively as a means to explain your findings. If the pattern of your data matches that which has been predicted through the conceptual framework you will have found an explanation, where possible threats to the validity of your conclusions can be discounted.

Process

The first use is matching patterns for dependent variables arising from another, independent variable. For example, based on theoretical propositions drawn from the literature you specify a number of related outcomes (dependent variables) that you expect to find as a result of the implementation of a particular change management programme (independent variable) in an organisation where you intend to undertake research. Having specified these expected outcomes, you then engage in data collection and analysis. Where your predicted outcomes are found, it is likely that your theoretically based explanation is appropriate to explain your findings. If, however, you reveal one or more outcomes that have not been predicted by your explanation, you need to seek an alternative (Yin 2018).

The second use is matching patterns for variables that are independent of each other. In this case you would identify two or more alternative explanations to explain the pattern of outcomes that you expect to find (Box 13.12). Consequently, only one of these predicted explanations may be valid. If one explanation is found to explain your findings then the



Box 13.12 Focus on student research

Pattern matching for explanations

Linzi's research objective was to explain why productivity had increased in a case study organisation even though a number of factors had been held constant (technology, numbers of staff employed, pay rates and bonuses, and the order book) during the period of the increase in productivity. She developed two alternative explanations based on different theoretical propositions to explain why this increase in productivity had occurred in the organisation. Her explanations were related to the following propositions:

1 Productivity increase is due to better management, which has been able to generate greater employee engagement, where this proposition is based on theory related to strategic human resource management.
2 Productivity increase is due to fears about change and uncertainty in the future, where this proposition is based on theory related to organisational behaviour and the management of change.

These propositions offered her two possible and exclusive reasons why the described phenomenon had occurred, so that where evidence could be found to support one of these, the other, which did not match her outcomes, could be discounted.

others may be discarded. Where you find a match between one of these predicted explanations and the data you have collected and analysed, you will have evidence to suggest this is an explanation for your findings. Further evidence that this is a correct explanation will flow from finding the same pattern of outcomes in other similar cases (Yin 2018).

Use of prior theory will help to determine an initial set of codes for analysis, although these will be subject to change (insertions, deletions and merging) depending on their utility. As you collect data, attach units of data to codes and examine them for emergent patterns, your analysis will be guided by your initial theoretical propositions and explanations. These propositions still need to be tested thoroughly by seeking negative examples and alternative explanations that do not conform to the pattern or association being tested. Your analysis will follow that outlined for Thematic Analysis (Section 13.6)

Evaluation

Pattern matching and deductive explanation building both involve a defined and systematic procedure, linked to specifying theoretical propositions prior to commencing data collection and analysis. Even though the initial theoretical proposition in deductive explanation building may need to be revised during the research, this procedure is shaped by the use of prior theory.

The use of prior theory in either procedure should enable you to develop a well-defined research question and set of objectives. It also means you can start with a clear framework to guide your research linked to testing a theoretical proposition or propositions. The use of prior theory should also help to shape your interview questions.

Your use of predicted explanations should mean that the pathway to answer your research question and objectives is reasonably defined. This will depend on two factors:

- your thoroughness in using existing theory to define clearly the theoretical propositions and conceptual framework that will guide your research project;
- the appropriateness of these theoretical propositions and the conceptual framework for the data that you reveal.

13.9 Grounded Theory Method

Overview

Grounded Theory Method is part of the Grounded Theory research strategy (Section 5.5). It avoids using a priori codes derived from existing theory and commences inductively, developing codes from the data collected (Section 13.6). Data collection and analysis are interrelated, the concepts emerging from previously collected and analysed data being used to direct future data collection. Grounded Theory is seen as systematic, or even prescriptive, because it sets out research practices that should be followed. Its use in practice is criticised when researchers only implement some of these elements, not all (Box 5.8).

The elements of Grounded Theory as a research strategy include early commencement of data collection, concurrent collection and analysis of data, development of codes from the data, and the use of constant comparison, self-memos, theoretical sampling, theoretical saturation and theoretical sensitivity, leading to the development of a theory that is grounded in the data. We suggest re-reading about these in Section 5.5 before reading further in this section.

Here we focus on the analytical techniques used in the Grounded Theory Method. Although a number of connected analytical techniques are defined in Grounded Theory Method, the exact nature of these varies between sources that outline them (e.g. Bryant and Charmaz 2007; Charmaz 2014; Corbin and Strauss 2015; Glaser and Strauss 1967) and even between editions of the same book (Corbin and Strauss 2008, 2015; Strauss and Corbin 1998). While all subscribe to practices including concurrent collection and analysis of data, use of inductive codes, constant comparison and theoretical sampling, some versions are more structured and precisely defined (e.g. Strauss and Corbin 1998) while others are more flexible (Charmaz 2014). In the Grounded Theory Method of Strauss and Corbin (1998), the disaggregation of data into units is called open coding, the process of recognising relationships between categories is referred to as axial coding and the integration of categories around a core category to develop a grounded theory is labelled selective coding. In the subsequent editions (Corbin and Strauss 2008, 2015), open coding and axial coding have been merged and selective coding has been relabelled as integration. Alternatively, the more flexible approach to the Grounded Theory Method of Charmaz (2014) consists of two major phases of coding: initial coding and focused coding, while she also discusses and evaluates axial coding (Strauss and Corbin 1998) and the theoretical coding approach developed by Glaser (1998) (Figure 13.2).

Rather than being confused by these variations in technique, we need to step back and recognise this should not be a complicated process. Corbin in Corbin and Strauss (2015) succinctly summarises the process of analysing grounded data. She emphasises the central role of constant comparison which involves comparing units of data with other data to see whether these are similar or different. Similar data are given the same code to group these together. Similar codes are subsequently grouped together as themes, although in Grounded Theory these are often called categories. The properties or dimensions of each category are developed as further data are collected and analysed. These categories that withstand analytical development are eventually integrated around a single category referred to as the core category. Choice of this core category will depend on your research question. This core category and its relationships to these other categories are used to develop a grounded theory.

As an introduction to the analytical techniques associated with using the Grounded Theory Method, we focus on those of Strauss and Corbin (1998) and Charmaz (2014). Where you decide to use a Grounded Theory strategy (Section 5.5) you may find it useful

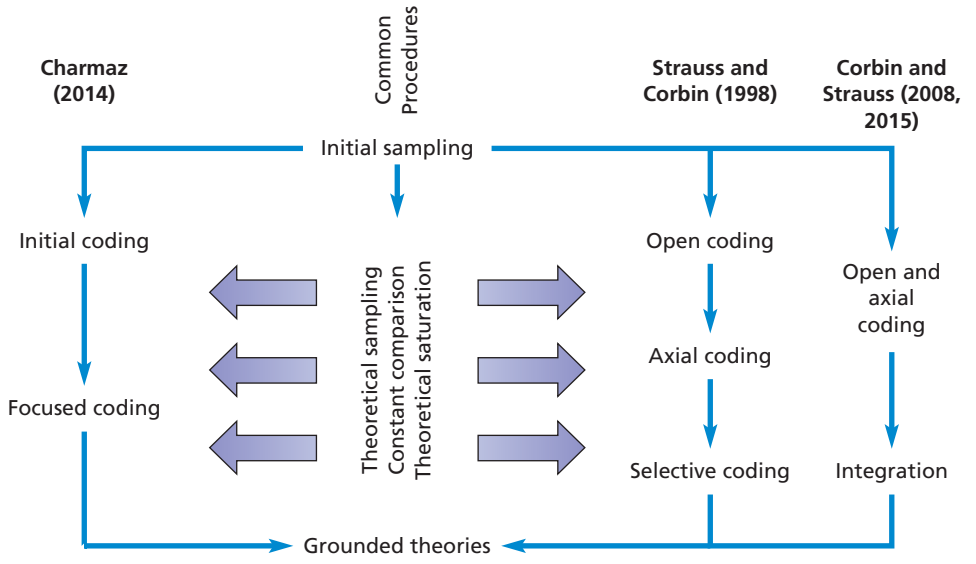


Figure 13.2 Alternative approaches to the Grounded Theory Method
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to consult these two books and Straus and Corbin (2015). However, the key to the success in using the Grounded Theory Method is choosing one approach, undertaking this without too much adaptation, and developing your skills in using it (Kenealy 2012). We would advise you to discuss this choice with your project tutor.

Process

Having outlined the elements of Grounded Theory in Section 5.5, we concentrate here on the techniques used in combination to analyse data through different levels of coding. Theoretical sampling (Section 7.9) is used to choose pertinent cases at each phase of data collection and analysis. Your initial sample will be selected in relation to your research question or topic. Each subsequent case will be selected to explore analytical ideas and categories emerging from coding data in the previous case or cases. The purpose of this will be to further develop analytical categories and codes to explore relationships between these to develop a grounded theory. Underpinning this is the process of constantly comparing the data being collected with the codes and categories being used, to develop an emerging theory that is grounded thoroughly in these data. Memo writing throughout your Grounded Theory study allows you to summarise, clarify and develop ideas that relate to the codes you develop, the categories you derive, the relationships between these, the emergence of theory and other aspects related to your study. Theoretical sampling continues until theoretical saturation is reached. This occurs when data collection ceases to reveal new data that are relevant to a category, where the properties or dimensions of categories have become well developed and understood, and relationships between categories have been verified (Figure 13.2).

Initial coding or open coding

Initial coding or **open coding** is similar to the coding process outlined for Thematic Analysis (Section 13.6). Your data are disaggregated into conceptual units and coded

with a label. The same in vivo code is used for similar units of data. However, because the Grounded Theory Method commences without an explicit basis in existing theory, the result may be the creation of a multitude of conceptual codes related to the lower level of focus and structure with which you commence your research (Box 13.13). The emphasis is to derive meanings from the actions, interactions, subjects and settings being studied.

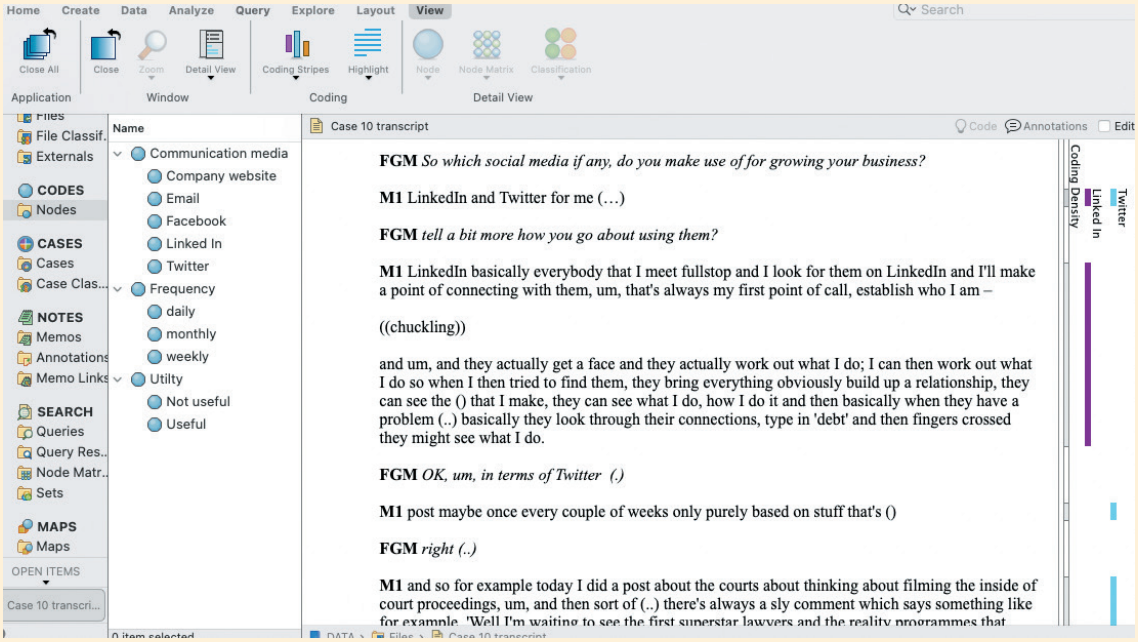


Box 13.13 Focus on student research

Using open coding

Jemma's research was concerned with small- and medium-sized enterprises (SMEs) and their use of social media. She was particularly interested in how they used social media to communicate with potential clients and customers. At the start of her research she undertook two face-to-face focus groups with owner managers of SMEs. The audio recordings of each focus group were subsequently transcribed in Microsoft Word and saved as a docx file. Within the file, Jemma labelled herself, the focus group moderator, as 'FGM'; the male participants as 'M1', 'M2' and so on; and the female participants as 'F1', 'F2' and so on. Each file was then imported into the CAQDAS software NVivo™. Open codes relating to different communication media such as 'LinkedIn', 'Facebook', 'Twitter', 'Email', 'Letter' and 'Company website' were attached to the transcript, each participant's response being a separate unit of data. Codes were also attached regarding whether the participant felt the social media was 'Useful' or 'Not useful' and the frequency with which it was used.

Based upon analysis using these and other codes Jemma noticed that these SMEs were using social media sites such as LinkedIn widely and frequently to showcase their businesses and to build relationships with customers. However, she noted that clear links between the use of LinkedIn and increased revenues were difficult to establish. Facebook was used less widely in a business context than LinkedIn, being seen predominantly for personal friendships. Twitter was found to be most effective when used in conjunction with other social media such as the business's website. Jemma decided to follow up her initial findings using in-depth interviews.



Charmaz (2014) also advocates **coding with gerunds** rather than coding for themes, to stay close to the meanings in your data and understand these through the actions or interactions that take place in the data. A gerund is a word that ends in '-ing' that is made from a verb but used like a noun. In Box 13.5, this would result in different codes being used in place of the thematic codes to reflect the actions or interactions that occurred; for example: 'avoiding compulsory redundancy', 'requesting voluntary redundancy' and 'discussing issues'.

Using a Grounded Theory strategy may mean that your initial research question is broadly focused, although still within manageable exploratory confines. The need to understand meanings and to generate codes to encompass these, means you are likely to conduct your early analysis by looking at smaller rather than larger units of data. Coding your data to identify analytical concepts and categories will help you to consider where data collection should be focused in the future (theoretical sampling). It may also help you to develop the focus of your research question. The initial multitude of code labels will need subsequently to be compared and focussed into broader, related groupings or categories as you develop the analytical process. As you develop a narrower focus through this process, you will be able to refine and limit the scope of your research question.

Focused coding

In Charmaz's (2014) approach, **focused coding** involves deciding which of your initial codes to use to develop the analytic and explanatory focus of your coded data. This results in a smaller number of codes being attached to larger units of data, serving the same purpose as searching for themes in Thematic Analysis (Section 13.6). Data from various initial codes are re-coded to a smaller number of more focused codes. During initial coding some of the codes you develop may appear to have greater analytic potential, to help you to explain your data and to develop a grounded theory related to your research question. Selecting these codes will lead you to work through all of your coded data again to see if they are suitable to begin to develop a more explanatory focus. Charmaz suggests that codes with the capability to become focused codes, and categorise larger units of your data, are likely to be those that proved the most important or used frequently during initial coding. It is worth noting that codes that are frequently used during initial coding, may not always prove to have the greatest analytical potential, just as codes that become important may not initially attracted large amounts of data.

Progressing from initial coding to focused coding is unlikely to be a simple, linear process (Charmaz 2014). Working out and working through which initial codes may be the best ones to use as focused codes may lead you to re-code your data and develop a new set of codes. If this occurs, do not despair: it will take time, but will allow you to get closer to and understand your data with greater insight. Such reflection and re-working may occur irrespective of which qualitative analytic technique you choose. As you gain insights about what your data mean, you should use these to evaluate which codes will have the analytical capability to become focused codes to progress your analysis. These conceptually more useful focused codes should allow you to code and compare data across different interviews and observations. You will develop your analysis subsequently by constantly comparing the codes you are using to categorise your data with the data you have collected and work towards an emergent explanation of what your data mean to you.

Charmaz's (2014) approach to the Grounded Theory Method can be seen as less prescriptive and less tightly defined than other approaches. She adopts a constructivist approach, which assumes that people construct their social realities, with both the participants' and the researcher's interpretations being socially constructed. Analysis develops by constantly comparing data to codes and codes to data, codes with other codes, and data with other data to develop higher levels of abstraction rather than necessarily using axial coding or

selective coding. Analysis is shaped by the researcher's interaction with and interpretation of these constant comparisons.

Axial coding

Axial coding is a way of rearranging the data that were fragmented during open or initial coding into a new whole, based on a hierarchical structure. It refers to the process of looking for relationships between the categories of data that have emerged from open coding as a process of theoretical development. As relationships between categories are recognised, they are rearranged into a hierarchical form, with the emergence of subcategories. The essence of this approach is to explore and explain a phenomenon (your research topic) by identifying what is happening and why, the environmental factors that affect this, how it is being managed within the context being examined and the outcomes of action that has been taken.

In some Grounded Theory Method prescriptions, axial coding may involve identifying structural elements such as the situation involved, the issue at the centre of this situation, the interactions that took place and the outcomes or consequences of these actions to develop a hierarchical structure. This approach may be appropriate where you wish to use a prescribed analytical framework to develop your analysis such as Strauss and Corbin (1998). But Charmaz (2014) believes that some will find it too prescriptive and will prefer to use a simpler, more flexible approach. Here, her use of initial coding and focused coding, combined with the use of theoretical sampling, constant comparison and theoretical saturation, is likely to prove more suitable.

Once these relationships have been recognised, you will then seek to verify them against actual data that you have collected. Strauss and Corbin (1998) recommend that you undertake this by formulating questions or statements, which can then be phrased as hypotheses, to test these apparent relationships. As you undertake this process you will be testing these hypotheses by looking for both supporting evidence and negative cases that demonstrate variations from these relationships.

Selective coding

After a lengthy period of data collection, which may take several months, you will have developed a number of principal categories and related subcategories (Strauss and Corbin, 1998). The stage that follows is called **selective coding**. This identifies one of these principal categories, labelled the 'central' or 'core' category, and relates the other principal categories to it, integrating the research and developing a grounded theory (Corbin and Strauss 2015; Strauss and Corbin 1998). In the previous stage the emphasis was placed on recognising the relationships between categories and their subcategories. In this stage the emphasis is placed on recognising and developing the relationships between the principal categories that have emerged from this grounded approach in order to develop an explanatory theory.

Evaluation

A number of implications have emerged from our brief outline of the main procedures involved in the use of grounded theory. These may be summed up by saying that the use of the Grounded Theory Method will involve you in processes that will be time-consuming, intensive and reflective.

Before you commit yourself to the Grounded Theory Method, you need to consider the time that you have to conduct your research, the level of competence you need,

your access to data and the logistical implications of immersing yourself in such an intensive process. There may also be a concern that little of significance will emerge at the end of the research. The Grounded Theory Method has the scope to provide you with a systematic analytical technique where you wish to use an emergent research approach. It is part of a wider strategy that you can follow to guide your research project from its inception, through the processes of data collection and analysis, to completion. The theory that you develop should be well grounded in the meanings expressed by your participants and the context of the research setting. Successful application of this approach is related to ensuring you understand one or other of the published versions of the Grounded Theory Method and you are following its procedures exactly as specified.

13.10 Narrative Analysis

Overview

Narrative Analysis is a collection of analytical approaches to analyse different aspects of narrative while preserving the data in its narrative form. These may be combined in practice, depending on your research question and purpose, and the nature of your data. Unlike Thematic Analysis, Template Analysis or the Grounded Theory Method, where original data are fragmented by coding and then assigned to analytical categories, narrative data are preserved and analysed as a whole unit or narrative sequence. Categories, themes and facets of content may still be identified and coded, but this occurs within their narrated context, maintaining the sequential and structural elements.

While a narrative tends to be analysed as a whole, the nature of what constitutes a narrative varies considerably. Narratives may vary from a segment of text or speech to a whole life story provided by a narrator. Analysis may focus on extracts from interview transcripts, which each provide a short narrative about a related topic or incident in which the researcher is interested. These tend to be short stories that have a clear purpose, encompassing a situation, action and outcome, expressed in a structure that has a beginning, middle and end. Analysis may also focus on passages of speech or dialogue, to analyse how the narrative is constructed. For more extended narratives, analysis can focus on accounts of life stories or organisational events, placing emphasis on sequential and structural elements. Analysis may also involve you constructing a narrative from fragments of data collected from multiple sources, such as different documents or research interviews. It can also be constructed from other narratives to provide a unified account for further analysis, sometimes referred to as re-storying.

Because Narrative Analysis is a collection of analytical approaches, with variations evident in the ways they have been used in practice by researchers, it is not sensible to describe a procedural outline as we have done in earlier sections. Rather, we briefly outline two forms: Thematic Narrative Analysis and structural narrative analysis (Maitlis 2012; Riessman 2008).

Outline of thematic narrative analysis

Thematic narrative analysis identifies analytical themes within narratives focusing on the content of a narrative, rather than on the way in which it is structured. It therefore emphasises ‘what’ the narrative is about rather than ‘how’ it is constructed.

Thematic narrative analysis (Box 13.14) can be used to analyse an individual narrative or multiple, related narratives. In either approach, you need to pay attention to the chronological sequence and contextual background of themes you identify. Understanding sequence and context is important to be able to develop a rich and full explanation when analysing an individual narrative. Analysis of multiple narratives can commence by analysing each narrative separately or by working across all the narratives at the same time. Multiple narratives will be related by a common focus, such as professional calling (Box 13.14) or an organisational event, with each narrative provided by a different participant. In analysing multiple narratives separately, initial emphasis will be on in-depth analysis before comparing and contrasting findings across narratives. Analysing multiple narratives individually can reveal how variations in context affect the actions taken and outcomes recorded, or how differences in the actions taken and outcomes recorded may vary despite contextual similarities.

Analysis of multiple narratives can also commence by searching for and coding themes across these narratives. This is more suitable where you commence your research deductively with a predetermined theoretical framework of analytical categories or themes for which to search. In this approach, you identify those themes that occur across some or all of the narratives, where variations occur, and how contextual factors affect these. This will help you to develop an explanation that evaluates the applicability of existing theory



Box 13.14 Focus on management research

Stories of calling: How 'called' professionals construct narrative identities

In an article published in *Administrative Science Quarterly,* Bloom et al. (2021) analysed the narratives of 236 individuals in four professions to discover how they incorporated life events into their stories that support their identity claims. The professions were pastors, physicians, international aid workers and teachers.

Bloom and colleagues' approach to narrative inquiry research involved conducting and audio recording semi-structured narrative interviews to gather life stories, which were then transcribed. Initial transcripts were re-read in their entirety while also listening to the audio recording, with non-verbal expressions being noted where appropriate. Each transcript was then coded using open coding, coding stories that were narrated as particular events and personal memories. Wherever possible in vivo codes were used to remain close to the participants' language.

Over time, as more transcripts were analysed, common interpretations of transcripts emerged between the researchers. Second order coding focussed on interpretating of participants' stories, seeking to elucidate recurring themes, what these meant to participants and what they revealed about how participants came to experience work as a calling. The researchers also developed their conceptual understanding of what the chronological ordering of participants' stories and the underlying themes revealed. When the interviews were no longer revealing new kinds of stories or chronologies they stopped recruiting new participants.

Bloom and colleagues found that participants identified their callings in two distinct ways: discernment and exploration. The first of these, 'discerners', journeyed to their professional destiny which was their calling. In contrast, 'explorers' searched actively for work that they loved, destiny playing no role. Once participants in each group had identified their calling, both groups of participants sought to demonstrate their legitimacy through their mastery and receiving affirmation, whilst also crafting personal authenticity in how they enacted the role.

to your data as well as being grounded in these data, while preserving the integrity of your narratives.

Analysing narratives to identify themes while keeping each narrative intact can use the method of coding we discussed earlier in this chapter. One adaptation you might use is to colour-code analytical themes in each narrative. Through this you will be able to identify its occurrence across different narratives, without fragmenting these data. A further adaptation that you may find useful to keep your narratives intact is to make several electronic copies of each set of narratives and to code a particular theme on one set of copies.

Outline of structural narrative analysis

Structural narrative analysis analyses the way a narrative is constructed by examining use of language to understand how it affects a listener or an audience. The emphasis is therefore on 'how' the narrative is constructed and language is used rather than 'what' it is about.

While thematic narrative analysis is likely to be easier to use and therefore to be used more often, structural narrative analysis can add further insights. To use this approach you will need to develop some understanding of the socio-linguistic and cognitive theories that underpin it (see Riessman 2008). These have led to methods to analyse the structures of spoken narratives. A widely used way is to analyse how narrative accounts are sequenced and structured using the technique developed by Labov and Waletzky (1967) and Labov (1972). In this you look for the presence of six elements and the way these have been used:

- an abstract (which states the point of the story);
- an orientation (which describes the situation including when and where it took place and who was involved);
- a complicating action (which describes the sequence of events including a critical point);
- an evaluation (where the narrator explains the meaning of the narrative);
- a resolution (how the issue is solved – the outcome); and
- a coda (which ends the narrative and relates it to the present).

This provides a framework to evaluate narratives, recognising not every element may be present in a narrative and the nature and sequencing of these elements are likely to vary. It is, however, worth noting that the purpose of much of the research undertaken using this and other techniques to analyse the structure of narratives is to understand how people in different groups form narratives, rather than form judgemental evaluations. This can include how acts of speech may lead to certain actions or to falsely negative perceptions; sometimes to change professional practice.

Structural narrative analysis can also be used to analyse interactions between individuals to understand the relationship between the construction of a narrative and its effect on the attitudes and subsequent actions of those who receive it. This can encompass a wide range of interactions; for example, between managers and other employees; across occupational groups; between organisational levels; across cultural and transnational boundaries. More generally, structural narrative analysis may be suitable for you to analyse the narratives you collect through conducting interviews or recording naturally occurring conversations.

Evaluation

We noted that adopting a narrative inquiry strategy may be advantageous in certain circumstances (Section 5.5). These include contexts where the experiences of your participants

can best be understood by collecting and analysing these as complete stories or narrative sequences. The ways in which events in a narrative are linked, the actions that follow and their implications are more likely to be revealed by encouraging a participant to narrate their experiences by asking them to respond to a series of pre-formed questions. Narrative analysis allows chronological connections and the sequencing of events as told by the narrator to be preserved, with the potential to enrich understanding and aid analysis.

13.11 Discourse analysis

Overview

Discourse analysis explores how discourses construct or constitute social reality and social relations through creating meanings and perceptions. It covers a variety of approaches that analyse the social effects of the use of language. 'Discourse' refers to the spoken or written use of language, often referred to as talk or text. In discourse analysis, the emphasis is on studying how language is used to shape this meaning-making process, to construct social reality. A **discourse** is therefore not just seen as neutrally reflecting social practice or relations but as constructing these (although the notion of 'constructing' is contentious and we return to it later). In this way, **Discourse Analysis** explores how discourses construct or constitute social reality and social relations through creating meanings and perceptions.

This conceptualisation allows the complexity and diversity of social practice and relations to be recognised through the existence of different, often competing and sometimes conflicting discourses. Different discourses construct perceptions about organisations and organisational relations. Language (discourse) can be used intentionally to attempt to create ideologically mounted positions, intended to be in the interests of those who produce and disseminate them. A unitarist view would emphasise the commonality of interest within an organisation (or society) and use some means (focusing on discourse) to persuade its members of this approach. By contrast, a pluralist view would see an organisation (or society) as a collection of competing interests. Even within the pluralist view, some discourses may be seen to dominate while others are marginalised.

Discourse analysis involves studying textual sources or passages such as organisational documents as used in archival or documentary research (Section 5.8). It will often involve using multiple texts that are interrelated to understand the nature and development of a discourse. The diffuse, interactional and often taken-for-granted nature of a discourse means that although it cannot be explored comprehensively, by using a range of interrelated sources it should be possible to gain access to aspects of its formation, propagation and acceptance (Phillips and Hardy 2002).

Transcripts of naturally occurring talk can also be used to explore a discourse. Such data may be collected through observation as part of an ethnographic strategy (Section 5.5). As such discourse occurs in naturally occurring talk, it is preferred to contrived talk through interviewing (Chapter 10) where the intervention of the researcher in asking questions, eliciting responses and analysing the data is likely to affect the authenticity of the discourse being analysed (Hepburn and Potter 2007). There may, of course, be a use for interview data in a subsequent, supplementary capacity.

The way a discourse emerges and constructs social reality through influencing social relations and practices is likely to be rooted in a particular period or event, such as the foundation of an organisation or an organisational change. Discourse analysis may therefore require an understanding of historical context. Some approaches to also draw on existing theoretical perspectives to explore the nature of a discourse and to contextualise its impact on social practice and relations.

Outline

Discourse analysis encompasses a range of approaches and does not specify a particular set of techniques to conduct analysis. The focus of ranges from 'finely-grained' analysis of text or talk to grand theoretical abstractions about the nature of social practice. A finely grained approach focuses on the analysis (deconstruction) of an individual text, or of a transcript of 'talk' that occurred during a social interaction located within a particular situation. The purpose of close reading of a text (or passage of talk) is to understand how the use of language indicates meaning and to categorise the nature of this discourse. Hyatt (2005, 2013) provides advice about conducting this type of analysis. His 'Critical Literacy Analysis' (2005) and 'Critical Policy Discourse Analysis' (2013) include a range of criteria for analysing text. Although these analyses are devised within the context of education, the generic analytical criteria are transferable or translatable to other contexts. If you are considering using discourse analysis you may find it useful to consult these articles.

Interdiscursive and intertextual analyses

Further (and complementary) approaches include interdiscursive and intertextual analyses. **Interdiscursivity** refers to the relation of one discourse to another, including the way one discourse may influence another discourse. For much of the Covid-19 pandemic many governments justified their responses with a discourse of 'following the science'. Box 13.15 provides an example of this in the context of the USA's roll-out of their Covid-19 booster shots programme and the World Health Organization's (WHO) response.

Intertextuality refers to the way a text or texts overtly or covertly borrow from and are informed by other texts. Overt borrowing from another text is acknowledged through use of quotations and citations. Covert borrowing involves adopting ideas or ideological positions and arguments from other texts without overtly acknowledging this. These focus on how discourses and texts are used in the construction of other discourses and texts, to identify how discourses change and develop, and to understand how attempts are made to give credibility to such changes or developments. Interdiscursive and intertextual approaches to analysis emphasise the importance of contextual knowledge in understanding how discourses develop and evolve, and in appreciating factors that can bring about change. Using these forms of analysis therefore involves using multiple texts.

Our discussion so far has emphasised the role of social constructionism in discourse analysis. By this we mean the assumption that the social world is socially constructed through discourse and that discourse analysis analyses how use of language constructs versions of social reality (including dominant, marginalised and competing discourses). However, the extent to which social reality is socially constructed is contested. To this end, Holstein and Gubrium (2011: 342) reflect a dictum of Karl Marx in saying 'that people actively construct their worlds but not completely on, or in, their own terms'. This points to the (ontological) distinction between objectivism and subjectivism (Section 4.2). According to realist philosophical positions, objective entities exist that are external to social actors, which impact on their social constructions. It is therefore important to understand external factors that affect human attitudes and actions, whether or not social actors are aware of these influences on the ways in which they make sense of their social world.

Critical discourse analysis

Critical discourse analysis adopts a critical realist philosophy (Section 4.4), drawing a distinction between the natural world and the social world, with the implication that social



Box 13.15 Focus on research in the news

US begin to offer Covid booster shots from next month

By Lauren Fedor and Mamta Badkar

The Biden administration plans to start offering Americans a third dose of mRNA Covid-19 vaccines next month amid a wave of new cases tied to the Delta coronavirus variant, after government scientists concluded booster shots were needed to stem another outbreak.

In a joint statement published on Wednesday, the heads of the US government's leading health agencies, including the Centers for Disease Control and Prevention, the Food and Drug Administration and the National Institutes of Health, said Washington was 'prepared to offer booster shots for all Americans' eight months after their second dose. The boosters would become available from September 20.

The decision comes as the US battles a fresh wave of Covid cases, with the more contagious Delta variant spreading rapidly in several states, particularly among people who have not received any jabs. The health officials, including the US surgeon general Vivek Murthy and Anthony Fauci, Joe Biden's chief medical adviser, said those at the front of the queue for boosters would include healthcare providers, nursing home residents and other senior citizens who had been among the first to receive jabs.

'Our top priority remains staying ahead of the virus and protecting the American people from Covid-19 with safe, effective and long-lasting vaccines, especially in the context of a constantly changing virus and epidemiologic landscape,' the health officials said.

'We will continue to follow the science on a daily basis, and we are prepared to modify this plan should new data emerge that requires it.' The World Health Organization questioned the US decision, saying the current data 'does not indicate that boosters are needed'.

Mike Ryan, executive director of the WHO's health emergencies programme, criticised the US for allocating third jabs for Americans when so many other countries were struggling with a lack of vaccine supply. 'The reality is, right now, today, if we think of this in terms of an analogy, we're planning to hand out extra life jackets to people who already have life jackets, while we're leaving other people to drown without a single life jacket,' Ryan said. 'That's the reality.'

Jeff Zients, the White House coronavirus response co-ordinator, pushed back against the criticisms, telling reporters that in June and July, the US administered 50m shots to Americans while at the same time shipping over 100m doses to other countries. Zients said the US intended to donate more than 200m additional doses to the rest of the world in the coming months. 'To end this pandemic, we have to protect the American people, and we have to continue to do more and more to vaccinate the world. Both are critical.'

FT *Source:* Abridged from 'US begins to offer Covid booster shots from next month', Lauren Fedor and Mamta Badkar (2021) *Financial Times,* 18 August. Copyright © The Financial Times Ltd

actors' understanding of the social world is affected by the natural world and is not entirely socially constructed. Fairclough (2010: 4–5) captures this when he writes,

> The socially constructive effects of discourse are thus a central concern, but a distinction is drawn between construal and construction; the world is discursively construed (or represented) in many and various ways, but which construals come to have socially constructive effects depends upon a range of conditions which include for instance power relations but also properties of whatever parts or aspects of the world are being construed. We cannot transform the world in any old way we happen to construe it; the world is such that some transformations are possible and others are not. So CDA is a 'moderate' or 'contingent' form of social constructionism.

Critical discourse analysis examines relations between discourse and other objects in the world that are recognised as existing, including the exercise of power by those who control resources. Discourse is seen as being affected or conditioned by social reality, knowingly or unknowingly, as well as socially construing it. As a result, it incorporates the need to not only analyse incidents of discourse (analysis of social interactions or text) but also to understand how wider discursive and social practices influence and are influenced by discourse. An incidence of discourse is 'simultaneously a piece of text, an instance of discursive practice, and an instance of social practice' (Fairclough, 1992: 4) (Figure 13.3). The approach involves analysing discourse at the level of text or social inaction, discursive practice – including the use of interdiscursive and intertextual analyses, and social practice to achieve an integrated and critical understanding.

Evaluation

Discourse analysis offers a valuable analytical approach where your research involves social action and interaction within a particular setting such as an organisation. This can include topics such as organisational communication, culture, decision-making, governance, power, practices, processes, relations or trust. It may therefore provide you with an insightful means to analyse data resulting from the use, for example, of an Action Research,

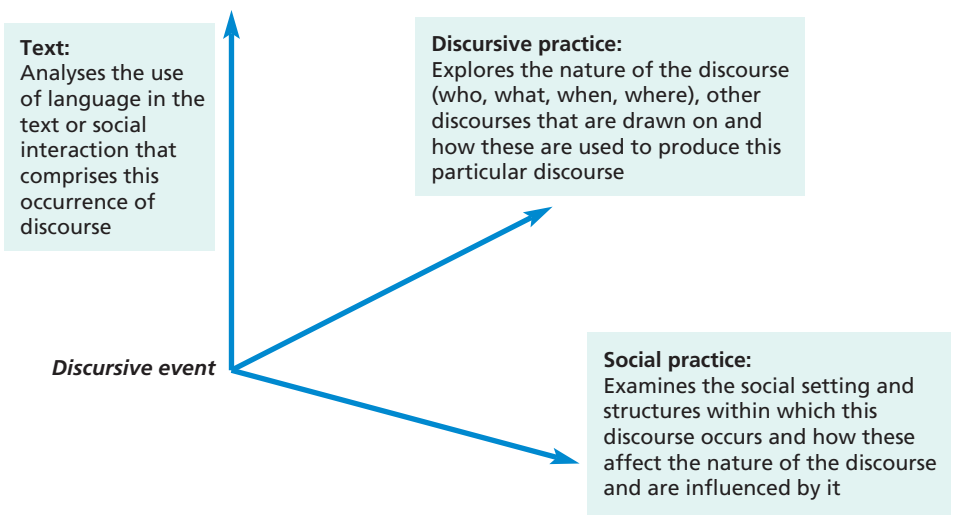


Figure 13.3 A three-dimensional analytical framework for critical discourse analysis
Source: Developed from Fairclough (1992)

documentary or ethnographic strategy where you have transcripts relating to the use of language in discourse. Discourse analysis can be used as your primary analytical technique, depending on your research question, research design and nature of your data, or in support of other analytical techniques where appropriate.

If you consider using discourse analysis, you will need to develop greater familiarity with, and understanding of, the approaches. In particular you will need to be able to explain and justify your choice of approach in relation to your research. Discourse analysis, like some other analytical approaches, has developed to suit several purposes, incorporating different philosophical and theoretical assumptions suitable for different types of data and using different methods. Discourse analysis therefore offers a potentially valuable research approach but consideration about using this approach will benefit from adequate and early preparation!

13.12 Visual analysis

Overview

Visual analysis makes use of existing visual images (Section 8.2), known as 'found' images, and images created by the researcher or research participants (Sections 9.6, 9.7 and 10.11). They may be categorised as static, such as photographs and drawings; or moving, such as video, film and television. These images provide a potentially powerful 'way of seeing' and means of gaining new insights or perspectives; as well as an effective way to record data (including contextual data) whose breadth and depth might otherwise be difficult to encapsulate and describe in a time constrained research situation. As a representational form in their own right, images can both complement and enhance textual description and analysis. However, we also recognised earlier that analysing visual data is associated with particular analytical implications that make this a problematic research method.

All images need to be interpreted, with implications at different levels. At the practical level, interpretation involves using words to describe and analyse an image, with the consequence in many cases that the image is displaced, leaving us solely with and entirely reliant on the interpretation offered in the textual description. At the explanatory level, this interpretation will only be one of many possible. Pink (2007) says that the interpretation of an image will depend on the subjectivity of the interpreter and that any interpretation is likely to be contextual and time specific. Other people in different situations and at other times may offer different interpretations.

We may also question what the image represents. While images may be viewed superficially as just a way of making things visible, they are constructed or created by someone for an intended purpose or from a particular perspective, whether this is explicitly understood or not. The use of images to capture or reveal an underlying reality is therefore contested. From this perspective, images may be constructed to justify the assumptions and practices of those who commission their creation. Such images will be carefully composed or constructed to achieve this desired effect. For others, images may spontaneously capture attributes of a situation, suggesting a view into a situated reality (Pink 2007; Rose 2016). However, even where an image is apparently taken spontaneously in a natural setting, it will still be affected by its framing, depth of focus and point of view, with the consequence that different images may create different effects.

Where you use found images or those created by others, you will find yourself in the situation of making a subjective interpretation of another person's subjective representation. In doing this you will also be creating a word-based interpretation of a visual representation. Without sufficient cultural or contextual understanding this will be problematic. To undertake this task less problematically, you will need to understand:

- who took or created the image or images that you wish to analyse;
- how these images were taken or created;
- the purpose for which these images were taken or created;
- whether these images have been used previously and, if so, how;
- any intended audience for these images, and;
- the intended effect(s) of the image maker and those who commissioned these images.

Achieving this depth of insight will necessitate you engaging reflexively (Section 1.5) during your research, where you not only seek to understand how your own preconceived ideas might influence the way you interpret visual images but also to recognise how multiple interpretations may result from the intended and unintended effects of the images you use, and from different perspectives. In recognising multiple interpretations and different perspectives, you need to make these explicit in your analysis and discussion.

Analysing images as visual data in their own right

Where images are analysed as visual data in their own right a number of analytical techniques may be used, drawn from a diverse range of disciplinary domains (Bell and Davison 2013; Rose 2016). Some techniques are data based and inductive, while others use an existing theoretical perspective through which to focus analysis. In this sub-section we briefly outline two approaches to analyse visual images. These are content analysis and semiotic analysis.

Content analysis

Content analysis is used to analyse large numbers of images and involves quantification of the visual data you derive from the images you analyse. This approach involves (Rose 2016):

- identifying categories of visual data in which you are interested;
- developing a systematic coding scheme;
- coding your visual images using this scheme;
- undertaking quantitative analysis.

If you decide to use content analysis you will need to be aware of its precise analytical rules and procedure, to which you will need to adhere (Section 12.3). Subsequent quantitative analysis ranges from calculating the frequency of different categories for a variable (Section 12.8) to examining relationships between variables created (Section 12.10).

Semiotic analysis

Semiotic analysis is the analysis of signs and their meanings in relation to the social world and social processes. A **sign** is 'something' (a word, phrase, sound, cultural artefact or visual image) that represents something other than itself such as a culture, warning, feeling or brand. The inclusion of 'something' twice in this definition is intentional indicating it consists of two parts. These are the signifier and the signified. The **signifier** is the word, phrase or sound used, or image or artefact shown and the **signified** is the concept or meaning suggested or implied. A simple and relatively straightforward example here might be the way in which images of some animals, birds and mythological creatures have been used in branding and advertisements signify power, strength, dependability, or wisdom. There is, however, no automatic relationship between a signifier and what is signified. Any meaning derived will depend on the context, and the conventions held by those who see and interpret the signs, be moderated by cultural differences, and assessed in relation

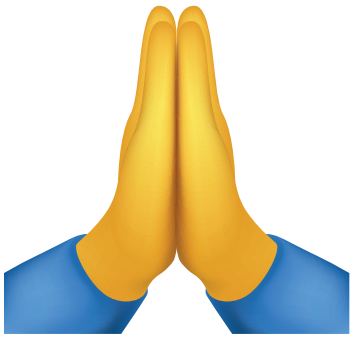


Figure 13.4 Person with folded hands emoji
Source: ya_blue_ko/Shutterstock

to other, related signs. For example, the folded hands emoji (Figure 13.4), although not usually explicitly religious in meaning, can mean 'thank you' or alternatively indicate 'pleading', 'prayer' or two people 'high fiving' each other.

Approaches to semiotics propose different ways to analyse signs. These include the:

- form a sign takes (iconic, indexical, symbolic);
- meaning a sign conveys (denotative, connotative);
- relationship between signs (syntagmatic, paradigmatic).

The form a sign takes is based on the work of the American philosopher Charles Sanders Peirce, whose work on pragmatism we refer to in Section 4.4. This differentiates between iconic, indexical and symbolic signs. An **iconic sign** is one where the signifier resembles the object being signified. Using the example of road signs for tourist attractions, the UK's Department for Transport (2015: 100–102) use a range of icons to signify types of destination (Figure 13.5). For example, the location of a historic house is signified by the



Figure 13.5 UK road signs for tourist attractions
Source: Designalldone/DigitalVision Vectors/Getty Images

image of a large house, the location of a castle by an icon that clearly resembles a castle and so on! An **indexical sign** inherently indicates the object being signified by showing evidence of what it represents such as the sign for a farm trail. This does not use an iconic representation but, instead, shows the image of a heavy horse to signify a farm. Similarly, the location of a zoo is signified by the image of an elephant and that of a football ground by a football.

Signs are often multimodal and roadside tourist signs are also a good example of this. In the UK roadside tourist signs have a brown background and often include text. The use of colour helps to signify the purpose of the sign and the use of text helps to anchor what is being signified. While none of the examples used so far include text, others combine a sign and text on a brown background to anchor meaning. A **symbolic sign** is more abstract having no resemblance to what is being signified and must be culturally learned to be capable of signifying meaning to those who see it. For example, traffic signals in many countries are based on the conventional use of three colours, red for stop, green for keep moving, and amber for stop when it is safe to do as the light will turn red soon.

The meaning a sign conveys can be classified as denotative and connotative. In a **denotative sign** the meaning being suggested or implied is literal and will be reasonably obvious or visible. For example, an image of a hotel bedroom on a hotel chain website will signify the quality of the furnishings and the amount of space in the room. A **connotative sign** is either a substitute for or a part of the thing it stands for signifying a secondary meaning. In many people's minds an image of a sunlit seashore and perfectly blue sky is associated with being on holiday and such an image may be shown on a holiday company's website to stand for a relaxing holiday, while an image of a table laid for dinner with a white cloth, silver cutlery, wine glasses, candles and flowers can represent a high-quality dining experience. An individual sign may also signify both denotative and connotative qualities.

The relationship between signs analyses the ways signs work with one another. In this respect, semiotic analysis may be syntagmatic or paradigmatic. **Syntagmatic analysis** explores relations between signs and the ways in which meanings are signified as different signs are combined into structures or sequences in visual images. In a static image such as a printed advertisement, signs become meaningful in relation to other signs that surround them in the advert. The intention of an advertisement will be to transfer the signified meanings from one or more signs to other signs related to the product, so that, for example, signs associated with health and well-being may be projected in an advertisement for a food product that wishes to be seen as healthy and good for you. Alternatively, participant produced images can be used to explore the meanings they give to a specified activity, such as entrepreneurship. In moving images such as video and film, signs occur sequentially being meaningful in relation to those that occur before and after them. Video advertisements such as television adverts may therefore be analysed similarly to explore how signs are used to signify meanings in relation to the product being promoted.

Rather than focusing on structural or sequential relations between signs, **paradigmatic analysis** explores relationships between signs by examining how the substitution of alternative signs for one sign will alter that sign's signified meaning in relation to other signs. Using our example of the advertisement for a healthy food product, if those who commissioned this advert wanted to project the idea of fitness and bodybuilding in relation to consuming this food instead of health and well-being, the signs used to signify this intended meaning would alter and consequently affect the market for this product.

Attempting to comprehend and analyse signified meanings and their relations to other signs is likely to be difficult. This will be due to the complex or abstract nature of some signs and the complexity involved when such signs are used in relation to one another. Complexity leads to the likelihood of multiple meanings as signs are interpreted. Semioticians use a term for this: **polysemy**, or multiple meanings, and a sign with more than one meaning is polysemic. However, while many signs and complex ones in particular are polysemic, their use and interpretation will be influenced by wider cultural and social conventions (such as red indicates stop). These conventions refer to wider systems of meaning that reflect shared understandings and expectations. For example, identifiable groups such as accountants, entrepreneurs, human resource practitioners, marketing professionals and public relations practitioners will each share a set of conventionalised understandings that are referred to as a **code**, affecting the way members of that group understand their professional world, how to interpret its signs and behave within it. More broadly, codes of conventionalised understandings will operate at the societal level, affecting the ways in which signs are used and interpreted. Such codes will be influenced by prevailing **ideologies** or ways of thinking, known as **dominant codes** (Rose 2016). However, while dominant codes will underpin the way in which many signs are used with the intention of producing an intended or preferred meaning, other interpretations will still exist and some of these will encompass a critical perspective about the use of signs to promote ideological interests.

Semiotic analysis can help you analyse and interpret visual images, but its strengths and issues need to be recognised. Rose (2016) expresses these succinctly. In relation to its strengths she says that, 'A semiological analysis entails the deployment of a highly refined set of concepts that produce detailed accounts of the exact ways the meaning of an image are produced through that image' (2016: 107). In relation to its issues she says that the very richness of its analytical concepts can appear to be terminologically dense while, 'for all its analytical richness, semiology does not offer a clear method for its application' (2016: 110). She does though provide her own outline to use this analytical approach, which we have developed as a checklist in Box 13.16.

Analysing images as visual representations

Images may also be used to represent analytical aspects and evoke meanings that would otherwise be difficult to convey in a research project (Box 13.17). In this approach, selected images and text are combined in a research report, to enhance one another's ability to represent perspectives that would be difficult to describe using words alone.



Box 13.16 Checklist

For semiotic analysis

- ✔ Identify the signs in an image.
- ✔ Assess what each sign signifies.
- ✔ Analyse how these signs relate to one another using the concepts outlined in this sub-section.
- ✔ Explore how these signs relate more widely to systems of meaning such as codes and ideologies.
- ✔ Evaluate the use of these signs in relation to this wider interpretation.

Developed from Rose (2016)

Where photographic images and text are combined in this way this is referred to as a **photo essay**. In a video format, voice-over narration may be used to achieve a similar effect, referred to as a **video essay**. For some research reports it may be permissible to create a digital document or multimedia website and integrate both static and moving images with text. However, it is worth checking your assessment criteria before embarking on this form of project report.

To produce a photo essay you need to consider a number of aspects. Your research philosophy, research strategy and approach to theory development will be likely to shape the nature and purpose of the photo essay you create. For example, your research may be

Box 13.17 Focus on student research

Symbolic branding of tourist destinations

Sarah was interested in how tourist destinations used images to brand themselves. In reviewing the literature she discovered that, despite an increase in destination branding research, few studies had focussed on how towns and villages branded themselves (Rowley and Hanna 2020). She decided to focus on visual branding of seaside towns and how signs (symbolic representations) were incorporated in their advertising and used at the actual destination. Having undertaken an online analysis of the use of symbolic representations in their branding by seaside towns; she had visited three towns with distinct brand identities and taken photographs of the use of symbolic representations in the town. At the end of this, she selected a few her images from each town to produce a photo-essay, which she subsequently incorporated in her project report. This photo-essay combined text with her digital images.

Her digital images illustrate how symbolic representations (signs) were incorporated into the seaside townscape. One of these locations was Lyme Regis, a tourist destination on the south coast of England, which had long been famous for its association with fossils, a variety of images of an ammonite fossil appearing prominently in much of its advertising. A selection of the images and associated text from her photo-essay for this location are reproduced here.



Lamppost

On arrival in Lyme Regis I was struck by the considerable use of representations of the ammonite fossil that had appeared as a logo or image in many of the web pages related to this destination. A stylised ammonite fossil was the central feature of the lampposts, both on the promenade and in the Langmoor and Lister Gardens, reminding the visitor of the town's links to fossils and fossil hunting. I took this photograph to illustrate both the stylised nature of the ammonite incorporated into the lampposts and its prominence. There were also more subtle uses of the ammonite in the town. One often repeated representation of this is in my photograph of the one of the numerous metal railing posts, each of which incorporated a cast of an ammonite fossil cast. Although not immediately obvious I found that, once noticed, I saw the ammonite on every post.

The town's link to fossils and fossil hunting was emphasised further in the sculpture trail in the Langmoor and Lister Gardens. My photograph shows

Box 13.17 Focus on student research (*continued*)

Symbolic branding of tourist destinations



Ammonite on a railing post

an ammonite in giant form as the sculpture 'Ammonite Jurassic Cracked' by Hamish Mackie. As highlighted by the associated plaque, this offers a more contemporary take on the ammonite and my photograph tries to capture the atmosphere this creates in the gardens' setting at sunrise. It also shows how it relates to the more stylised ammonite in the lamppost.



Ammonite Jurassic Cracked; sculptor: Hamish Mackie

Several other sculptures also highlighted the town's relationship with ammonites, fossil hunting and its importance in the history of palaeontology. These included one of the 19h Century Lyme Regis fossil hunter Mary Anning, whose life inspired Francis Lee's 2020 film "Ammonite".

Source of images in box: © 2022 Mark N.K. Saunders

concerned with revealing an underlying reality or it may be guided by a desire to visualise multiple realities and interpretations. Where your research commences deductively the images you use are likely to be influenced by existing theory. Where your research is inductive, the images you use are likely to be more exploratory.

A photo essay may be organised thematically or it may create a narrative account. In the first of these, a specific image, or set of images, will be included to illustrate a particular research theme (Section 13.6). These themes may be determined from the literature prior to creating images, or they may emerge through the process of collecting these. A photo essay that creates a narrative account is known as a **photo novella** and will introduce a storyline into the way photographic images are used in relation to one another. In a photo novella, images and text may be presented in a similar style to those in a comic book. Box 13.18 offers a series of questions to help you create your photo essay.

Where you decide to use images as visual representations you will be more likely to focus on theoretical perspectives. This will affect the way in which images and text are used in relation to one another and the balance between image and text. This is likely to involve you using longer explanatory and theoretical captions or statements in relation to

Box 13.18 Checklist

For creating a photo essay

- ✔ How will you arrange the images and text on a page?
- ✔ Will each image and its accompanying text be given equal prominence, or will you choose to give prominence to a core image and arrange others in a subsidiary way?
- ✔ How will you present the text in relation to the images?
- ✔ Will images or text be more prominent, or will these have equal prominence?
- ✔ Will you use images with only brief captions, or you may incorporate a few selected images into a largely textual account?

an image or set of images. For example, a longer caption or accompanying statement may explain who took the image, where it was taken, when it was taken and any significance related to the time at which it was taken, the nature and significance of any interaction or activity shown in the image, and how the image portrays an aspect or issue related to the image taker's experience or that of any person shown in the image (Box 13.17). More theoretically, accompanying captions or statements to images may explain the nature of each theme represented by an image, why each theme shown is significant, how themes relate to one another and how these may be integrated to generate a deeper theoretical insight. Used in this way, a researcher may create a photo essay with an explanatory and theoretical purpose (Pink 2007) (Box 13.17).

Photo essays are also produced in collaborative and participant-led visual research projects where participants analyse their own visual images and select those that represent their perspectives or experiences that are important to them (Section 10.11). Another participant-led narrative form that involves moving images is the video essay. In this, participants may produce a script for filming, record video, analyse and edit video footage and produce a video essay.

Evaluation

Visual data can be used as visual representations, rather than eliminating them during an early stage of analysis, where these are literally lost from view. While images such as some of those created by participants are deliberately and meaningfully used in visual interviews to elicit further data (Section 10.11), other images such as advertisements may be integrated in the analytical process through techniques such as semiotic analysis, while others that act as visual representations may be incorporated in the output from research through the production of photo essays.

This highlights that you will need to think through the purpose of using images, and related to this your research question, to be able to analyse these appropriately. A range of techniques exist to analyse visual images, but their suitability varies according to the research aim. Combined with the subjective nature of visual images, your choice of an appropriate analytical technique will be crucial. We recognised earlier in this section that the analysis of visual images should be undertaken methodically, reflexively and with a clear appreciation of your analytical purpose. To achieve this we recommend you:

- think carefully about the nature of your images and their suitability for enabling your research question to be answered and objectives met;

- explore possible visual analysis techniques that you might use and read further about each, as well as looking for published research that made use of these techniques;
- evaluate these possible analytical techniques and identify one or more techniques to analyse your images;
- use this technique or techniques in your analysis;
- evaluate your use of this technique or techniques as you undertake your analysis;
- if necessary, return to an earlier point in this list where your evaluation indicates the need to revise your approach.

13.13 Data display and analysis

Overview

Data display and analysis is an approach based on the work of Miles et al. (2019). For them, the process of analysis consists of three concurrent activity flows:

- data condensation;
- data display;
- drawing and verifying conclusions.

It is suited to an inductive approach to building theory, although it is also compatible with developing theory deductively.

Outline

Data condensation

Data condensation is the process of selecting, simplifying, abstracting and transforming the qualitative data you have collected from all sources. The activity is argued to make these data stronger and occurs throughout the research project. It commences before data are collected with decisions about the conceptual framework, research questions, sample selection and data collection methods. As data are collected, condensation occurs through analysis techniques such as production of interview or observation summaries, document summaries, coding and categorising data and perhaps constructing a narrative.

These activities continue until the project report is submitted and should be seen as a form of analysis that 'sharpens, sorts, focusses, discards and organizes data' allowing conclusions to be drawn and verified (Miles et al. 2019: 8). Within this it may, occasionally, to quantify these qualitative data by comparing relative sizes, in effect undertaking some quantification.

Data display

Data display involves organising and assembling your data into summary diagrammatic or visual displays to help understand what is happening. The simplest form of data display is your transcript, but such extended text on its own is cumbersome to process. Miles et al. (2019) outline a number of ways of displaying data referring to three main families of data display which organise data into a more compact form so you can see what is happening and are often available in CAQDAS. These comprise matrices, networks and other graphic displays. Matrices are generally tabular in form, with defined columns and rows, where

data are entered selectively into the appropriate cells of such a matrix, to facilitate further data analysis (Box 13.19). Networks are collections of codes (often called nodes in CAQDAS software) or boxes that are joined or linked by lines, perhaps with arrows to indicate relationships. The boxes or codes contain brief descriptions or labels to indicate variables or key points from the data. Graphic displays include a variety of graphs such as bar charts and diagrams often used with quantified data such as word clouds (Sections 12.6, 12.7).

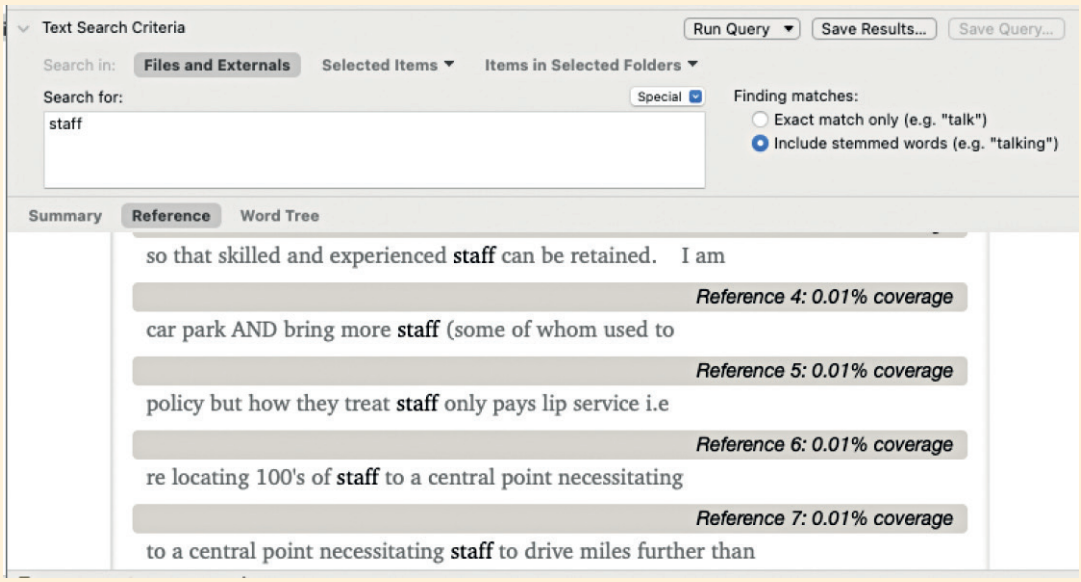
Displays allow you to make comparisons between elements in your data and identify potential relationships, key themes, patterns, and trends that may be evident. These will

Box 13.19 Focus on student research

Using CAQDAS to explore how key words are used in context

Marcus' research was concerned with how staff were responding to the managed changes in the organisation where he worked. He had collected his data using an online questionnaire, which contained the open question: 'If there is anything further you would like to add in relation to the changes at OrgCo, please type your comment in the box.' Noting that some of the responses to this question were over 500 words in length, Marcus downloaded all of them verbatim from the online survey tool into his word processor. He then spellchecked them, correcting words that had been misspelled or used American spellings to the English spelling. This ensured he would pick up all occurrences of particular words such as 'staff' or 'OrgCo', the pseudonym he used to anonymise the organisation. He then loaded the spellchecked data into QSR International's CAQDAS software NVivo. Marcus wanted to see which respondents had mentioned staff or staffing in their responses to the question and the context in which the words had been used. He therefore searched for both exact matches of the word 'staff' and stemmed words such as 'staffing' within his data.

Scanning the responses suggested that those respondents who had answered this question often appeared to talk about how staff were treated at OrgCo. Marcus decided to investigate further.



be worthy of further exploration and analysis. In this way, the use of data displays can help you to interpret your data and to draw meaning from it. As with data condensation, the design and use of displays is part of your analysis continue until the project report is submitted.

Drawing and verifying conclusions

From the start of your analysis you will be interpreting what things mean by noting possible patterns and associated potential explanations. You will be drawing, albeit tentative, conclusions, which you will note while you continue your analysis looking for data to either refute or ground them. As your conclusions and the meanings associated with them become increasingly specific and well supported by your data, you will need continue to verify them testing them for their plausibility and confirmability with your data. Your final conclusions are unlikely to appear until after you have finished your data collection.

Evaluation

Miles et al. (2019) argue there are several advantages associated with using forms of data display in analysis. Qualitative data collection tends to produce hours of audio recorded interviews or extensive piles of notes which are transcribed to produce extended text. This form of display is difficult to analyse because it is both extensive and poorly ordered. Based on the logic that 'you know what you display', the analysis of data and the drawing of conclusions from these will be helped by using matrices, networks or other graphical displays using data drawn from your extended text. These forms of display are relatively easy to generate using CAQDAS, and can assist your analytical thinking as you work through several iterations to develop a visual form that represents your data well.

Use of data display and analysis can provide you with a set of procedures to analyse your qualitative data or, alternatively, one or more of the techniques that Miles et al. (2019) outline can be used as part of your approach to data analysis. They describe the analysis of qualitative data as an interactive process, and in this sense their approach includes many aspects of analysis that complement the analytical techniques we discussed earlier. Their approach is systematic and structured, and the procedures they outline are often associated with a fairly high level of formalisation. However, unlike grounded theory, the exact procedures to be followed within their activity flows of data reduction, display and conclusion drawing and verification are not specified. Miles et al. (2019) refer to their book as a 'sourcebook', and as such it offers a variety of possible techniques that may be appropriate within the context of your own research question and objectives.

13.14 Using CAQDAS

Overview

CAQDAS (Computer-Aided Qualitative Data Analysis Software, sometimes abbreviated to QDAS) refers to programs containing a range of tools to facilitate the analysis of qualitative data. The use of CAQDAS offers a few advantages in relation to the analytical procedures we have discussed. In particular, when used systematically, it can aid continuity and increase both transparency and methodological rigour.

Silver and Lewins (2014) say that they are often asked which CAQDAS package is best, a question which they say is impossible to answer. They provide reasons for this response.

First, many tools are common to all CAQDAS packages, although each package will have specific characteristics, supporting particular functions in different ways. Second, they say that while there is some discussion about whether specific packages affect the way analysis is conducted, these programs are not designed to cater for particular methodological or analytical approach, and it is the researcher who remains in control of the way the tools in a program are used to facilitate analysis and interpretation. Third, the way in which you are taught to use a particular program may not recognise its full potential. You need to recognise the key aspects of the analytical approach which you wish to use (Section 13.3) and select those tools in your chosen CAQDAS package that facilitate these analyses while being aware of any that are not appropriate.

Depending on your analytical approach some CAQDAS programs may potentially be more useful. Consequently, you will need to develop some familiarity with different programs to be able to evaluate their applicability for the analytical approach you wish to use. However, attempting to achieve this may be problematic if the programs you wish to explore are not readily available. It is worth noting though that some CAQDAS programs that may be suitable for your purpose are available to download as freeware and that commercial software producers offer free downloads of trial versions. Silver and Lewins (2014) say that regardless of your preferred choice, each CAQDAS program will provide you with a range of tools to use to help you to manage and analyse your qualitative data. Even in the situation where you only have one program available to use this should provide you with tools to help you manage and analyse your data.

Function

The general function of a CAQDAS program is to facilitate the management and analysis of a qualitative research project. Its specific functions relate to its software tools that enable particular analytical processes. Based on Silver and Lewins (2014) these may be summarised as:

- *Managing the research project*: all data files can be stored in or linked through a project file created within the software, allowing access to all elements of the project and the establishment of an audit trail.
- *Writing analytic memos, comments, notes, etc.*: thoughts about the data and the research process can be recorded systematically and developmentally.
- *Exploring the data*: data can be explored prior to coding by noting and commenting on points and places of interest.
- *Searching the data initially*: can search for words, phrases, etc. within and across data items to further familiarity.
- *Developing coding*: supports process of developing and applying codes, according to your research philosophy, methodological approach, approach to theory development and analytical technique.
- *Coding*: supports coding of data according to analytical approach.
- *Retrieving coded data:* offers scope to revisit and evaluate coding to data, to facilitate analysis and the future direction of data collection.
- *Revising codes and coding:* offers scope to revisit and re-code data.
- *Organising data:* offers scope to organise and re-organise the qualitative data collected to facilitate analysis.
- *Hyperlinking:* provides ability to link units of data to other units, files etc. for analytical purposes.
- *Searching and interrogating:* facilitates linking and grouping codes, conceptualising and testing relationships.

- *Mapping*: provides visualisation of relationships and representing explanations.
- *Producing outputs*: produces reports allowing you to view material in hard copy or to export it to other applications such as word-processing and spreadsheet programs, as well as producing tabular reports, charts and graphical representations.

What is not apparent from this list is that the functions contained in some CAQDAS packages are better at supporting certain types of qualitative data analysis procedures than others. A wide range of qualitative data exists, and your research may involve collecting one particular type or some combination of these. Text makes up a major type of qualitative data, but this comprises different types such as documents, narratives and transcripts, affecting what you wish to achieve through analysis. Audio, still images and video sources are also important types of qualitative data. This means that you may need to experiment with more than one package before you find the CAQDAS that meets your needs. Your final choice of CAQDAS package will be dependent on a range of factors, including, not least, the relative benefits you will gain relative to the time you need to invest to learn a CAQDAS program. These factors are summarised in Box 13.20 as a checklist.

Where you decide to use a CAQDAS program and have selected a package, you will need to familiarise yourself with it before you start collecting your data. This will avoid the problem of trying to learn the features of the package at the same time as you analyse your data, although you will of course continue to learn about these as you conduct this analysis.

Exploring the latest versions of CAQDAS

Published information about CAQDAS programs is likely to become out of date fairly quickly. Fortunately, there is a wealth of up-to-date information available from the CAQDAS Networking Project's website hosted by the University of Surrey.[1] If you are considering



Box 13.20 Checklist

Choosing a CAQDAS package

- ✔ How much data do you have that needs to be analysed qualitatively?
- ✔ How important are these qualitative data in relation to any other data you have collected for your research project, and will you want to integrate any quantitative data into the qualitative software package you use?
- ✔ What type(s) of qualitative data do you need to analyse: audio, documentary, narratives, transcripts or visual?
- ✔ How much time do you have to learn how to use the package?
- ✔ What is the timeframe for your research project?
- ✔ How much support is available in your university to help you learn to use the package?
- ✔ What is the operating system of your computer?
- ✔ Do you want a package that will help you manage your thinking and assist you in developing your own codes?
- ✔ Do you want a package that will allow you to explore the way language is used in your data?
- ✔ Do you want a package that allows you to display relationships within your data diagrammatically?
- ✔ Do you want a package that will allow you to quantitatively describe the content of your data?

[1]The URL for the CAQDAS Networking Project is https://www.surrey.ac.uk/computer-assisted-qualitative-data-analysis.

Table 13.3 URLs for a range of CAQDAS developers

Name	URL	Brief comments
ATLAS.ti	http://www.atlasti.com	Windows and MAC versions. Versatile and flexible. Supports multimedia
HyperRESEARCH™	http://www.researchware.com	Windows and MAC versions. Simple to use. Case-based structure. Supports multimedia
MAXQDA	http://www.MAXQDA.com	Windows and MAC versions. Intuitive and easy to use. Mixed methods and content analysis features. Supports multimedia.
NVivo	https://www.qsrinternational.com[1]	Windows and MAC versions. Range of editions with added features. Versatile with large range of searching possibilities. Supports multimedia
ProSuite	http://www.provalisresearch.com	Windows and MAC versions. Integrated text analytics tools. Computer assisted coding of documents and images (QDA Miner), content analysis and text mining of text (WordStat), statistical analysis (SimStat)
Transana	http://www.transana.org	Windows and MAC versions. Specifically designed for qualitative analysis of audio, still image and video data. Ability to synchronise multiple video streams during playback and to synchronise playback with transcripts

Source: Developed from QUIC Working Paper software reviews available from the CAQDAS Networking Project and Qualitative Innovations in CAQDAS Project (QUIC) website hosted by the University of Surrey and/or software producers websites. Each comment in this table only provides a very brief indication and is not intended to promote or discourage the use of a particular software program, or to advocate the use of one program over other compatible programs. You are advised to evaluate the features and applications of current versions of CAQDAS at the time of your project in relation to the requirements of your research.

[1]Full URL for NVivo is https://www.qsrinternational.com/nvivo-qualitativedata-analysis-software/home

using CAQDAS, we would strongly recommend a visit to this website, which, in addition to a wealth of useful articles, also contains web links to commercial software producers' sites including downloadable demonstration versions of the software. We would also advise you to explore the Internet sites of CAQDAS producers to obtain details and demonstrations of the latest versions of these packages and the features that they offer. Some of those most widely used are listed in Table 13.3.

13.15 Summary

- Qualitative data comprise rich and full verbal, textual and/or visual data. They may also be characterised as non-standardised and non-numerical data.
- Data collection, analysis and interpretation are an interrelated and interactive set of processes in qualitative research. Analysis often occurs during the collection of data as well as after it.
- Understanding key aspects of different qualitative analysis techniques should help you to choose an appropriate technique, or combination of techniques, to analyse your qualitative data.
- Qualitative data need to be prepared carefully for analysis, usually involving transcription where the spoken word is involved.

- There are several aids that you might use to help you through the process of qualitative analysis, including: interim summaries, event summaries, document summaries, self-memos, maintaining a research notebook and keeping a reflective diary or reflexive journal.
- There are a variety of ways of undertaking qualitative analysis:
  - Thematic Analysis; Template Analysis; Narrative Analysis; discourse analysis; visual analysis; and data display and analysis may commence inductively or deductively;
  - Pattern matching and deductive explanation building commence deductively;
  - Analytic induction and the Grounded Theory Method commence inductively.
- The use of computer-assisted qualitative data analysis software (CAQDAS) can help you during qualitative analysis regarding project management and data organisation, keeping close to your data, exploration, coding and retrieval of your data, searching and interrogating to build propositions and theorise, and recording your thoughts systematically.

Self-check questions

Help with these questions is available at the end of the chapter.

13.1 Why is qualitative analysis described as an 'interactive process'?

13.2 Which sorts of data will you need to retain while you are undertaking qualitative research?

13.3 What are the main implications of using:

a a deductive analytical approach for the way in which you conduct the process of qualitative analysis?

b an inductive analytical approach for the way in which you conduct the process of qualitative analysis?

13.4 What are the key similarities and differences between Thematic Analysis and Template Analysis?

Review and discussion questions

13.5 Assume you are undertaking qualitative research or proposing to. Use the checklist in Box 13.1 to commence evaluating your choice of qualitative analysis. Where your analytical process or method is not specified by your choice of research strategy, work through the points in this checklist in conjunction with the material in Sections 13.6 to 13.13 to evaluate how you will undertake this. Draw up a shortlist of possible ways of analysing your data and make notes of points for and against use of each of one. Further evaluate your list of points for and against to decide which you will use to analyse your qualitative data. You may conduct the latter part of this evaluation with a friend to help you both to think through your respective options by discussing this. Brief each other about the nature of your respective data, your shortlists of possible ways for analysing your data, and lists of points for and against each before discussing these options.

13.6 With a friend, use part of a transcript that one of you has produced after undertaking a research interview to undertake the following tasks.

a Based on the aim or purpose for undertaking this interview, or interview themes, independently code the data in this part of the transcript using either inductive or deductive coding.

b Compare the results of your coding.

c Identify where your coding is similar to and different from that of your friend.
d Where you identify differences in coding, discuss the assumptions you each made when you coded these data and why you made these.
e By reflecting on your attempt at coding these data, which codes, if any, would you change and why?

You may repeat this process where both of you has conducted a research interview and produced transcripts.

13.7 Evaluate the scope to undertake visual research and analysis in your research project by considering the following.

a How would conducting visual research help you to answer your research question and address your research objectives?
b Why would conducting visual research not be appropriate to help you to answer your research question and address your research objectives.
c Assess your reasons for and against using visual research. Where you decide that using visual research might be helpful, continue to consider points d through g below.
d How you would use this method? This more in-depth consideration will involve you re-reading Sections 8.2, 9.6, 9.7 and 10.11 as well as 13.12.
e What would be the nature and purpose of the images produced through your visual research?
f How you will analyse these images and for what purpose?
g How will you subsequently use these images (or not) in your research report?

13.8 Visit the CAQDAS websites listed in Table 13.3. Using the information available on each website, explore the suitability of each program for the nature of your data and chosen approach to analyse these data. Use a demonstration version of a CAQDAS program that may be suitable for your data and analytical approach, to explore its features. Evaluate how useful you think this program will be to assist you in analysing your data.



Progressing your research project

Analysing your data qualitatively

- Review the qualitative data you have collected. These data may be in the form of documentary sources, recordings or notes of observations, visual images, interview transcripts or notes, or diary entries (Chapters 8, 9 and 10).
- Based on your earlier review of the checklist in Box 13.1 and reading of Sections 13.2 and 13.6 to 13.13, decide which will be most appropriate to use to analyse your data.
- Prepare your data for analysis where necessary (Section 13.4) and consider how you will make use of the aids to help you during analysis (Section 13.5).
- Based on your earlier review of CAQDAS programs (Review and discussion question 13.7), decide whether you will make use of a CAQDAS program and where you decide to use one, explore whether this is available for you to use through your university.
- Following the procedural outline of your chosen way of undertaking your analysis in the appropriate section (Sections 13.6 to 13.13) together with guidance from further reading related to their use, analyse your data to answer your research question and address your objectives.
- As you analyse your data and seek to answer your research questions and address your objectives, you will need to continue to evaluate analysis process and its suitability for your data.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Case 13
What makes a good project tutor?



Source: Aleksandr Davydov/123RF

Melinda is a postgraduate student conducting a study exploring the qualities of a good project tutor. Noting the limited literature on her topic, she has decided to conduct a qualitative study with the aim of contributing rich and in-depth insights. She has decided to adopt an inductive approach to her analysis and generate concepts and theories from the data she has collected. By grounding emergent concepts and theories in the data, she believes she will be giving voice to her participants' views. Her project tutor has advised she uses the Gioia methodology, a systematic approach for theory generation; and she has found Gioia, Corley and Hamilton's (2013) article on the methodology incredibly helpful.

Initially, Melinda had carried out 25 semi-structured interviews with the aim of conducting further interviews if theoretical saturation was not reached. Melinda transcribed these interviews verbatim. Before commencing her analysis, she focused on familiarising herself with the data by reading and re-reading all her transcripts. As a result, she started identifying potentially interesting aspects, and even some possible patterns.

Next, Melinda undertook the 1st order analysis and identified the 1st order concepts – her initial codes. This process is often referred to as 'open coding'. Aiming to communicate the participants' voice, Melinda tried wherever possible to use her participants' own language for these codes. After identifying the initial codes, for each a word or short phrase summarising the meanings in the data, Melinda attached codes to appropriate units or 'chunks' of data. She then proceeded to the next stage of the Gioia method: 2nd order analysis. Here, she grouped the initial codes with similar meanings into common themes, i.e. 2nd order themes. Finally, she further grouped the 2nd order themes into aggregate dimensions. Subsequently, she developed a data structure diagram as suggested by Gioia et al. (2013), visually representing her finalised 1st order concepts, 2nd order themes and aggregate dimensions. Melinda found her data coding required deliberation and strong analytical reasoning. She continued evaluating her final categorisation until she was sure that the final analysis communicated a compelling and convincing story!

One of Melinda's transcripts (without codes) follows. In this 'I' refers to the interviewer and 'P1' signifies participant 1:

I: Would you describe your project tutor as a good one?

P1: Yes, I would definitely say so. (. . .) My project tutor is an accomplished academic, published widely in top journals. Consequently, they are very knowledgeable and have extensive expertise, which is clearly reflected on their extremely helpful feedback. More importantly, they have always been available for a chat even at times when they are incredibly busy. (..) I sincerely believe that they are most definitely very reliable and approachable. I should also add that they are very dedicated.

I: When you say dedicated, what do you mean by that?

P1: So, they'll go above and beyond. One example (. . .) my tutor reviewed the literature review chapter I sent them over the Christmas break. They actually sent the chapter back on Christmas day, which I thought was amazing, that they would care that much (..). They actually proved that they care about me so many times. In addition, the feedback was extremely helpful. They always motivate me to do better. That makes me consider them as a good supervisor.

I: You mentioned that they showed that they care about you so many times. Could you please expound on this? How did they show that they care?

P1: For example, I had a family emergency. At that time, I was not able to focus on my studies and was too upset to do anything much [appears notably upset as talking]. However, they showed enormous support in overcoming those difficult times. So, their support went beyond the academic to also include personal support.

I: I am sorry to hear about the family emergency you experienced. I hope all is well now . . . Now, could you please focus on a particular meeting you had with your project tutor?

P1: For me (..) I think it is really important to have a balance between professionalism and also a level of friendliness as well so it's less of a meeting and more of a discussion. I think that kind of connection between us is very useful. Being able to have open conversations always helps relaxing me and open-up easily. One of the memorable meetings that I would consider to be more memorable was the one when we had this progress evaluation meeting. I appreciated the honesty and fairness. We did not only discuss my progress but also how I can improve myself. They also provided incredibly helpful career advancement advice that had a significant impact on me going forward.

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Questions

1 **a** Read the example transcript above. Undertake the 1st order analysis and identify the initial 1st order concepts.
   b While doing this make notes regarding your choices regarding your use of in vivo codes and labels developed from the data, and the units (chunks) of data.
2 Review your initial 1st order concepts. Use the patterns or themes across these concepts to undertake a 2nd order analysis and develop 2nd order themes?
3 Draw a data structure diagram to illustrate your 1st order concepts and 2nd order themes, grouping the 2nd order themes into aggregate dimensions.

Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.

They are:

- Paying for competence at Investco (focussing on coding and subsequent analysis of a transcript).
- Creating environmentally friendly office spaces (focussing on Template Analysis and researching in your own organisation).

- The impact of share announcements on market analysts' behaviour (focussing on Narrative Analysis).
- Exploring employees' experiences of remote working practices (focussing on analysis of a transcript using Thematic Analysis using Braun and Clarke's method).

Self-check answers

13.1 There are a number of reasons why we may describe qualitative analysis as an 'interactive process'. Analysis needs to occur during the collection of data as well as after it. This helps to shape the direction of data collection, especially where you are following a grounded theory approach. The interactive nature of data collection and analysis allows you to recognise important themes, patterns and relationships as you collect data. As a result, you will be able to re-code and re-categorise your existing data to see whether emergent themes, patterns and relationships are present in the cases you have previously analysed. In addition, you will be able to adjust your future data collection approach to see whether they exist in cases where you intend to conduct your research.

13.2 You will generate three sorts of data that you will need to retain and file as the result of undertaking qualitative research.

The first of these are your raw data files. A wide range of data potentially fit within this category. These include audio-visual recordings, documents, images, original notes, written up notes and transcripts you make or collect.

The second of these are your analytical files containing your coded and categorised data. Alternatively, these may contain your summary or your narrative.

The third of these are supporting files, containing working papers, self-memos, interim reports and so forth. You should keep all of this until after your research project has been assessed and your mark awarded.

Eventually, you will create a fourth type of file – containing your finished work!

13.3 a There are a number of implications of using a deductive analytical approach for the way in which you conduct the process of qualitative analysis:

- You will be in a position to commence your data collection with a well-defined research question and objectives and a clear framework and propositions, derived from the theory that you will have used.
- With regard to sampling, you will be able to identify the number and type of organisations to which you wish to gain access to undertake data collection to answer your research question and meet your objectives.
- The use of literature and the theory within it will shape the data collection questions that you wish to ask those who participate in your research project.
- You will be able to commence data collection with an initial set of categories and codes derived from your theoretical propositions/hypotheses and conceptual framework linked to your research question and objectives.
- This approach will provide you with key themes and patterns to search for in your data, and your analysis will be guided by the theoretical propositions and explanations with which you commenced.

b The main implications of using an inductive analytical approach for the process of qualitative analysis are likely to be related to:

- managing and categorising a large number of code labels, which will probably emerge from the data that you collect;
- working with smaller rather than larger units of data;
- recognising significant themes and issues during early analysis to help you to consider where data collection should be focused in the future;
- recognising the relationships between categories and rearranging these into a hierarchical form, with the emergence of subcategories;
- seeking to verify apparent relationships against the actual data that you have collected;
- understanding how negative cases broaden (or threaten) your emerging explanation;
- recognising the relationships between the principal categories that have emerged from this grounded approach to develop an explanatory theory;
- being rigorous in your analysis so as to produce a research report that contains findings that are sufficiently 'grounded' to substantiate the analysis or theory that you are seeking to advance.

13.4 Key similarities include the important point that these are both forms of thematic analysis, as we recognise in Section 13.3. Both are flexible in relation to not being tied to a specific methodological or philosophical approach; they are also flexible in relation to their approach to theory development. Key differences relate to the development of themes and recognising relationships between these: in Thematic Analysis, themes are principally developed after the coding of all data has occurred; in Template Analysis, a template is developed after an initial round of coding and themes and the relationships between these are subsequently mapped onto this emerging template. As a result, themes are developed much earlier in Template Analysis compared with Thematic Analysis. Template Analysis also emphasises the hierarchical nature of analysis and may result in more thematic levels of analysis compared to Thematic Analysis.

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Chapter 14



Writing and presenting the project report

Learning outcomes

By the end of this chapter, you should be able to:

- identify issues when undertaking writing for your project report;
- recognise different ways to structure your project report;
- differentiate between an academic and a consultancy project report;
- identify an accessible writing style for your project report;
- demonstrate an appropriate writing style for your project report;
- recognise the need to meet assessment criteria;
- recognise the features of a reflective account;
- discuss different ways to present your project report orally;
- progress you research project by writing and presenting your project report.

14.1 Introduction

Some of you may view the process of writing your project report and presenting it orally as an exciting prospect. However, it is more likely that you will approach this stage of your research with some trepidation. This would be a great pity. We believe that writing about your work is the most effective way of clarifying your thoughts. Writing may be the time when we think most deeply. This suggests that writing should not be seen as the last stage of your research but, as we illustrated at the start of this book in Figure 1.2, thought of as something that is continuous throughout the research process. In this way your project report may be seen as something you develop throughout your research rather than leaving it until every other part has been completed.

Writing is a powerful way to learn. Most teachers will tell you that the best way to learn is to teach. This is because of the necessity to understand something thoroughly yourself before you can begin to explain it to others. This is the position you are in as the writer of your project report. You have to explain a highly complex set of ideas and findings to an audience that you must assume has little or no knowledge of your subject. There is another problem here, which



has a parallel with teaching. Often, the more familiar you are with a subject, the more difficult it is to explain it to others with no knowledge of that subject. You will be so familiar with your research topic that, like the teacher, you will find it difficult to put yourself in the place of the reader. The result of this is that you may fail to explain something that you assume the reader will know. Even worse, you may leave out important material that should be included.

However, why do most of us view writing with such concern? This may be because of our experience of writing. Many of us are afraid of exposing our efforts to an audience that we feel

Writing within a specified structure



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Have you ever written or read a haiku?

A haiku is a Japanese poem with a tightly specified structure that traditionally has evoked themes of nature and imagery of a specific season. Most haikus comprise three lines and a total of 17 '*on*', that is separate sounds. '*On*' are counted differently to syllables in English, and some translators consider 12 syllables would be closer to the 17 Japanese sounds. However, for others, the first line of haiku comprises five syllables, the second line seven syllables and the final line five syllables. Even if the haiku does not evoke nature or include a *'kigo'* – a word or phrase that suggests a specific season – the poem should pay attention to small details and set the mood with a very few words. It should also use a *'kireji'*, a cutting word that creates a pause in the poem allowing images to be juxtaposed.

Drafting my report,

Ideas swirling in my mind —

While the blank screen taunts.

The poem you have just read was written using the haiku's tightly specified structure. It captures a reality for many of us when starting to draft a project report: a mind full of ideas, which are difficult to grasp and put into order, and our fear of not being able to get these ideas clear in our mind or commit them to words. Within this poem, the word 'While' allows the image of ideas swirling to be juxtaposed with the blank computer screen, helping set the mood.

When writing your project report you, like a haiku poet, will need to work to a specified structure. The assessment criteria set by your university and the conventions of research reporting will suggest this structure and the associated content. This is of considerable benefit as it reveals both how your readers (and assessors) are expecting you to present your research and helps you ensure your content meets what is expected.

will be more likely to criticise than encourage. In our education much of our writing has been little more than rehashing the ideas of others. This has taught us to think of writing as a boring, repetitive process. Some of us are impatient. We are unwilling to devote the time and energy (and inevitable frustration) that is needed for writing.

This fear of criticism is captured perfectly by Richards (2020), who recites the story of being asked by the distinguished sociologist Howard Becker to adopt his method of sitting down and writing what came into her head about the research she had done without even consulting her notes. Her fears of producing poor-quality material, which would be derided by colleagues who saw her work, are described vividly. It is a fear most of us experience as we write about our research whether for an academic or practitioner audience.

This chapter looks at issues that can concern you as you write your report. As we noted in the opening vignette, clarifying our ideas and drafting the research report is a concern for many of us. In this chapter we begin by looking at some general issues about undertaking writing (Section 14.2) and different approaches to reporting research (Section 14.3). The next three sections recognise that reporting conventions can differ for projects depending upon your audience, research approach and research strategy. In section 14.4 we outline the traditional (academic) project report structure, considering in subsequent sections alternative (academic) project report structures (Section 14.5), and composing a consultancy report for an organisational audience. (Section 14.6)

Structural issues continue to be important after you have devised an overall structure for your project report. In Section 14.7 we look at some ways in which you may make the content of your report clear and accessible to your readers. Also critical to your ability to produce a clear and accessible project report will be your writing style. In Section 14.8 we offer insights regarding how to develop an appropriate writing style for your project report. Underpinning your choice of structure, the way in which you compose the content of your report and the writing style you use will be your concern to meet the assessment criteria. In Section 14.9 we consider generic criteria that often inform those set by universities to assess project reports, noting that these can help you ensure your report's content meets what is expected.

Many universities also require a reflective essay or statement as part of your project report. This can be developed from the entries you have made in your reflective diary throughout the research process when answering the questions in Box 1.4 (Section 1.5). We consider this in Section 14.10. For many of us the fear of making an oral presentation is even more daunting than writing. As we note in Section 14.11, some of this apprehension can be overcome by thorough preparation and this section examines the preparation and delivery of the oral presentation.

14.2 Undertaking writing

Like others (Gray 2020; Martin 2019) we believe writing regularly throughout your research project is crucial. Before you commence your research, you will need to draft your research proposal (Sections 2.6 to 2.9). As you undertake your research you will be writing summaries, self-memos or entries in your research notebook and keeping a reflective diary (Sections 1.5 and 13.5). You will also be consulting literature related to your research topic and drafting an early version of your literature review, and then revising this as your research progresses (Chapter 3). As you plan your data collection strategy you will begin to draft your methods chapter and your writing will continue as you analyse your data.

Approaching writing as a regular activity, undertaken daily throughout the research project, is likely to be helpful in a variety of ways. It should help to progress the task of

producing your project report and avoid it becoming a monumental task on which you will need to binge, writing every possible moment to meet the submission deadline (Martin 2019). It should also help to focus your thoughts and aid your analysis. We now consider some practical hints to assist you in undertaking your writing.

Set aside time for every day

You may feel writing is not an activity that can be allocated an odd half-hour whenever it is convenient, believing it requires sustained effort and concentration. However, it is increasingly argued that what is important is to set aside time and write every day (Gray 2020; Martin 2019), even if it is only 15 to 30 minutes of concentrated time. Writing regularly on successive days will also help to ensure the continuity of your ideas and avoid having to keep 'thinking your way back' into your research.

Write when the mind is fresh

Writing is a creative process, so it is important to write at the time of day when your mind is at its freshest. All of us have jobs to do that require little or no creativity so arrange your day to do uncreative jobs when you are at your least mentally alert.

Find a regular writing place

Writing is often best undertaken in the same place. This may be because you are psychologically comfortable in a particular space. It may be for more practical reasons. If that space is your own room you will already be familiar with the need to make sure you do not disturb yourself or allow others to do this. Switching off all distractions such as your mobile phone, social media and television and putting a 'do not disturb' sign on the door may allow you to work undisturbed in your own room. However, if this doesn't work, you may be able to concentrate better if you find a neutral space, such as an area in your university's library, where you can write without your possessions or your friends being able to distract you! What is important is to know what distracts you and to remove those distractions.

Create a structure for the writing

Writing requires structure. Your research project is likely to be one of the largest pieces of written work you undertake. We discuss ways in which you may create an overall structure to write up your research project in Section 14.5. You will also need to create a structure for each chapter.

It is important to think about what you want a chapter to contain before you attempt to write it. As you work though the material you have assembled to write a chapter and jot down ideas that flow from this, you will start to work out how your ideas and this material may be grouped and how such groupings may be related to one another. Your purpose will be to create a sequential structure for the chapter you intend to write up.

Once you have a structure for the chapter composed of sections and possibly subsections, you can start to write each section in turn. One approach that can help is to write a key sentence for each paragraph (Gray 2020) which, when combined, can provide the structure for the section you are drafting. Even if you alter your structure or rearrange the order of the sections within it, you will have a framework to guide the writing of the chapter on which you are working (Box 14.1).



Box 14.1 Focus on student research

Devising an outline structure

Andrea found the task of writing each part of her project report to be demanding. She wrote a little bit of her literature review every day in the early stages of her research project. She felt that this early attempt lacked coherence and development. She returned to the planning phase of her literature review and mapped her ideas using some mind-mapping software.

This process provided her with a number of discrete ideas from the literature related to her research question that she wanted to include in her review. She worked on the order of these ideas until they matched the flow of her research objectives. This provided her with an idea or ideas for each section of her review. She then devised headings for each section and for the various sub-sections. She now had the 'skeleton' or framework of her literature review. This provided Andrea with an outline structure to start to write her literature review, and she now worked on writing the key sentences for each paragraph.

As she drafted her key sentences, the wording of some her headings changed, as did the order of some of the subheadings. However, she found the creation of this type of outline structure or framework helpful, facilitating her writing and providing targets to complete, such as a section in a given period. She used the same approach to write each of the other parts of each project report.

Set goals and achieve them

When writing, it can help to set a goal or target. You may set yourself the goal to write a section of a chapter in a given period, or to target writing a number of words. This can be helpful where you have fixed deadline and need to judge if you are 'on time'. However, it is important to be realistic about these goals. If you are too ambitious the quality of your work may suffer as you rush to meet your target.

Finish a writing session on a high point and provide a link to a new session

Writing is about ideas. Many writers prefer to get to the end of a section before they finish writing so that they do not lose any ideas they develop during that session. The worst thing you can do is to leave a complex section half completed as it will be difficult to pick up your thoughts and ideas (Box 14.2).



Box 14.2 Focus on student research

Getting restarted

Veronika always tried to complete a section or sub-section when writing. This allowed her to concentrate on a set of ideas without interruption. When she did not have time to complete a section or sub-section, she made notes about her ideas to act as an aide-mémoire for her next writing session.

Veronika also found it useful to start a writing session by re-reading the section on which she had worked previously. Her mind was very 'clear' at the start of a new writing session, and she was able to improve her previous work. Re-reading also refreshed her thoughts about what she had written and helped her focus about what she wanted to achieve next.

Start a new writing session by reviewing your previous session

We find it helpful to commence a new writing session by quickly reviewing and revising what we wrote in the previous session. This offers two benefits. First, it allows you to review what you wrote previously with a fresh mind and, where necessary, revise it. Second, it will help you to refamiliarise yourself with your ideas as you to progress your writing (Box 14.2).

Ensure earlier versions and backup copies of work are kept

Writing is time-consuming and enables you to develop your ideas and complete your analysis, so don't forget to create a backup copy of the current version of your writing as well as earlier drafts on a daily basis. You may need them if your computer stops working or you wish to revert to an earlier version (Box 14.3).

Get friends to read the work

Writing is creative and exciting but checking our work may not be! The importance of getting someone else to read through your material cannot be overemphasised. Your project tutor should not be the first person who reads your report, even in its draft form.

Ask a friend to be constructively critical. Your friend must be prepared to tell you about things in the text that are not easy to understand – to point out omissions, spelling, punctuation and grammatical errors. Overall, your friend must tell you whether the piece of writing makes sense and achieves its purpose.

This is not an easy process for you or your critical friend. Most of us are sensitive to criticism, particularly when the consequence of it is the necessity to do a lot more work.

Many of us are also hesitant about giving criticism. However, if your project report does not communicate to the reader in the way it should, you will get it back for revision work in the long run. It is much better to try to ensure that this does not happen.



Box 14.3 Focus on student research

'Help, I've lost my research project'

Ross had heard of cases where others hadn't been able to submit their assignments because of computer problems. He had always found his course demanding and wondered how he would cope if the same happened to him.

This made him determined to keep at least one backup copy of every document that he created or altered. It would be disastrous if he lost any of his files without these being backed up. He very carefully followed the same routine every time he worked on his project. At the end of every session, he backed up files he had worked on or new files he had created on to a USB mass storage device that he kept specifically for his research and on the cloud. On every Sunday afternoon he also emailed all his project files to himself.

A few weeks into his project he encountered a problem with his laptop. He took it to the Students' Union, where there was an IT shop. They examined the machine and told Ross that his solid-state drive had failed. Ross was annoyed and shocked by this. He was reassured, however, because earlier electronic versions of his work had been saved carefully and he had a backup copy of the most recent version.

14.3 Reporting approaches and report structures: an overview

Before you consider different ways to structure your project report, it is important to realise the structure you use will emphasise (or reflect) certain aspects of your research. Every writing form, be it a novel, newspaper report, haiku poem or journal article has associated structure norms (Pollock 2021). Your research report is no different. Yin (2018) has summarised a variety of potential underlying 'reporting approaches' in terms of what they emphasise or reflect. Of these, five may, potentially, be suitable for your project report. They are:

- linear-analytic;
- comparative;
- chronological;
- theory building;
- suspense.

We outline these before discussing the traditional and alternative ways to structure your research report.

Approaches

Linear-analytic approach

In a linear-analytic approach a project report is structured logically to reflect the research process. The traditional way to structure a project report is essentially a linear-analytic approach. It is well suited to a deductive, theory-testing approach but is also adaptable to other research approaches.

Comparative approach

In a comparative approach the structure allows analytical comparisons to be made. Different types of comparisons may be made. In one type of comparative approach, the structure will reflect the fact that different but related data sets are analysed so that the results of these may then be compared. In another, the structure used will reflect the fact that the same set of data is analysed more than once using different analytical perspectives to allow the results of these analyses to then be compared.

Chronological approach

In a chronological approach the structure emphasises the sequence of events evident in the data set. At its simplest, this is essentially an historical account, where it is important to use a structure that allows the data to be reported in a chronological way to understand how the order of events and contextual factors produce cause-and effect sequences.

Theory-building approach

In a theory-building approach the structure emphasises the emergence and refinement of research ideas and the development of themes, relationships and explanations as data are collected. Whereas the linear-analytic approach presents the research process in a logical, rational and 'sanitised' way, the theory-building approach is likely to present research as an emergent and messy process, but which ultimately produces a convincing story and

compelling theoretical explanation. This approach may resemble a chronological approach, albeit that it reports how a theory is developed rather than documenting the sequential development of explanations.

Suspense approach

In a suspense approach, the structure allows the reader to understand how an explanation has been built. Yin (2018) suggests that the explanation or answer to the research question is presented in the introduction. The structure of the project report is then devoted to exploring alternative explanations of the phenomenon being studied to be able to evaluate why the chosen explanation is the most convincing.

Structures

Thinking about potential reporting approaches should help you to evaluate what type of structure will best suit your project report. They should prompt you to ask yourself the following questions:

- How does my research design affect the way I might structure my project report?
- How does the way I analysed my data affect the way I might structure my project report?
- How does the purpose of my research affect the way I might structure my project report?
- How does the audience of my research affect the way I might structure my project report?

Your answers to these and other questions you ask yourself, questions may lead you to adopt the traditional (academic) structure (Section 14.4) to write your project report, or to seek to adapt this structure, or to use an alternative structure for an academic (Section 14.5) or practitioner audience (Section 14.6). Charmaz (2014) refers to the traditional way to structure a project report as a 'logico-deductive' approach. In this approach, the report's structure reflects the logic and linear nature of a deductive approach. There are two ways in which structures may vary from the traditional structure, related to the content and audience of the report's content. First, in relation to content, this may be arranged differently, or in a more integrated way, to that of the traditional structure. For example, rather than placing the literature review immediately after the introduction, as is the case in the traditional structure, it may be considered later in an alternative structure, or integrated throughout the report. Second, in relation to the audience, the material in the report will vary, the content of an alternative structure focussing on different aspects to those needed for an academic audience.

It would be unwise to suggest that a specific report structure must be used for a particular research strategy. Researchers using the same research strategy write up their work using different structures. They may choose to use the traditional structure, variations on this, or an alternative practitioner focussed structure. Inductive and abductive approaches are sometimes associated with alternative ways of presenting and structuring a project report and, as we will see structures can be associated with different strategies (Section 14.5) and audiences (Sections 14.4 and 14.6).

Whichever structure you wish to adopt, you will first need to check that this will meet three requirements. First, is it permissible? Will your university allow you to use the structure you devise? You may be able to discuss this with your project tutor. Second, will it be clear to those who will read your project report (your audience), allowing them to understand what you have done, and third will it allow you to show how you have sought to answer your research question? Where you can exercise some choice about how to structure your project report, you will need to think about the second and third requirements carefully to ensure that your proposed structure is fit for purpose.

14.4 The traditional (academic) report structure

The traditional structure for an (academic) project report generally contains the following parts:

1 Abstract;
2 Introduction;
3 Literature Review;
4 Method;
5 Findings/Results;
6 Discussion;
7 Conclusions;
8 References;
9 Appendices.

Some of these parts are likely to be required irrespective of the structure you use to write up your project report. These include an introduction and conclusions, even if these are titled differently, as well as an abstract, references and any appendices. The substantive parts in between these are likely to vary when you use an alternative structure in relation to an inductive research strategy such as Action Research, a case study, ethnography, Grounded Theory or narrative inquiry, as we go on to discuss later.

Abstract

The **abstract** is a short summary of the complete content of the project report. It often contains four short paragraphs with the answers to the following questions:

1 What were my research questions and why were these important?
2 How did I go about answering the research questions?
3 What did I find out in response to my research questions?
4 What conclusions do I draw regarding my research questions?

A good abstract should be short (generally between 150 and 300 words), self-contained, a reflection of the report's content, adequate to inform your reader about the report, objective, precise and easy to read.

The academic publisher Emerald gives advice to potential academic authors on how to compile an abstract. This is shown in Box 14.4. Although referring to academic journal articles (papers), it is useful to consider in terms of preparation of your research report. Writing a good abstract is difficult. The obvious thing to do is to write it after you have finished the report. We suggest that you draft it at the start of your writing so that you have got your storyline abundantly clear in your mind. You can then amend the draft when you have finished the report. Box 14.5 contains an example of an abstract by Mark and colleagues.

Introduction

The **introduction** should give your reader a clear idea about the central issue of concern in your research and why you thought that this was worth studying. It should also include a full statement of your research question(s), research aim and research objectives. If your research is based in an organisation, we think that it is a good idea to include some brief details about the organisation, such as its history, size, products and services. This may be a general background to the more specific detail on the research setting you include in the method chapter.



Box 14.4 Focus on management research

How to write a structured abstract

You should:

- Report the essential facts contained within the document
- Not exaggerate or include material that doesn't feature in the main text
- Avoid abbreviations that are only explained in the main text. Your abstract should be able to stand alone
- Not dwell on the previous literature – this is a summary of your work

. . . your abstract should be a succinct statement that gives the reader context. Most journal author guidelines set a maximum of 250 words The following points should always be featured:

- ***Purpose:*** This explains 'why' you undertook this study. If you are presenting new or novel research, explain the problem that you have solved. If you are building upon previous research, briefly explain why you felt it was important to do so. This is your opportunity to let readers know why you chose to study this topic or problem and its relevance. Let the reader know what your key argument or main finding is.
- ***Study design/methodology/approach:*** This is 'how' you did it. Let readers know exactly what you did to reach your results. For example, did you undertake interviews? Did you carry out an experiment in the lab? What tools, methods, protocols or datasets did you use?
- ***Findings:*** Here you can explain 'what' you found during your study, whether it answers the problem you set out to explore, and whether your hypothesis was confirmed. You need to be very clear and direct and give exact figures, rather than generalise. It's important not to exaggerate or create an expectation that your paper won't fulfil.
- ***Originality/value:*** This is your opportunity to provide readers with an analysis of the value of your results. It's a good idea to ask colleagues whether your analysis is balanced and fair and again, it's important not to exaggerate. You can also conjecture what future research steps could be.

The following three items should be included, if relevant to your paper:

- Research limitations/implications
- Practical implications
- Social implications

Follow the chronology of the paper, using headlines as guidelines if necessary. Make sure there is a consistent flow of information.

The language should be active rather than passive, e.g. 'we carried out an analysis', rather than 'an analysis was carried out' . . .

Source: Emerald Group Publishing (2022) Abridged from advice on the Emerald website, https://www.emeraldgrouppublishing.com/how-to/authoring-editing-reviewing/write-article-abstract

It is also important to include a 'route map' to guide the reader through the rest of your report. This will give brief details of the content of each chapter and present an overview of how your storyline unfolds. You will probably find it helpful to write the introduction after drafting the rest of your report to ensure that it accurately represents the report's content.

Literature review

In the traditional, logico-deductive structure your literature review is placed before the method chapter. The main purpose of your literature review is to set your study within its wider, theoretical context so the reader understands how your study relates to the work that has already been done on your topic. The literature review will directly inform your research questions (Box 14.6) and any specific hypotheses or propositions your research is designed to test.



Box 14.5 Focus on management research

Abstract from a refereed journal article in the *Human Resource Management Journal*

Abstract

Research investigating training and firm performance is currently at an inflection point; capable of recognising previous achievements but also having a focus on the future. Based on our review of 207 quantitative papers over a 40-year period, we find that the field has converged in terms of theory and methods. Important insights have been generated yet there is scope to better understand the complex, interrelated and dynamic nature of the relationship between training and firm performance. We propose that open systems theory (OST) provides the potential to move the field forward and encourage researchers to investigate interactions and linkages between training and performance components, the role of temporal dynamics in inputs and processes, reverse causality and to broaden conceptualisations of firm performance. We consider six principles of OST, highlight productive avenues for future research and identify methodological challenges and implications.

Source: Garavan, T.N., McCarthy, A., Lai, Y., Clarke, N., Carbery, R., Gubbins, C. Sheehan, M. and Saunders, M.N.K. (2021) 'Putting the system back into training and firm performance research: A review and research agenda', *Human Resource Management Journal,* Vol. 31, No. 4., p. 870.

The title of your literature review chapter should reflect the content of the chapter and we do not recommend that you simply call it 'Literature Review'. It may be that your literature is reviewed in more than one chapter. This may be the case, for example, where you were using more than one body of literature in your research.



Box 14.6 Focus on student research

Using the literature review to inform the research questions

Guiyan was a Chinese student studying for a master's degree. In her research project she was interested to know whether Chinese managers would be able to conduct performance appraisal schemes effectively in China with Chinese employees. She was aware that there were certain aspects of Chinese culture that would make this difficult. Guiyan studied two bodies of literature: one relating to the managerial skills of performance appraisal and a second concerned with the effects of Chinese culture on the ways in which Chinese managers manage their employees. She presented both in a literature review chapter. She structured her chapter around the two topic areas suggested by her research questions:

1. What are the key skills needed by managers to conduct performance appraisal effectively?
2. What are the most important aspects of Chinese culture which impact upon on the ways in which Chinese managers manage their employees?

These enabled her to contextualise her overarching research question:

> To what extent do aspects of Chinese culture affect the ability of Chinese managers to conduct effective performance appraisals?

From this, Guiyan developed a theoretical proposition that supported her initial idea that certain aspects of Chinese culture would make the conduct of performance appraisal by Chinese managers with Chinese employees difficult. She was then ready to move on to her method chapter, which was an explanation of the way in which she would test her theoretical proposition.

Method

This detailed and transparent chapter should give the reader sufficient information to understand why you chose the method you used, to assess the reliability or dependability of the procedures and techniques you used, and to evaluate the validity or credibility of your findings (Section 5.8). Crucial within this methodological transparency so that your readers know precisely how you collected your data and the reasons for this (Aguinis et al. 2018), your choices being justified by the research methods and methodology literature. Box 14.7 provides a checklist of the points you should address in the method chapter.



Box 14.7 Checklist

Points to address in your method chapter

Research setting

- ✔ What was the research setting and why did you choose it?
- ✔ How suitable was it to answer your research question and address your objectives?
- ✔ When did you conduct the research and how did its timing affect your ability to answer your research question and address your research objectives?

Selecting the sample

- ✔ Where probability sampling was used what was the sampling frame for your research?
  - What was the size of your intended sample and how did you decide this?
  - Which sampling technique did you use and why was this most appropriate?
  - What was the response rate?
  - How representative was your actual sample in relation to the target population?
- ✔ Where non-probability sampling was used how did your intended sample relate to your research question and objectives?
  - Which sampling technique did you use and why was this most appropriate?
  - How do the characteristics of those who took part match those of your intended sample and what are the characteristics of those who declined to take part?
- ✔ For either type of sampling, where your research was affected by the possibility of non-response error how did you respond to this?

Data collection

- ✔ Which data collection method or methods was used and why?
- ✔ How was the method, or methods, developed and tested?
- ✔ How were potential participants/ respondents/ informants approached to take part?
- ✔ What instructions and ethical assurances were given to those from whom data were collected?
- ✔ How was this method (or these methods) conducted/ administered/ delivered/ completed (and where delivered how was this collected) and why?
- ✔ Was the data collection process truly voluntary?
- ✔ How long (on average) did each respondent/participant/informant spend providing data?
- ✔ What issue or issues was associated with any aspect of data collection and how was this/were these resolved?

Data analysis procedures

- ✔ How were the resulting data analysed?
- ✔ What issue or issues was associated with any aspect of data analysis and how was this/these resolved?
- ✔ Have you ensured that procedures (including statistical techniques) were applied correctly and, where appropriate, assumptions satisfied?

Reliability or trustworthiness, validity and generalisability, or credibility and transferability

- ✔ Have you assessed the validity/credibility of the measures you used in the research?



Box 14.7 Checklist (*continued*)

Points to address in your method chapter

- ✔ Have you assessed the internal validity/credibility of your findings?
- ✔ Have you explained how you sought to ensure reliability/dependability of your findings?
- ✔ Have you assessed the generalisability/transferability of your findings?
- ✔ Have you recognised the limitations of your research?

Ethical concerns

- ✔ Which ethical issues were raised by the study and how were these addressed?

Use of literature

- ✔ Have you used the research methods and methodology literature to help justify your choices and related these explicitly to the assumptions of your own philosophical position?

Findings/results

This is where you report your results and is probably the most straightforward part of your report to write. Where you have analysed your data quantitatively, you will include the results of your statistical analyses and use tables and graphs to illustrate your findings (do not put these in the appendices if they are important to your argument). We outline how to do this later in this section as well as in boxes in Chapter 12. Where data are analysed qualitatively you are likely to include illustrative quotations to convey the richness of your data and offer insights. We offer alternative ways of doing this later in this section. Your findings/results may be composed of more than one chapter. The question you should ask yourself is: 'Is more than one chapter necessary to communicate my findings/results clearly?'

The purpose of your findings/results chapter is to present the results of your data analysis. It is normally not appropriate in this chapter to discuss these results. This is the purpose of your discussion and conclusions chapters. Many of us become confused about the difference between findings and discussion. One way of overcoming this is to draw up a table with two columns. The first should be headed 'What I found out' and the second 'What judgements I have formed based on what I found out'. The first list will be based on your data analysis (e.g. 66 per cent of responding customers indicated they preferred to receive email messages rather than mail shots) and the content of your findings/results. The second list will be your judgements based on what you found out (e.g. it appears that electronic forms of communication are preferred to traditional) and the content of your discussion chapter (Table 14.1).

Table 14.1 Using a matrix to plan the results and conclusions chapters

Research question(s)	Results chapter	Conclusions chapter
Ask yourself . . .	*. . . what factual information did I discover in relation to the specific research questions?*	*. . . what judgements can I make about the results in relation to the specific research questions?*
What are the operational differences between different shifts in the production plant?	Cases of indiscipline in the last six months have been twice as frequent on the night shift as on the day shift	The night shift indiscipline problems may be due to the reluctance of operators to work on this shift

Drawing up this table will lead you to the way in which you present your findings. The purpose of your project report is to clearly communicate the answer to your research question. You should structure your findings in a clear, logical and easily understood manner. There are many ways of doing this. One of the simplest is to return to your research objectives and let these dictate the order in which you present your findings. Alternatively, you may prefer to report your findings thematically. You could present the themes in descending order of importance. Whichever method you choose should be obvious to the reader. As with the literature review, the chapter(s) devoted to results should be titled in an interesting way that reflects the content of findings. The clarity of your findings should be such that they could be part of a news report (Box 14.8).



Box 14.8 Focus on research in the news

Centrica profits double as households brace for energy price hike

By Gill Plimmer

British Gas owner Centrica has repaid a £27mn government loan used to pay staff furloughed during the pandemic and held back its chief executive's bonus as it posted a doubling of profits weeks before households face a record increase in their bills.

Centrica, which has almost 11m customers, said adjusted operating profits rose by 112 per cent to £948mn in 2021, bolstered by surging profits from its North Sea oil and gas business.

The company also said it was helped by unusually warm weather in the last three months of the year, which allowed it to sell gas and electricity it had bought in advance and cash in on high energy costs.

The profit rise will fuel political concerns over rising energy bills for households. In April average bills will rise to almost £2,000, an increase of almost £700, driven primarily by high gas prices.

Chris O'Shea, Centrica's chief executive, said the company had 'delivered a huge tax windfall for the government and that's quite right'.

He said he would waive a £1.1mn bonus awarded in addition to his £775,000 salary and postpone the reintroduction of dividend payments until later this year, after shelving payouts in 2020 in a move aimed at preserving capital at the onset of the pandemic.

British Gas had been losing customers due to intense competition over the past decade, but the collapse of 33 energy suppliers since January 2021 has benefited the company, which has 'hedged' or insured against price rises. Under its 'supplier of last resort' regime, the industry regulator Ofgem has transferred hundreds of thousands of customers of failed energy groups over to British Gas, swelling customer numbers by 676,000.

O'Shea called for strengthened regulations to ensure that a 'crisis of this sort never happens again'. 'We believe we need to see significant change to address the underlying issues in the UK's complex energy regulations, by simplifying and strengthening regulations to protect customers,' O'Shea said.

FT

Source: Abridged from: 'Centrica profits double as households brace for energy price hikes', Gill Plimmer (2022) *Financial Times,* 24 February. Copyright © 2022 The Financial Times Ltd

Using tables, graphs, other diagrams and images

Our discussion so far in this section has focused, explicitly or implicitly, on writing your report – in other words producing text and structuring this in a way that suits your research approach. Your report will also be likely to include tables of results, findings or information (referred to as tables), and graphs and other diagrams and images (referred to as figures). Like in this book, these are numbered sequentially within chapters: the first table in Chapter 2 will be 'Table 2.1', whereas the first figure in Chapter 2 will be 'Figure 2.1'.

Tables should not be constructed unless it is essential to show repetitive data (Gastel and Day 2017). Using text is often a more effective way to present findings and where these are presented in a table they should show those that are significant rather than present a long list of words. Tables allow a large amount of information to be included, summarised and compared using several rows and columns (Table 11.1 and 12.3).

We discuss when and how to use graphs in Sections 12.5 to 12.7. Other types of diagrams are also used in this book. For example, Figure 1.2 provides a pictorial representation of the research process and the use of colour in this figure allows you to distinguish between different aspects of the process. You may also consider including selected images such as digital photographs. All forms of graphical and pictorial representation are labelled as figures.

Using quotations

We believe it is important to support your findings by including selected quotations from your transcripts, diaries and other documents you have used as secondary data in your project report. Most researchers who use interviews include direct quotations from these to support their findings, although a few report interview research without presenting any quotations (Reissner and Whittle 2021). Quotations usually reflect themes either derived through inductive or deductive analysis of their data and, in interview-based research, are presented using one or more of five practices (Reissner and Whittle 2021: 9):

- 'Sprinkling shorter snippets' format, typically a few words or selected phrases from multiple participants, within a sentence;
- Tabular format with participants' quotations often being linked to themes;
- 'Sandwich' format placing a participant's quotation or participants' quotations between the author's words introducing a theme and subsequently those interpreting the theme;
- 'Open Sandwich' format with the author's words introducing a theme followed by one or more quotations from participants;
- 'Interactional sequence' format with the author's words and participant's quotations in an interactional sequence, this being used rarely, other than in articles using discourse analysis (Section 13.11).

These five practices, offer clear options when writing your project report, tabular and sandwich formats being illustrated in Box 14.9. However, before writing we recommend you discuss with your project tutor which will be acceptable.

Discussion

Findings presented without thought run the risk of your reader asking 'so what?': what meaning do these findings have for me?; for my organisation?; for professional practice?; for the development of theory? The main focus of the discussion is therefore to interpret the results you presented in the previous chapter. You should state the relation of your findings to the research questions or objectives discussed in the introduction. In addition, the discussion should discuss the implications of your research for the relevant theories

Box 14.9 Focus on student research

Present quotations in tabular or sandwich format

Helen's research was on trust between employees in virtual teams. As she drafted her findings, she decided to include selected participant quotations as support for her findings. She was, however, unsure whether to present these findings in tabular or sandwich form. As her assessment criteria did not specify which to use, she decided to draft two possible alternatives. She started by drafting the associated text and creating her table of selected responses:

> Team leaders, in general appeared to have no issues with the technical abilities of those working in their teams, the majority of them emphasising that they were highly skilled (Table 4, Statement 1). However, whilst they trusted their team members technical abilities, they did have concerns regarding the integrity of some members, in particular whether they would cut corners rather than doing the work to a high standard (Table 4, Statement 3) . . . This was particularly evident in . . .

She the redrafted the paragraph sandwiching the quotations within her text:

> Team leaders, in general appeared to have no issues with the technical abilities of those working in their teams, the majority of them emphasising that they were highly skilled. A typical response

Table 4 Selective interview data regarding trust in virtual teams

Statement number	Participant	Theme (s)	Statement
1	TL1	Trust–ability	'I have no concerns about the ability of people in my team to do the job well. We only recruit those with excellent technical skill sets.'
2	C3	Trust–integrity	'She's an absolutely amazing colleague. I would trust her with my partner as well as in work matters. When I discuss a confidential issue with her via Zoom I know she will not betray my confidence.'
3	TL3	Trust–integrity and Trust–ability	'It's like who they are, you know they will do what they say they will, and they will not cut any corners. You will get a fantastic job done to a very high standard by a person who has the right skills. I trust them 100 per cent even though I have never met them face-to-face. However, this is not the case for all my team members. Some cut corners and do a quick fix rather than sorting things out properly if they think they can get away with it . . . And you only find out later when it goes wrong again, and the customer complains.'
4	C5	Trust–benevolence	'My team leader really cares about her team. If I have a family issue such as a childcare problem, I know I can message her, and she will allow me to work around the issue. She always says "family comes first".'

TL = **T**eam **L**eader, C = **C**onsultant

Box 14.9 Focus on student research (*continued*)

Present quotations in tabular or sandwich format

by a team leader emphasises this: 'I have no concerns about the ability of people in my team to do the job well. We only recruit those with excellent technical skill sets (TL1). However, whilst team leaders trusted their team members technical abilities, they did have concerns regarding the integrity of some members, in particular whether they would cut corners rather than doing the work to a high standard:

> 'It's like who they are, you know they will do what they say they will, and they will not cut any corners. You will get a fantastic job done to a very high standard by a person who has the right skills. I trust them 100 per cent even though I have never met them face-to-face. However, this is not the case for all my team members. Some cut corners and do a quick fix rather than sorting things out properly if they think they can get away with it . . . And you only find out later when it goes wrong again, and the customer complains.' (TL3)

This was particularly evident in ...

that you detailed in your literature review. It is usual to discuss the strengths, weaknesses and limitations of your study. These limitations may be about the size of sample, the snapshot nature of the research, or the restriction to one geographical area of an organisation. Virtually all research has its limitations. This section should not be seen as a confession of your weaknesses but as a mature reflection on the degree to which your findings and subsequent conclusions can be said to be generalisable.

The discussion is where you have the opportunity to shine. It will show the insight that you exhibit in reaching your conclusions. However, it is the part of the report that most of us find difficult. It is another opportunity to demonstrate real originality of thought as you are making judgements rather than reporting results.

Conclusions

This chapter should not be used to present any new material and should be a conclusion to the whole project (not just the research findings). The conclusions should summarise the main ideas in your research report, including your research question and aim and objectives. They should provide a brief recap of what you did, demonstrating why your findings are important and useful, and pointing to their wider implications. They therefore adopt a specific to general structure.

You may find that the clearest way to present your conclusions is to follow a similar structure to the one used in your findings/results. If that structure reflects the research objectives then it should help ensure your conclusions would address them. Drawing up a matrix similar to that in Table 14.1 may help you in structuring your findings/results and conclusions.

An alternative approach to the matrix is to draw a mind map or relevance tree (Sections 2.3 and 3.5), placing the findings randomly on a blank page and linking conclusions to these using lines and arrows. For some of you this may be a more creative approach, which enables you to associate groups of findings with conclusions and vice versa.

Answering your research question(s), meeting your objectives and, if appropriate, supporting or refuting the research hypotheses or propositions is the main purpose of the conclusions. This is where you will consider the findings presented. You should also return to

Box 14.10 Checklist

Do your conclusions answer these questions?

- ✔ Did the research project meet your aim or answer your research question(s)?
- ✔ Did the research project meet your research objectives?
- ✔ What are the main findings of the research?
- ✔ Are there any recommendations for future action based on the conclusions you have drawn?
- ✔ Do you have any overall conclusions on the research process itself?
- ✔ Where should further research be focused? (Typically, this will consider two points: first, new areas of investigation implied by developments in your project, and second, parts of your work that were not completed due to time constraints and/or problems encountered.)

your literature review and ask yourself 'What do my conclusions add to the understanding of the topic displayed in the literature?'

It may be that there are practical implications of your findings. In a management report this would normally be a chapter specifically devoted to recommendations. We suggest that you check your assessment criteria carefully to establish whether this is expected. In reports students are required to prepare on some professional courses this is an important requirement. For some academic programmes it is not required.

Even if you do not specify any practical implications of your research, you should comment in the conclusions chapter on what your research implies for any future research. This is a logical extension of the section in the discussion that considered the limitations of your research. You can check your conclusions using the checklist in Box 14.10.

References

A range of conventions are used to reference other writers' material that you have cited in your text. Appendix 1 explains three of the most popular of these, the Harvard, American Psychological Association (APA) and footnotes systems. However, we suggest that you check your project assessment criteria to establish the system that is required for your project report, as many universities require their own variation of these systems.

If you are not using bibliographic software to manage your references (Section 3.8), it is a good idea to start your references section at the beginning of the writing process compiling your list as you go along. It will be a tedious and time-consuming task if left until you have completed the main body of the text. If you do leave it until the end, the time spent on compiling the reference section is time that would have been better spent on checking and amending your report.

You need to ensure that you have cited in your reference section all those sources to which you have referred in the text. In order to avoid charges of plagiarism you should also ensure that all data and material taken verbatim (that is copied exactly) from another person's published or unpublished written or electronic work is explicitly identified and referenced to its author (see Neville 2016, Section 3.11) giving the page numbers(s) of the copied material if possible. This also extends to work that is referred to in the written work of others. Even if this work is not quoted verbatim, the originator should be cited in your references. If you are in any doubt about this, consult your university's guidelines on how to ensure that you do not plagiarise. The proliferation of online material now is such that all academic institutions are mindful of plagiarism and will almost certainly check your work carefully.

Appendices

Appendices should be kept to the minimum. If the material in an appendix is crucial to your reader's understanding, then it should be included in the main body of your report. If, on the other hand, the material is 'interesting to know' rather than 'essential to know' then it should be in the appendices.

Often students feel tempted to include appendices to 'pad out' their project report. Resist this temptation. Your readers will not be reading your report for relaxation. They will be pressed for time and will probably not look at your appendices. Your project report will stand or fall on the quality of the main text.

However, your appendices should include a blank copy of your questionnaire, interview or observation schedule, or participant diary as well as your consent form and information sheet. Where these have been conducted in a language different from that in which you write your submitted project report you will need to submit both this version and the translation. In addition, some universities also require you to include a copy of your ethical review approval as an appendix.

Recommendations

You may have wondered why we make little reference to recommendations in the traditional academic report structure. In the typical management report or consultancy report (Section 14.6) this is an important section. The hard-pressed executive reading your report may turn to your recommendations first to see what action needs to be taken to tackle the issue.

Whether you include a recommendations section depends on the objectives of your research. If you are doing exploratory research you may well write recommendations, among which will be suggestions for further research. However, if your research is designed to explain or describe, recommendations are less likely. For example, the research question 'Why do small engineering companies in the UK reinvest less of their profits in their businesses than their German counterparts?' may imply clear points for action.

Strictly speaking, recommendations are outside the scope of the research question, which is to discover 'Why?' not 'What can be done about it?' The message is clear. If you want your research to change the situation that you are researching, then include the need to develop recommendations in your research objectives.

The length of the project report

You will probably have guidelines on the number of words your project report should contain. Do stick to these. However interesting your report, your tutors will have others to read, so they will not thank you for exceeding the limit. Reports that exceed the word limit are usually excessively verbose and likely to lose marks. It is more difficult to be succinct. Do not fall into the trap of writing a long report because you did not have the time to write a shorter one.

14.5 Alternative (academic) report structures

In this section we look at the implications of using a variety of academic structures your project report, considering Action Research, case study, ethnography, Grounded Theory and narrative research. Your choice of research strategy may affect the structure of a project report, resulting in a completely different to the traditional, or where some sections within

it are organised differently. Such changes are particularly likely to for the main body of the report (i.e. the literature review, method and results/findings in the traditional structure).

You may be reading this at the time you are writing up your project report and thinking of reading only the sub-section that relates to your research strategy. If so, we would advise you instead to read all the following sub-sections. In writing this section, we found that it didn't really make sense to construct a single section offering ideas about alternative reporting structures for inductive and abductive research approaches. There are clear differences between research strategies that use an inductive or abductive approach, with different implications for reporting structures. While our decision results in some repetition across these sub-sections, you may find ideas that are relevant and helpful to you in a sub-section that does not relate to your choice of research strategy.

Action Research

Action Research is very different to traditional, deductive research (Section 4.5). This is likely to have implications for the way you structure your Action Research project report. Action Research is both emergent and iterative (Section 5.5). It commences in a specific context, guided by an initial research question and works through several stages or cycles with a specific focus on action. Each cycle involves a process of diagnosing, planning action, taking action and evaluating action (Figure 5.6). Learning from each cycle may lead to the focus of the question changing as the research develops. Your task in writing up this research is to devise a structure that allows you to report and evaluate this process without losing its richness and emergent character.

While your report will contain an introduction and a method (Section 14.4), the construction of these and subsequent sections will be affected by your choice of an Action Research strategy. Those who read your report will be interested to know about the context within which this Action Research project occurred and to understand why this strategy was chosen. You therefore need to explain the setting within which this research occurs and to justify why this strategy was appropriate. This will help to establish the credibility of using this research approach and help your readers make sense of what is to follow. Explaining the context may mean that you dedicate a separate chapter to this in your report or you may decide to incorporate discussion of context within another chapter. Justifying your choice of an Action Research strategy and establishing the credibility of this approach will be part of the method. Action Research is a participative form of research, and this aspect is also relevant to consider in both your discussion of the context and method.

In our discussion of the traditional structure we noted the role of the literature review. In writing up deductive research the literature review is placed logically after the introduction and before the method. Theory in the existing literature is used to help to devise the research hypotheses or propositions that are subsequently tested in this approach. In Action Research, as in the other inductive or abductive approaches, different strands of literature become relevant at different points in an emergent research process. In your report you may initially use literature in your discussion of the context of your research, locating your study within existing knowledge by referring to related published studies. This can help to establish the reason for undertaking your project and why you chose to use Action Research. You will also use literature about the theory and practice of Action Research in your method to demonstrate your understanding of this research strategy. However, unless you are required to place the literature review early on in your report structure, you will also need to introduce further strands of literature later in your report, as you interpret and discuss the themes which emerge from your Action Research.

The emergent nature of Action Research involving multiple cycles of research may mean it is inappropriate to present one section of 'findings'. Coghlan (2019) refers to the need to tell the story of an Action Research project. presenting a chronological account of each of the Action Research cycles. This provides a clear outline of the research process and its principal events. At the end of each section or chapter describing a particular cycle, he suggests including a section of interpretation that seeks to make sense of these events and starts to theorise about them. Within this it is important to separate description from sense-making to provide clarity and help establish the rigour and credibility of your research. However, while stressing the importance of separating description from sense-making, he also advises locating interpretation at the end of, or close to, the description of those events, to help readers understand the direction and flow of your work (Coghlan 2019).

Following this part of the report, it is helpful to have a chapter that allows your interpretations to be drawn together into a general discussion, thereby making sense of the project as a whole (Coghlan 2019). Here you will need to return to the literature to contextualise your theorising with prior theory. As Action Research is an emergent process, it is more authentic to introduce and discuss new strands of literature as they became obvious to consult after undertaking Action Research. This means you are unlikely to produce one literature review chapter early in your report as this would imply that all literature was consulted before research commenced! Your purpose in using this literature will be to say how your Action Research links to existing knowledge, how it may be applied in other contexts and possibly how it contributes to Action Research theory and practice. The latter part of your report is likely to include your personal reflections about having participated in an Action Research project and an account of your learning from this experience, such as questioning your assumptions and developing skills related to participation and process (Section 14.10).

Case study

When considering how to structure a report based on case study research, you will need to reflect on how you used this research strategy. In particular:

- was the purpose of your case study research designed to be descriptive, exploratory, explanatory or evaluative?
- was your case study research based on a deductive, inductive or abductive approach?
- was your research based on an orthodox or emergent case study strategy?
- was your case study research based on a single case or multiple cases?
- did you analyse your case study or studies holistically, or did you analyse separate analytical units within each case?

Where the purpose of your case study is descriptive and explanatory, and you use a deductive approach, it may be appropriate to use the traditional report structure (Section 14.4). Where the purpose of your case study research is exploratory (at least initially) and you use an inductive approach, an alternative structure may be more appropriate, particularly if your case study strategy incorporates Action Research, ethnographic research, a theory-building approach or Narrative Research.

Two points are relevant here in relation to your report structure. The first relates to being able to express the reality of your research process and the way in which you analysed your data. Using an inductive or abductive approach (Section 4.5) means the conduct of your research will be emergent and incremental. In some emergent and incremental case-based analytical approaches such as Analytic Induction (Section 13.8), you may find it helpful to devise a report structure that allows you to emphasise the chronology of your research and findings. This will allow your readers to understand what you did and make a judgement about the quality of your research and conclusions. In some other inductive

or abductive research methods, such as Thematic Analysis, Template Analysis and the Grounded Theory Method, the emergent and incremental nature of the research process tends to be subsumed during analysis. While data are collected incrementally in these strategies, the nature of analysis means that these data are merged into the categories and themes being used to analyse them. For these you will probably find it helpful to devise a structure that emphasises themes or theory building.

The second point relates to the place of literature and the role of theory. In an inductive research approach the emergence of themes during data analysis is likely to lead you to consult new strands of literature. You will be seeking to make sense of your data and relate it to existing literature. This involves a different way of working to that implied by the traditional report structure, where the literature review is placed after the introduction and before the method. An inductive research approach has implications for the place of literature, and it may be helpful to include more than one literature chapter in your report structure where you use this or abductive research approach. You may have an initial review of the literature you consulted before embarking on data collection and analysis, and a later, subsequent review of literature you consulted to help to make sense of the themes that emerged from your data. It will be important to demonstrate how your use of literature has allowed you to relate your emergent theory to existing theory.

The inclusion of a single case or multiple cases and the way in which this case or these cases are analysed will also affect the way in which you structure your project report. A traditional report structure may best suit a single case analysed as a whole unit. A case study strategy using a single case in which the embedded analytical units within are analysed separately, or one that includes multiple cases, suggests a reporting structure that allows these different analytical units or cases to be compared. You may therefore use separate chapters or sections in your report to describe the results from, or story of, each case or analytical unit. It will also be likely to include a chapter comparing the results or stories from each case or analytical unit. Alternatively, you may choose a structure where the emphasis is placed on theory building using a cross-case analysis. In this report structure, each case or analytical unit is only considered in relation to the other cases or analytical units being reported and is not described and discussed separately (Yin 2018).

The structure you use will require description of the context of the case study or case studies comparing the characteristics of the case or cases and their importance. You will need to explain whether and how the case or cases you selected purposively for your research are critical, extreme, typical or unique (Section 7.9). Where you use multiple cases you need to explain whether they have comparative power because they:

- represent the same contextual variables (e.g. three marketing departments in the same industry);
- have a similar contextual variable under different conditions (e.g. four finance departments in different industries);
- or have different contextual variables under similar conditions (e.g. a small, medium and large enterprise operating in the same industry).

However, while case study research requires a structure that permits the context of the case study to be described and its analytical importance to be established, it is important to make sure that the structure you choose maintains an appropriate balance between description, analysis and interpretation.

Ethnography

Many ethnographies published in academic journals reflect broadly the traditional report structure in outline. However, the content and the conventions used to write an ethnography are different to those in a typical deductive research report. Watson (2011: 205–6)

defines ethnography as a 'style of social science writing which draws upon the writer's close observation of and involvement with people in a particular social setting and relates the words spoken and the practices observed or experienced to the overall cultural framework within which they occurred'.

Van Maanen (2011a) also emphasises the textual nature of ethnography and the role of writing style in its composition, although he sees it as being composed of several styles. These result from the ways different characteristics of ethnographic research come together in practice. These characteristics include:

- the philosophical position of the researcher (e.g. critical realist or interpretivist);
- the relative emphasis on description, interpretation and theoretical development;
- whether the author writes themself into the text (using the first person, 'I' or 'me');
- the inclusion or exclusion of reflexivity;
- the way participants or informants are referred to and their 'voice' is expressed (e.g. directly by quoting them or indirectly through the author's version of events); and
- the ways in which language and imagery are used (e.g. using 'thick' descriptions, metaphors, tropes, illustrative examples and dramatic representations).

The purpose and nature of ethnographic research will affect how these characteristics emerge in the ethnography and how it is structured. Van Maanen (2011b) discusses several styles of writing ethnography (Table 14.2). These descriptions are necessarily very brief

Table 14.2 Ethnographic account styles

Account style	Description
Realist	The researcher does not write themself into the text and uses a detached documentary style where emphasis is placed on reporting in detail the actions and viewpoints of those being observed. The authorial position is used to interpret the data and to theorise about their meanings. 'Facts' are presented by to support their interpretation
Confessional	Here much greater emphasis is placed on the role of the researcher and how the research was conducted using a highly personalised style of writing. When this style is used in a complete ethnography, the content will reflect cultural descriptions and the researcher's reflections about being there as witness or participant. This may also be embedded within another style of ethnography when reporting the methods used or as a reflective appendix
Critical	Here fieldwork is intentionally conducted within a culture affected by particular political, economic, social or technological factors, allowing the effects of these to be studied on those affected. This account commences from a theoretical framework (often a radical one) and the report places as much emphasis on theory and theorising about the meanings in the data, as on reporting ethnographic details
Formal	Here the purpose is to develop or test a theory, placing emphasis on theoretical considerations and de-emphasises description and contextualisation
Structural	This develops from and merges critical and formal accounts emphasising analysis and conceptualisation, focusing on a cultural process and incorporating first-person reporting. It blends observational reporting and theoretical explanations
Post-structural	Based on a social constructionist perspective emphasising multiple interpretations, this stresses uncertainty about what can be known and is inevitably inconclusive
Advocacy	Here fieldwork is focused on a particular issue or cause, on which the researcher takes a stance, putting forward this point of view clearly. It is unlikely to be appropriate for you to use, not least because theory is likely to be used in a partial way only where it supports the stance being advocated

Source: Developed from Van Maanen (2011b) with additional comments by the authors

but reveal how the style of your ethnographic account will implications for the content and therefore the structure of the resulting ethnography.

Grounded Theory

It is possible to write a Grounded Theory research project using the traditional structure. However, use of this traditional structure flags up several issues. In a Grounded Theory study, your research question is likely to be subject to refinement, initially being broad or fuzzy and later becoming much more focused. Initially literature will be used to contextualise the research and perhaps to identify weaknesses in existing knowledge about the topic. New strands of literature will subsequently be consulted to understand how the grounded theory fits within existing theoretical perspectives. The method will also be likely to develop incrementally as the research progresses, so it may also be difficult to produce a unified draft of this that implies it was a predetermined and straightforward process.

The focus of a Grounded Theory study should do exactly what it says: devise a theory grounded in the data. The 'findings' therefore need to go further than simply saying what was 'found'. They need to demonstrate not only what the grounded theory is but also how it is grounded in the data and analytic processes; and produce a convincing explanation. Subsequently, the discussion needs to consider the relationship of this grounded theory to existing theory and how it contributes to the generation or refinement of knowledge.

A Grounded Theory report should seek to preserve 'the form and content of the analytic work' that leads to it (Charmaz 2014: 285). This theory building purpose and the analytical approach need to be emphasised through the structure of the report. It may therefore be useful to incorporate a chronological approach into your Grounded Theory report structure. Where your research follows the Grounded Theory Method of Strauss and Corbin (1998), for example, you can use a structure that allows you to outline the relationships you developed between categories during axial coding, and then how you integrated these categories during selective coding. By exploring the circumstances when these relationships appear to make sense and those when they do not, you should be able to demonstrate how and why you developed your grounded theory and offer a convincing explanation about the conditions under which it applies and those when it does not.

In a Grounded Theory approach your theoretical framework is developed from the data you collect and analyse, and your report structure will need to allow you to demonstrate how you developed your theoretical framework. As you write your report you will continue to develop your analysis. You may not fully appreciate the analytical potential of your data until you start to write about them! For these reasons, you should devise a structure that preserves the analytical processes you have been engaged in, continues to encourage the development of your analysis, emphasises how it developed and evaluates it with the intention of demonstrating to your readers that your grounded theory is convincing. Such a structure will allow you to describe the development of your analysis and grounded theory before outlining how you returned to the literature to review theoretical perspectives that relate to your grounded theory.

Narrative Research

Writing a Narrative Research (Section 13.10) project report may take a number of forms. Unless a particular form such as the traditional structure is prescribed, you may find that you are advised to reflect on how you might write up your study rather than being told how to do this. This is because the reporting of Narrative Research lends itself to structural experimentation. In general, the use of a narrative strategy will have implications for report structure. As we note in Section 5.8, this research strategy preserves chronological

connections and the sequencing of events. It enables events, the activities that compose these and their consequences to be analysed as a whole. It is associated with 'thick descriptions' of contextual detail and social relations.

How you structure your Narrative Research project report will be influenced by you research question and aims and:

- the nature of the narratives you collect; and
- the type of Narrative Analysis you undertake.

Nature of the narratives

Basing your Narrative Research strategy on one participant, a few participants or many participants will affect the way in which you wish to structure your report. Your research may be based, for example, on the narrated account of one entrepreneur. In this case your structure will need to include a description of this person and a rationale for choosing them as your research participant. Your structure may then adopt either a chronological, event-based or thematic approach, emphasising the way this life story develops, or focusing on key events or particular themes drawn from the narrated account. Your structure may need to accommodate lengthy quotations from your participant. You will also need to interpret how this narrated account relates to wider contextual factors and to include a theoretical evaluation that draws on relevant literature.

Alternatively, your research may use narrative accounts from, say, three or four participants. This will necessitate including a description of these participants, the context within which they operate and a rationale for choosing them. You may then decide to devote a section to each of these narrated accounts followed by a discussion that draws them together and relates themes from these accounts to relevant theories in the literature. Alternatively, you may decide to use a structure that presents a cross-narrative analysis. In this approach you would focus on key events or themes drawn from across these narrated accounts. This comparative structure, would emphasise perceptions about the same event as seen from different perspectives, devoting a section to each theme or event you consider. Within each section you would incorporate description, interpretation and theoretical evaluation.

These examples illustrate how the nature of the narratives you collect can affect the structure of your project report. A contrast may be drawn between extended narratives, such as those we have just considered, and short narratives, comprising storied segments of text collected using interviews or observations. The structure of a project report is likely to be shaped around the use of an extended narrative or narratives. A narrative structure provided by the sole narrator or by a small number of narrators may influence not only the analysis of the data provided but also the form that the report adopts. This relationship is less likely where you are dealing with a larger number of short narratives, as there will be many more options available to you in terms of how you seek to combine and present these narratives and the data they contain. Here your role as analyst and presenter is likely to be more dominant in shaping the structure of the project report.

Type of Narrative Analysis

The type of Narrative Analysis you undertake may also affect the structure you devise for your project report. The themes you derive during Thematic Narrative Analysis provide you with a means to structure the sections of your project report that present your analysis and discussion. Where you undertake Structural Narrative Analysis you will be interested in the way a narrative or dialogue is constructed, to examine how use of language affects others or influences the course of an interaction. This research approach may be based on prior theory, so you might use a traditional (logico-deductive) report structure. For both,

you are likely to include examples of dialogue in your analysis and theoretical evaluation, so you will need to ensure your structure accommodates the reporting of these.

14.6 The consultancy (practitioner) report

This section considers a situation you may face: the need to write two reports about your research, each of which may require a different structure! Many researchers of management topics face the dilemma of having to write for more than one audience. In addition to the academic audience, who will mark and grade your report, you may need to prepare a report for practitioners. The management of your employing or host organisation will be interested in the practical benefit of your research findings. In addition, you many need to present your research orally (Section 14.11).

Your consultancy report will usually be shorter and contain more limited contextual description. Managers reading your report will probably be less interested in the literature review and the development of theory than the academic audience. They will, however, be interested in practical well-founded recommendations for future action. Although word processors make the job of compiling more than one report less time consuming. Some judicious cutting and pasting along with subsequent careful proofreading will be necessary. When doing this you need to keep in mind the audience that each specific report is addressing. Each report needs to be structured so the content and style are suitable for its respective audience.

As you plan your consultancy report you will need to consider several key questions. These include:

- Who will read your consultancy report?
- What information and level of detail will they expect?
- How will they expect the report to be presented?
- How much knowledge will they already have?
- For what purpose will the report be used?
- What key messages and recommendations do you want to impart?

Irrespective of the structure you use, you should avoid presenting a partial point of view and selecting only those data that support your recommendations. Where the analysis of your data lead to a complex situation suggesting alternative courses of action, you will need to devise a structure that allows you to convey these messages to the organisational audience. Writing a consultancy report does not mean that you should produce an inferior account of your research. We recall occasions when we have presented consultancy reports to various management teams: in these situations you can always expect to be asked a range of astute and relevant questions!

Possible structures

You will probably have some choice about the structure of your consultancy report. A simplified version of the traditional structure may be appropriate, such as:

1. Executive summary;
2. Introduction;
3. Background and method;
4. Results/Findings;
5. Recommendations;
6. References;
7. Appendices.

Decisions about what to include in (and, just as importantly, to exclude from) the consultancy report require care. Only information that is essential to management should go in the main body of the report; any information that is 'important' or 'of interest' should be relegated to appendices. Your readers are likely to have limited time and want only essential detail. That said, the management reader will be interested in the background to the project and in how you carried out the research. You may therefore expect to be questioned about your research methods. But the key purpose of the report is usually to provide management with clear justified recommendations. Recommendations equate with action. As with the academic report, division of the report content into logical sections with clear subheadings will lead management through the report and show them where to find specific topics.

The executive summary will be the part of the report on which managers focus. It is important that it can be read and understood without having to look at the rest of the report. It therefore needs to provide clear summary information, including facts and figures. If your report includes recommendations, the executive summary should make the key recommendations clear and include their implications, value and, if possible, likely costs. Like an abstract, the executive summary should be short (no more than two pages) and designed to get your main message across.

One final point may be made about the writing style for your consultancy report. Your reader will not appreciate long words, complicated language, 'management speak' or a multitude of acronyms and abbreviations. If it is necessary to use complex technical terms, make sure you provide a glossary as an appendix.

14.7 Ensuring clarity and accessibility

In this section we make some general comments about the content of your report, irrespective of the structure you use. Ensuring your report is both clear and accessible starts with choosing a short descriptive title, and then telling a clear story throughout your report to make sure your readers can get all the information they need.

Choosing a title

A good title is one that has the minimum possible number of words while describing the content of the report accurately (Gastel and Day 2017). Try choosing a title and then ask a colleague who knows your subject what they think the title describes. If their description matches your content then keep the title.

Telling a clear story

The importance of writing clearly and telling the story clearly is crucial if your ideas are to be accessible and your readers to engage with your ideas (Pollock 2021). You therefore need to be able to answer questions such as 'What's your main storyline?' Your storyline (your central argument or thesis) should be clear, simple and straightforward. It should be so clear that you can stop the next person you see walking towards you and tell that person what your project report's storyline is, and they will say 'Yes, I understand that'. This is where writing the abstract helps. It forces you to think clearly about the storyline because you have to summarise it in so few words.

Another way of checking to see whether your storyline is clear is to 'reason backwards'. An example of this is a project report that ends in clear conclusions or recommendations.

Start by explaining your conclusions or recommendations to a friend. This invites the question from your friend: 'On what basis do you draw these conclusions or recommendations?' Here your answer is, of course, on the findings that you established. The next question asked is: 'How did you arrive at these findings?' in response to which you explain your method. Your friend may counter by asking you why they should take any notice of your findings. The response to this is that you took care to design a research strategy and use methods that would lead to valid and reliable findings. Moreover, your research strategy and methods are based on a clear research question and objectives and a clear understanding of the relevant literature and context. Such 'reasoning backwards' is a useful check to see not only whether your storyline is clear but also that it stands up to logical analysis.

Helping the reader to get all information they need

Dividing the work

One of us once received the first draft of a project report that had virtually no section headings within the chapters. It was like looking at a road map that did not include any road numbers or towns. It was just as difficult to find our way around that report as it would be to journey between two major cities using a townless road map. The content of the project report seemed fine. However, it was hard to be sure about this because it was so difficult to spot any gaps in the material it covered. To continue with our metaphor, what were needed were some signposts and some town names. Do not think about how you can put in all your information. Instead, concentrate on helping the reader to get the information they need (Box 14.11).

The message is simple. Divide your work in such a way that it is easy for readers to find their way round it and for them always to be clear where they are, where they have come from, and where they are going. To do this you may find it helpful to return to the matrix idea in Table 14.1. You will see that each column of the matrix represents the broad content of a chapter. The cells indicate the way in which the chapters may be divided. Each division may have a subdivision.



Box 14.11 Focus on management research

The importance of developing a storyline

In their Editors' Comments in the *Academy of Management Review,* Lange and Pfarrer (2017) illustrate the importance of developing a clear and purposeful storyline in academic writing. Based on their experience and synthesis of previous work they identify five core building blocks to achieve this. They label these 'common ground', 'complication', 'concern', 'course of action' and 'contribution'. They explain each of these before using award-winning articles to illustrate how these elements are present in effective writing.

'Common ground' is the process of establishing where the subject of interest is currently located. 'Complication' demonstrates a problem related to the established common ground. 'Concern' illustrates why this complication is important. 'Course of action' is the way in which the researcher approaches the complication to address and resolve it. 'Contribution' explains how this study has moved understanding about the subject forward.

Using this type of sequential structure should ensure that your work will not only makes some contribution but also demonstrates a clear and purposeful storyline.

We hope you have noticed that we have employed a similar system in this book. Each chapter section is identified by a numbered heading made up of large, bold characters. The subheadings use slightly smaller, bold lettering and further divisions of the content of a sub-section are denoted by bold, italicised characters. There are various textual and numerical ways of organising and signposting text. It is not important which way you do this as long as your approach is consistent, and it helps the reader around the report and matches the way specified by your university.

Previewing and summarising chapters

A further way in which you can signpost your work is to 'top and tail' each chapter. This is to include a few words of introduction at the beginning of the chapter that provide a description of how the chapter is structured in relation to answering the research question and the key aspects that are covered in the chapter. At the end of each chapter it is useful to provide a brief summary of the content of the chapter and a very brief indication of how this content links to the following chapter. This may seem like repetition. However, it helps the reader on her or his journey through your report and ensures that you, the writer, are on the correct road.

Visualisation

As we introduced earlier, your reader will find your project report more accessible and easier to read if you present some of your data and ideas in tables and figures. It is not only numerical data that can be presented in tables and diagrams. You can also present ideas that can be easily compared (for example, Figure 11.1 and Table 11.1). Do not be tempted to put your tables in the appendices. They will probably be some of your most important data. Include and refer to them and comment on them in the text. Your commentary should note the significant aspects of the data in the tables. It should not simply describe the table's contents. A final note of caution: to avoid confusing your reader, do make sure that, wherever possible, you have introduced the table or figure before it appears in the report.

14.8 Developing an appropriate writing style

Much of your concern in writing your project report will be about what you write. In this section of the chapter we ask you to think about the way you write. Your writing style is just as important as the structure and content of your report. That said, it is often observed that good writing cannot substitute for flawed thinking (Phillips and Pugh 2015). In fact, the clearer the writing, the more flawed thinking is exposed. However, poor writing can spoil the effect of good-quality thought.

Clarity and simplicity

> **The . . . lack of ready intelligibility [in scholarly writing], I believe, usually has little or nothing to do with the complexity of the subject matter, and nothing at all to do with profundity of thought. It has to do almost entirely with certain confusions of the academic writer about his own status . . . To overcome the academic prose you first of all have to overcome the academic pose.**
>
> Wright Mills (1970: 239–40)

Each Christmas, Mark accompanies his Christmas cards with a family newsletter. It is written in a simple, direct and friendly manner that is easy and enjoyable to read and illustrated

with a selection of photographs. Few of the project reports we read are written in such a simple, direct manner. They are more elaborate in their explanation: they use difficult words where Mark's family newsletter would use simple ones. They adopt the academic pose.

Phil tells a story that reinforces the point made by Wright Mills in the above quotation. He was asked by a student to comment on their report in progress, which was about the impact of a particular job advertising strategy. He thought that it was written in an over-elaborate and 'academic' way. After many suggestions for amendments Phil came across a sentence that explained that the strategy his student was studying 'was characterised by factors congruent with the results of a lifestyle analysis of the target market'. Phil thought that this was too wordy. He suggested making it simpler. His student examined the sentence at length and declared there was no way it could be improved. Phil thought that it could say 'it was a strategy that matched the lifestyles of those at whom it was aimed'. His student agreed saying it was shorter and clearer but protested that it was less 'academic'. We think that clarity and simplicity are more important than wishing to appear 'academic'. Your project report is a piece of communication in the same way as Mark's Christmas newsletter.

Phillips and Pugh (2015) advise that you should aim to provide readers with a report that they cannot put down until 2.00 a.m. or later for fear of spoiling the flow. (If you are reading this chapter at 2.30 a.m. we have succeeded!)

Write simple sentences

A common source of lack of clarity is the confusing sentence (see Box 14.12). This is often because it is too long. A simple rule to adopt is: one idea – one sentence. Try reading your work out loud. If your sentences are too long, you will run out of breath!



Box 14.12 Focus on student research

Writing clearer sentences

Consider the following sentence:

> While it is true to say that researchers have illusions of academic grandeur when they sit down to write their project report, and who can blame them because they have had to demonstrate skill and resilience to get to this point in their studies, they nonetheless must consider that writing a project report is an exercise in communication, and nobody likes reading a lot of ideas that are expressed in such a confusing and pretentious way that nobody can understand them, let alone the poor tutor who has to plough through it all to try and make some sense of it.

There appear to be at least six separate ideas in this sentence. It contains 101 words (when marking, we sometimes come across sentences with over 150!). In addition, it contains a common way of introducing multiple ideas into a sentence: the embedded clause. In the sentence above the embedded clause is '. . . and who can blame them because they have had to demonstrate skill and resilience to get to this point in their studies . . . ' The give-away is the first word in the sentence: 'While'. This invites an embedded clause. The point here is that potentially rich ideas get buried in the literary undergrowth. Dig them up and replant them. Let them flourish in a sentence of their own.

The sentence needs to be clearer and simpler. However, it should not lose any of its meaning. Halving the number of words and dividing up the sentence into smaller, clearer sentences results in the following:

> Researchers have illusions of academic grandeur when they write their project report. This is understandable. They have demonstrated skill and resilience to reach this point in their studies. However, writing a project report is an exercise in communication. Nobody likes confusing and pretentious writing that is difficult to understand. Pity the tutor who has to make sense of it.

Avoid jargon

Jargon should not be confused with using the correct terminology. Some terms are unavoidable. To assist your reader, it is best to put a glossary of such terms in the appendices. However, do not assume that your reader will have such a full knowledge as you of the subject and, in particular, the context. Here, and in all cases, try to put yourself in the position of the reader. Phil makes this point to students who write assignments about a case study organisation. He asks them to 'mark' past (anonymous) assignments. They are usually horrified at the assumptions that their fellow students make about the tutor's prior knowledge of the organisation.

What can be avoided is the sort of jargon that The Free Dictionary (2022) defines as 'gibberish'. You will know the sort of phrases: 'ongoing situation'; 'going down the route of'; 'at the end of the day'; 'the bottom line'; 'at this moment in time'. It is not just that they are ugly, but they are not clear and simple. For example, 'now' is much clearer and simpler than 'at this moment in time'.

Beware of using large numbers of quotations from the literature

We believe that quotations from the literature should be used infrequently in your project report. Occasionally, we receive draft projects that consist of little more than a series of quotations from books and journal articles that a student has linked together with a few sentences of their own. This tells us very little about the student's understanding of the concepts within the quotations. All it shows is that they have looked at the book or journal article and, it is hoped, can acknowledge sources correctly. In addition, by using quotations in this way the student's line of argument tends to become disjointed and less easy to follow. It is therefore usually better to explain other people's ideas in your own words.

That is not to say that you should never quote from the literature. As you have seen, we have used direct quotations from other people's work in this book. Rather we would advise you to use them sparingly to create maximum impact in supporting your storyline.

Check spelling and grammar

Spelling is still a problem for many of us, despite spellcheckers. A spellchecker will not correct your 'moral' when you wished to say 'morale' or sort out when you should write 'practise' rather than 'practice', or recognise you have typed 'researches' rather than 'research'. This is where the friend who is reading your draft can help, provided that friend is a competent speller. Each spelling error in your project report detracts from the quality of your presentation and the authority of your ideas.

Avoiding common grammatical errors

Grammatical errors threaten the credibility of our writing. In Table 14.3 we outline 10 of the most common errors, most of which, with some careful checking, can be avoided. It is not our intention here to conduct an English grammar lesson. Some of the common errors in Table 14.3 are self-explanatory. You may argue that the **split infinitive** is not often thought of as an error these days. However, 'to boldly go' ahead with your project report ignoring this rule risks irritating your reader – something you can ill afford to do. You want the reader to concentrate on your ideas. Fortunately, you can spot some of the more obvious grammatical errors by reading your text aloud to yourself. You need not know the grammatical rules; they often just sound wrong!

Table 14.3 Ten common grammatical errors

Often we write	The correct way is
Each pronoun should agree with their antecedent	Each pronoun should agree with its antecedent
Just between you and I, case is important	Just between you and me, case is important
A preposition is a poor word to end a sentence with	A preposition is a poor word with which to end a sentence
Verbs has to agree with their subject	Verbs have to agree with their subject
Do not use no double negatives	Do not use double negatives
Remember to never split an infinitive	Remember never to split an infinitive
When dangling, do not use participles	Do not use dangling participles
Avoid clichés like the plague	To avoid clichés like the plague!
Do not write a run-on sentence it is difficult when you have got to punctuate it, so it makes sense when the reader reads what you wrote	Do not write a run-on sentence. It is difficult to punctuate it so that it makes sense to the reader
The data is included in this section	The data are included in this section

Source: Developed from Day (1998: 160)

Person, tense and gender

Traditionally, academic writing has been dry and unexciting. This is partly because the convention has been to write impersonally, in the past **tense** and in the **passive voice** (e.g. 'interviews were conducted following the analysis of questionnaires'). The writer was expected to be distanced from the text. However, this convention is now less common, and it is increasingly a matter of preferred style rather than rules. The research approach and strategy that informs your methods may dictate your choice of **personal pronoun**. We noted earlier that one feature of positivism is that 'the researcher is independent of, and neither affects nor is affected by, the subject of the research', so an impersonal style is often appropriate. However, where the researcher is an intrinsic part of the research process use of the first person may seem more logical. You also need to evaluate the effect of the style you adopt. Use of the term 'the author' sounds too impersonal and stilted and writing in the passive voice is usually preferable. In contrast, excessive use of 'I' and 'we' may raise questions, particularly in positivist readers' minds, about your ability to stand outside your data and to be objective.

Gastel and Day (2017) identify rules for the correct use of tense. When you refer to previously established knowledge from published academic papers the convention is to use the present tense (e.g. Newton identifies . . .) and the past tense when you refer to your own results (e.g. I found that . . .). Although Gastel and Day note exceptions to this rule, it is a useful guide to follow. They also argue against using the passive voice in writing ('it was found that') and champion the use of the **active voice** ('I found that'). Use of active voice is clearer, shorter and unambiguous. However, it is a good idea to check with your project tutor which form of voice is acceptable.

Finally, you should try to avoid language that assumes the gender of a classification of people. The most obvious example of these is the constant reference to managers as 'he'. This inaccurate in organisations and gives offence to many people. Those offended will probably include your readers! It is simple enough to avoid (e.g. 'I propose to interview each executive unless he refuses' becomes 'I propose to interview each executive unless I receive a refusal') but often less easy to spot. The further reading section in the first draft of this chapter referred to Becker as a 'master craftsman'. Thinking about our own use of gendered language prompted us to change it to 'an expert in the field'. Appendix 3 gives more detailed guidance on the use of non-discriminatory language, including the use of **non-binary** (gender-neutral) pronouns to refer to individuals and groups of people.

It is a good idea to be aware of any specific discriminatory or potentially insulting concepts, terms and expressions that may be used in your research due to the particular context of the research (e.g. the industry or organisation in which you work). If your work has an international dimension, it is also a good idea to be aware of any country-specific or national guidelines on the non-discriminatory use of language.

Preserving confidentiality

You may have given those people (and the organisations) from whom you collected data an undertaking that you would not disclose their identity in anything you write. In this case you will need to conceal their identities in your project report. The usual way of doing this is to invent pseudonyms for organisations and not to name individual participants (Sections 6.5 and 6.7). This should not detract from the impact of your report.

Similarly, your sponsoring organisation(s) may have requested sight of your report before it is submitted. Should there be misgivings about the content of the report you should be able to alleviate these using pseudonyms. This is usually a better option than significant text changes.

The need for continual revision

Phil asked a group of undergraduate students how many of them wrote more than one draft of their assignment papers. He did not expect that many would reply that they did. What he did not predict was that many of them had not even thought this was necessary. Submitting the first attempt is due partly to the heavy assessment loads on many courses, which means that students are constantly having to 'keep up with the clock'. On part-time courses, students these days have so many demands in their daily work that writing an assignment just once is all that is possible. This is the way most of us learnt to write at school. The work is usually seen only by the teacher and the arrangement is private.

Project reports are different. They will be seen by an audience much wider than one tutor. They may be placed in the library to be read by succeeding students. You will be judged on the quality of your work. For that reason, we urge you most strongly to polish your work with successive drafts until you are happy that you can do no better. The checklist in Box 14.13 may help here. Having been through this checklist you may decide to make minor alterations to your text. On the other hand, you may rewrite sections or move sections within chapters to other chapters. Keep asking yourself 'How can I make the reader's task easier?'

After each successive draft do leave enough time for your thoughts to mature. It is amazing how something you wrote a few days before will now make no sense to you. However, you will also be impressed with the clarity and insight of some passages. Having completed a second draft, you may now feel confident enough to give it to your colleague or friend to read. You can ask your friend to also use the checklist in Box 14.13 to which you can add specific points that you feel are important (e.g. are my arguments well-reasoned?).



Box 14.13 Checklist

To evaluate each draft of your project report

- ✔ Is there a clear structure?
- ✔ Is there a clear storyline?
- ✔ Does your abstract reflect the whole content of the report accurately?
- ✔ Does your introduction state the research question(s) and objectives clearly?
- ✔ Does your literature review inform the later content of the report?
- ✔ Are your methods explained clearly?
- ✔ Have you made a clear distinction between findings and conclusions in the relevant chapters?
- ✔ Have you checked all your references and presented these in the required manner?
- ✔ Is there any text material that should be in the appendices or vice versa?
- ✔ Does your title reflect accurately your content?
- ✔ Have you divided up your text throughout with suitable headings?
- ✔ Does each chapter have a preview and a summary?
- ✔ Are you happy that your writing is clear, simple and direct?
- ✔ Have you eliminated all jargon?
- ✔ Have you eliminated all unnecessary quotations?
- ✔ Have you checked spelling and grammar?
- ✔ Have you checked for assumptions about gender?
- ✔ Is your report in a format that will be acceptable to the assessing body?
- ✔ Would you be proud of your project if it was placed in the university's library as it is now?

14.9 Meeting the assessment criteria

Your readers will assess your work against the assessment criteria that apply to your programme. It is therefore essential that you familiarise yourself with these criteria. More generally, Bloom's (1971) taxonomy (or classification) of educational objectives will help you understand the standard that your project report needs to meet. At the lower levels of this taxonomy, project reports should show knowledge and comprehension of the topic covered. At the intermediate levels they should contain evidence of application and analysis. Application is thought of as the ability to apply certain principles and rules in particular situations. Your method section should be the principal vehicle for demonstrating application. Analysis may be illustrated by your ability to break down your data and to clarify the nature of the component parts and the relationship between them. Whatever your assessment criteria, it is certain that you will be expected to demonstrate your ability at these lower and intermediate levels.

The higher levels of this taxonomy are synthesis and evaluation. **Synthesis** is the process of putting together or assembling various elements to create a new statement or conclusion. The emphasis put on conclusions and, in particular, on the development of a storyline in your project report suggests that we feel that you should be showing evidence of synthesis. **Evaluation** is the process of judging materials or methods in terms of their accuracy and internal consistency or by comparing them against external criteria. You have the chance to show this ability in the literature review and in the awareness of the limitations of your own research (see Section 14.4). Each of these levels of educational objectives should be demonstrated in your project report.

In addition to meeting these, you will also need to make sure that you meet all other assessment criteria. You will need to make sure that your project is correctly formatted, does not exceed the maximum permitted word or page length and contains all of the elements specified. A final, more holistic consideration that many of our students find useful is to ask yourself whether you would be proud for your project to be placed in the university's library

as it is now. If your honest answer is 'no, not yet', you will have more work to do! Conversely, you will need to submit by the due date and so you will need to make sure that you do not keep polishing one part to the exclusion of completing the whole project. You will therefore need to manage your time carefully in terms of drafting the whole and then refining each part.

14.10 Writing a reflective essay or section

As we discussed earlier (Section 5.5), being reflective and reflexive is integral to some research strategies or particular variants of these. This is particularly true of interpretive research strategies. For example, interpretive ethnography is an approach in which the researcher engages in continuous reflexivity. Conducting research in a reflective and reflexive way is also important in Action Research and Grounded Theory strategies. This approach involves the researcher writing themself into the research by writing in the first person. Of course, not all research strategies encourage reflection and reflexivity during the research process. Neither do they encourage writing in the first person; instead they use an impersonal approach to report the research. This is often true of deductive, survey research. If being reflective and reflexive has not been integral to your research strategy, you will still be familiar with this approach if you have kept a reflective diary or journal throughout your research project. This will be very helpful in writing a reflective essay about your research or a reflective section in your project report.

Many universities require a reflective essay or section to be included in the assessment of a research project, sometimes as an appendix in the report. In Section 1.5 we discussed how reflection is a key part of learning. Your reflections about your research should have been recorded throughout this process in your reflective diary or journal. This will enable you to record your progress in a continuous cycle of experience, reflection, evaluation and revised practice. Your reflective diary or journal will help you to improve your practice as your research progresses and then provide you with the source material to write your reflective essay or section. It will of course be important to make regular entries in your research diary or journal and we have encouraged you to do this as you work through the 'Progressing your research project' section included in each chapter. Box 14.14 comprises a checklist of questions that you may ask yourself to help you write your reflective essay or section.

Where you have used a research strategy that incorporates a reflective and reflexive approach and written this into your project report you should also be able to draw on this



Box 14.14 Checklist

Checklist to evaluate your reflective essay or section

- ✔ Which aspects of my research project went well?
- ✔ Why do I think these aspects of my research project went well?
- ✔ What are my key learning points from these aspects?
- ✔ Which aspects of my research project did not go so well?
- ✔ Why do I think these aspects of my research project did not go so well?
- ✔ What are my key learning points from these aspects?
- ✔ What adjustments did I make to my research practice as a result of this learning?
- ✔ How well did these adjustments work in practice?
- ✔ What further adjustments did I make, or could I have made, to my research practice and why?
- ✔ How would I summarise my learning from my research project and what skills have I developed?
- ✔ How has my learning from this experience influenced what I would do in the event of another research project: what would I do the same and what would I do differently, and why?

material to answer these questions to produce a reflective overview (Section 5.5). As your reflective essay or section is a personal account of your experiences, practice and learning, it will be appropriate to write this in the first person, using 'I' and 'my' in phrases such as such as 'my experience', 'what I learned' and 'what I will do differently'.

14.11 Presentations

Many students, particularly on professional courses, have to present their project report orally either face-to-face or online, as part of the assessment process. The skills required here are quite different from those involved with writing. In this section we briefly consider two types of presentation; an oral presentation supported using slides, or a poster presentation.

Oral presentations

We discuss this type of presentation under three headings: planning and preparing; the use of visual aids; and presenting, although many points outlined here will also be relevant where you prepare and make a poster presentation.

Planning and preparing

We make no apology for starting this section with the trainer's proverb: 'Failing to prepare is preparing to fail.' Your assessors will forgive any inadequacies that stem from inexperience, but they will be much less forgiving of students who have paid little attention to preparation. You can be sure of one thing about insufficient preparation: it shows, particularly to the experienced tutor.

First and foremost it is crucial to establish whether you will be making your presentation face-to-face or online, the length of time you will have to present and answer questions, and who will be you audience. You should also establish if you are expected to use visual aids and provide handouts.

All presentations should have clear aims and objectives. Your aim should be to give the audience members an overview of your research project in such a way that it will capture their interest. Keep it clear and simple. By achieving this you will meet the most basic assessment criterion: that sometime later the tutor in the audience can clearly remember your main project storyline. Your objectives for the presentation are not the same as your research objectives; they are more specific. They should start you thinking about the interests of your audience. These should be phrased in terms of what it is you want your audience members to be able to do after your presentation. Since your presentation will usually be confined to the imparting of knowledge, it is sufficient to phrase your objectives in terms of the audience members being able, for example, to define, describe, explain or clarify. It is a good idea to share the objectives with your audience members, so they know about the journey on which they are being taken (Box 14.15).

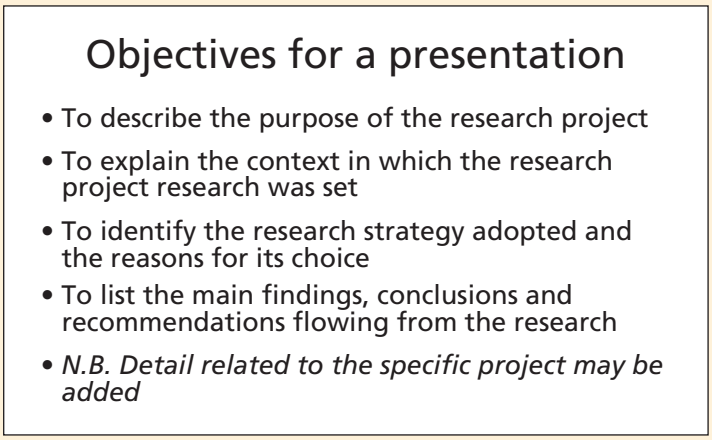
Setting clear objectives for your presentation leads you neatly to deciding the content. This should be straightforward because your abstract should serve as your guide to the content. The purpose of the abstract is to give the reader a brief overview of the report, which is precisely the same purpose as the presentation. How much detail you go into on each point will be determined largely by the time available. The audience member who wants more detail can always ask you to elaborate or read it in the report.

The final point to note here is to think about the general approach you will adopt in delivering your presentation. It is a good idea to involve the audience members rather than simply tell them what it is you want them to know. Thirty minutes of you talking at the audience members can seem like an age, for you and sometimes for them! Inviting them

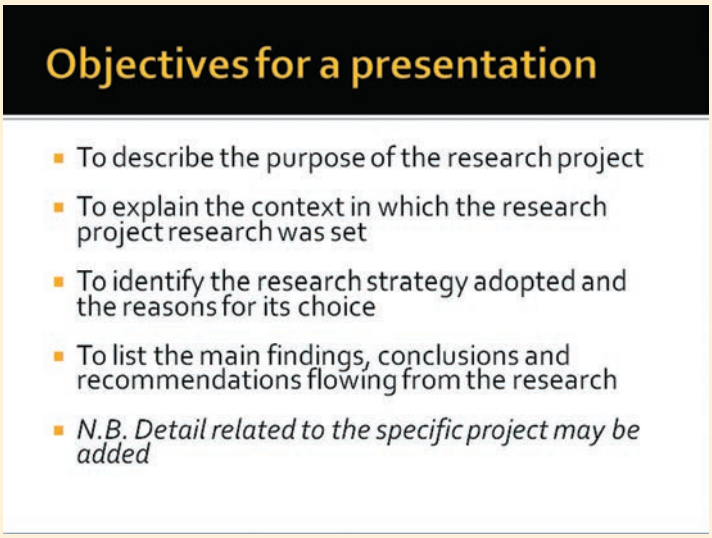
Box 14.15 Focus on student research

Presenting the objectives for a project

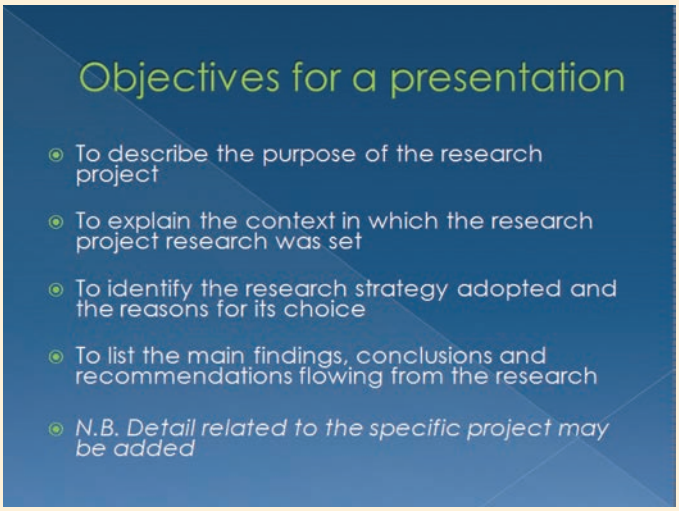
Phil created the following slides in Microsoft PowerPoint as part of a lecture on project presentation. This allowed him to produce various designs of slide to meet his purpose, examples of which are shown in the following versions:



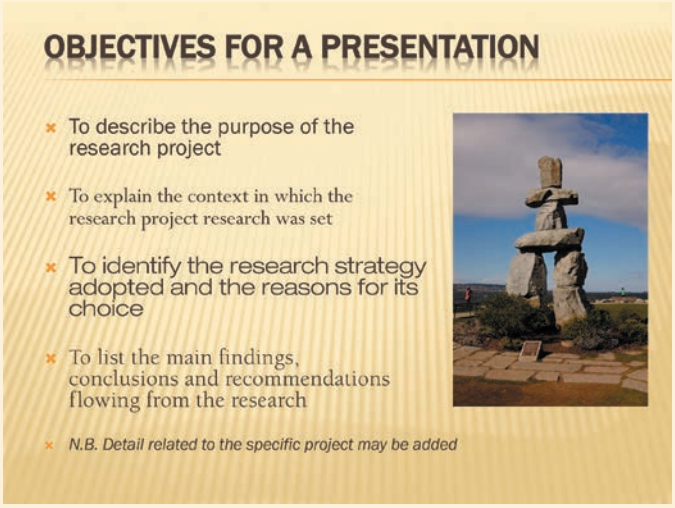
Version 1: Standard PowerPoint slide



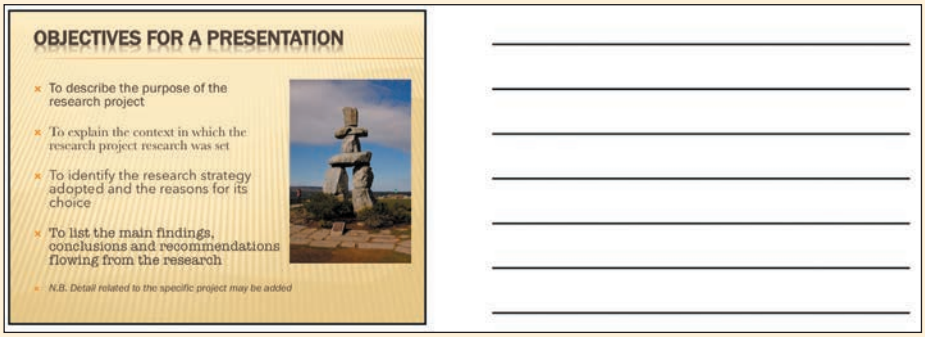
Version 2: PowerPoint slide using a design template



Version 3: PowerPoint slide using more colour



Version 4: PowerPoint slide with photo inserted



Version 5: PowerPoint slide with space for the audience to add notes

Source: © Mark Saunders 2018

to ask questions throughout the presentation is a good way of ensuring that the talk is not all in one direction. Rarely will tutors miss the opportunity of asking you to 'dig a little deeper' to test your understanding, so don't worry that no questions will arise. However, you must be careful to ensure that you do not let questions and answers run away with time. The more you open your presentation to debate, the less control you have of time. In general, we do not think it is a good idea to attempt to emulate tutors and turn your presentation into a teaching session. We have seen students set the audience mini exercises to get them involved, but often these tend not to work. Play to your strengths and enjoy the opportunity to share your detailed knowledge with an interested audience.

Using visual aids

The use of **visual aids** will do more than enhance the understanding of your audience. It will help you to look better prepared and therefore more professional. A simple set of slides will perform the same function as a set of notes, in that it will ensure that you do not forget key points and will help you to keep your presentation on track. You will know the material so well that a key point noted on the overhead will be enough to trigger your thought process and focus the attention of the audience. Key points will also ensure that you are not tempted to read a script for your presentation, something that will not sustain the attention of your audience for very long.

Using Microsoft PowerPoint makes it easy to produce a highly professional presentation, using slides that can include simple illustrations to reinforce a point or add a little humour. However, while the necessary equipment to project slides is commonplace, it is still worth checking explicitly what will be available to you. PowerPoint has numerous design features and, while design templates and colour can be used to improve the visual appeal of individual slides (Box 14.15, versions 2 and 3), beware of using a variety of different fonts, special effects, or including illustrations that have no relevance to the presentation (Box 14.15, version 4). For face-to-face presentations printing miniature versions of your slides as a handout or note pages (Box 14.15, version 5), offers a useful aide-mémoire for your audience.

You may want to supplement your pre-prepared slides with the use of a whiteboard or, for online presentations, a virtual whiteboard. This may be useful for explaining points in relation to questions you receive. A word of warning for face-to-face presentations: ensure that you use dry markers that can be wiped from the board. A vain attempt to erase the results of a permanent pen in front of your audience will do nothing to enhance your confidence. Ensuring that you have dry wipe markers (use only black and blue pens – red and green are too faint) and checking computers and projectors before the presentation, serve to emphasise the need for careful preparation.

Giving the presentation

The first thing to say here is: don't worry about nerves. You may expect to be a little nervous as you commence your presentation, and your audience may also expect this. The best way to minimise nervousness is to have prepared your presentation carefully and to have practised it beforehand.

Be positive about your presentation and your report. Trial your presentation in front of a friend to ensure that it flows logically and smoothly. You also need to ensure that you can deliver it in the allotted time. In our experience most students put too much material in their presentations, although they worry beforehand that they have not got enough.

It is important that your presentation has a clear structure. One way to achieve this is to follow the structure of many news programmes, in which newsreaders first tell the audience what they are going to say (the 'headlines'), then elaborate on these by explaining their content and finish by summarising them again. In a similar way your audience will

want to know what to expect from your presentation, then which part they are currently observing and finally to understand your conclusions.

Finally, some practical points that will help:

- For face-to-face presentations think about whether you would prefer to sit or stand. The former may be better to foster debate, the latter is likely to give you a sense of control. Which one you choose may depend upon the circumstances of the presentation, including the approach you wish to adopt, the room layout, the equipment you are using and your preferred style.
- Consider how you will deal with difficult questions. Try to anticipate these and how you would answer them, so that you can deal with them confidently during the presentation.
- Avoid jargon.
- For face-to-face presentations check the room before the presentation to ensure you have everything you need, you are happy and familiar with the layout, and all your equipment is working.
- For online presentations check the videoconferencing platform works with your presentation software and both the sound and the display work.

Poster presentations

You may be required to present your research project as a poster presentation. The purpose of a poster is not to provide a detailed explanation of your research but to give a succinct and clear message about the main aspects. You therefore need to be selective in what you include. While some of the points we have just outlined will be relevant other points need to be considered. We consider these under two headings: planning and preparing your poster; presenting your poster.

Planning and preparing the poster

Like presentational slides, your poster needs to be well designed, clearly structured and easy for your audience to understand. Typically your poster will contain the following:

- Title;
- Summary;
- Short introduction including key literature;
- Aim and objectives/research question;
- Methodology;
- Findings/Results;
- Discussion; and/or
- Conclusions or Recommendations.

Each of these sections will be succinct. Your title will need to be short and catch the reader's attention. It should be followed by your name. The introduction will briefly state what you did and the key literature on which your research draws. The method will very briefly outline how you did it. The main findings will be summarised; and the conclusions will summarise how you addressed your aim. The number of words that your poster contains will be likely to number no more than a few hundred, with a maximum of one thousand, and this will be affected by any figures or visual images also incorporated into the poster.

The poster needs to be self-explanatory, with clear headings and points of information (rather than extended blocks or paragraphs of text). It needs to be readable from two to three metres away, so ensure the font is large enough. The clarity of your poster will be aided by leaving space around points rather than making it appear complex or dense. The exact design of your poster will depend on the amount of space you have, its format and

the technology you are using. The format of a poster may be either portrait or landscape. Where you have a choice about which you use, you will be able to experiment with the format that best suits your presentation (Figure 14.1). Landscape usually works best for



Figure 14.1 Poster outlining a research project
© Chaiyatorn Limaspornvanich 2018, reproduced with permission

online poster presentations. A portrait poster is often divided into two columns, while a landscape poster may be divided into three or possibly four columns, albeit with less depth (Figure 14.2).

As an alternative to preparing and using a traditional poster, you may have the opportunity to produce and use an online poster. This may take the form of a static image and therefore be the equivalent of a traditional poster. You may also have the opportunity to produce an electronic poster that incorporates moving images such as video clips and a short, spoken flash presentation.

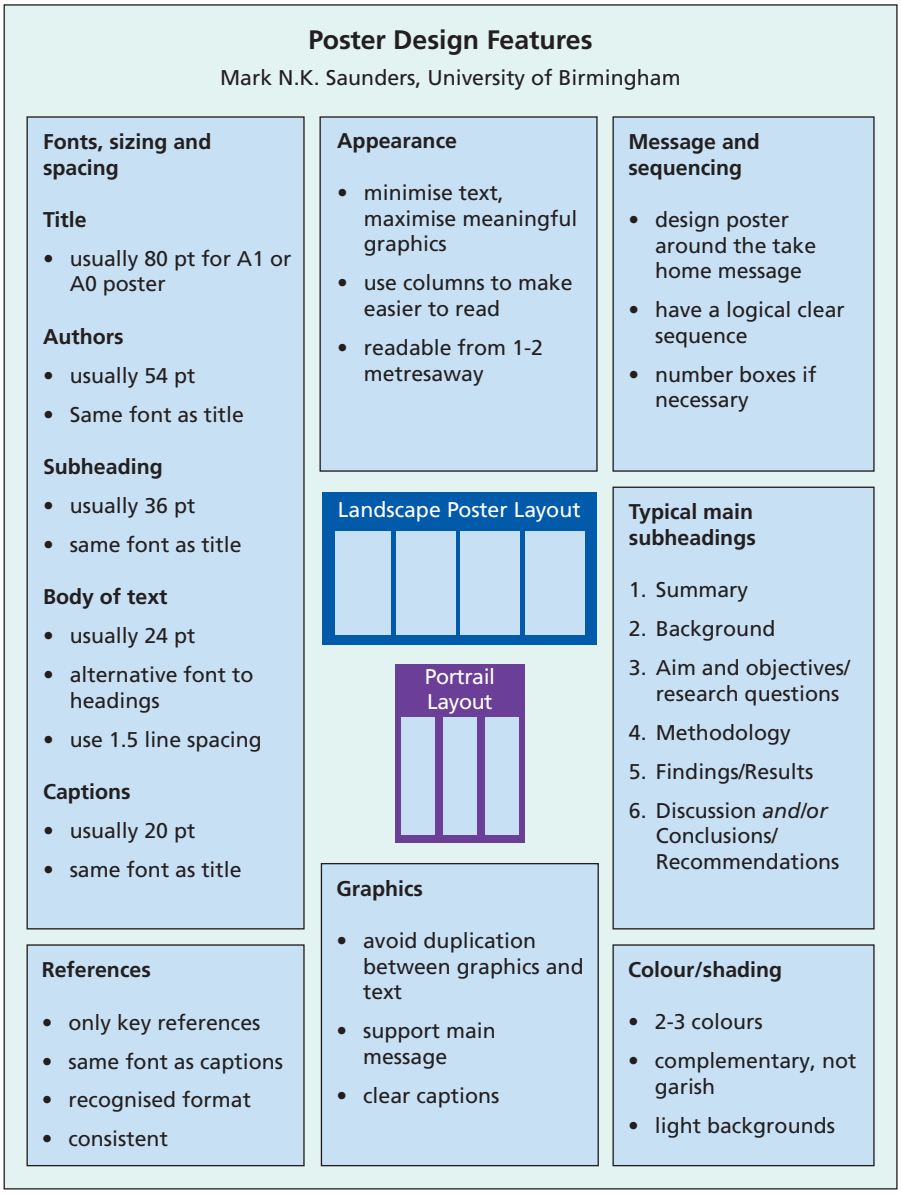


Figure 14.2 Poster design features

Presenting your poster

Your poster should be designed to 'speak' for itself. As noted it should be easy to read and easy to understand. Your role during the presentation will be, at least for some of the time it is being shown, to answer questions from those who look at and read your poster. These questions are likely to focus on seeking further information about your research. They may relate to why you chose your topic, the methods you used, the literature you read and how this informed your research, your findings, discussion and conclusions, your reflections about your research and key learning points. You therefore need to be prepared to answer a wide range of questions about your research project outside the necessarily limited scope of what you can include on your poster.

Like a traditional, oral presentation, you may consider practising your poster presentation by showing this to friends and inviting them to ask you questions, to see how well you can answer their questions. You may also need to provide a handout related to your poster presentation and you will need to consider the design and production of this.

14.12 Summary

- Writing is a powerful way of clarifying your thinking.
- Writing is a creative process, which needs to be undertaken regularly throughout your research project the storyline.
- The structure you use should be suitable for your research design and the way you analyse your data.
- The structure you use should also be suitable for the report's audience. This audience may be academics or practitioners, the latter being the case for a consultancy report.
- Your report should be laid out in such a way that your reader finds all the information readily accessible.
- You should try to develop a clear, simple writing style that will make reading the report an easy and enjoyable experience.
- Spelling and grammatical errors should be avoided.
- Do not think of your first draft as your last. Be prepared to rewrite your report several times until you think it is the best you can do.
- A reflective essay or section will allow you to comment on your experience, discuss your learning and improve your research practice.
- Presentations using slides or a poster should be carefully structured and purposeful, and practised beforehand.
- Visual aids should be used in your presentation to enhance the understanding of your audience and lend your presentation structure and professionalism.

Self-check questions

Help with these questions is available at the end of the chapter.

14.1 Your project tutor has returned your draft project report with the suggestion that you make a clearer distinction between your results and your conclusions. How will you go about this?

14.2 Why is it considered good practice to acknowledge the limitations of your research in the project report?

14.3 Re-read the quote from Wright Mills cited early in Section 14.8. Rewrite this so that his idea is communicated to the reader in the clearest way possible.

14.4 What problems need to be avoided when repositioning sections of your report in the redrafting processes?

14.5 Your friend or colleague is concerned about their project presentation. What advice will you give to help them prepare this presentation?

Review and discussion questions

14.6 Draft a plan for your project report, show it to your friends and compare your plan with those they have drafted. Explain the reason for any differences between your plan and those of your friends.

14.7 Look through several refereed academic journals that relate to your subject area. Choose an article that is based upon some primary research and note the structure of the article. Decide whether you agree with the way in which the author has structured the article and think of ways in which you may have done this differently.

14.8 Share pieces of your writing with a group of your friends. Look at the example in Box 14.12 and subject all the pieces to the 'write clearer sentences' test.



Progressing your research project

Writing your project report

- Where you have a choice about how to structure your report, use the discussion in Sections 14.4 to 14.6 to help you to devise a report structure that will be suitable for the research approach and research strategy you used, to allow you to tell a clear story about your project. Where you do not have a choice about how to structure your report, but you feel that the given format is inappropriate for your approach and strategy, consider how you may present your research within this structure to tell a clear story about your project. Discuss this with your project tutor and ensure that the structure you use meets the expectations of your examiners.
- As you draft each part of your project report, continue to review your work to ensure that the content is clear and accessible, and your writing style is appropriate. Be prepared to read your draft material very carefully and repeatedly to seek to improve its clarity and style. Where possible, re-read and amend drafts of a section or chapter when your mind is fresh.
- The structure you devise, related to your research approach and research strategy, will have implications for the way in which you discuss the role of literature, theory, methods, findings and conclusions in your project report. As you produce your draft, continue to evaluate how well these elements fit together without overlapping (see next point) in your report. Where the story of your research is not clear, you will need to continue to re-draft the report.
- As the draft of your report develops, ensure that you distinguish between describing events, outlining methods, reporting findings, and interpreting and theorising about what you found. This will be important irrespective of the structure you use so that your readers may distinguish between these elements in your work. Where you use an alternative structure and wish to include more than one of these elements in the same chapter, you will need to distinguish between these by, for example, using different sections with unmistakable headings.
- Give your report the 'reader-friendly' test to ensure that your style is easy to read, and the content is clear and free from avoidable errors.
- Use the questions in Box 1.4 to guide your reflective diary entry.

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Further reading

Becker, H. (2020) *Writing for Social Scientists* (3rd edn). Chicago IL, University of Chicago Press. A highly readable book full of anecdotes from an expert.

Charmaz, K. (2014) *Constructing Grounded Theory* (2nd edn). London: Sage. Chapter 7 contains useful advice on writing a Grounded Theory project report.

Coghlan, D. (2019) *Doing Action Research in Your Own Organisation* (5th edn). London: Sage. Chapter 11 contains useful advice on writing an Action Research project report.

Gastel, B. and Day, R.A. (2017) *How to Write and Publish a Scientific Paper* (8th edn). Cambridge: Cambridge University Press. This takes the reader through the process, with a host of useful advice. It is funny and irreverent but nonetheless valuable for that!

Neville, C. (2016) *The Complete Guide to Referencing and Plagiarism* (3rd edn). London: Open University Press McGraw-Hill. A useful guide to both how to reference and how to help ensure you do not inadvertently plagiarise the work of others.

Van Maanen, J. (2011b) *Tales of the Field: On Writing Ethnography* (2nd edn). London: The University of Chicago Press. A fascinating read even if you are not writing an ethnography, but essential if you are to understand how it may be approached.

Yin, R.K. (2018) *Case Study Research and Applications: Design and Methods* (6th edn). London: Sage. Chapter 6 contains helpful advice on writing a Case Study project report.

Case 14
Chloe's poster creation



Source: INTERFOTO / Alamy Stock Photo

It was the start of the new year and Chloe had taken a leap of faith, leaving her full-time job to complete a master's degree. Now, with her research project, she was addressing her long-standing desire to study corporate sustainability in finance. As an investor relations officer she had seen first-hand 'dishonest and greedy' finance culture, and as a volunteer for the homeless she had also seen the very real world impacts of corporate greed (Hayne 2018: 73). Her industry contacts had opened the door to her interviewing participants in a large finance organisation where she had access to all hierarchical subcultures; this access meant rich data could be collected for her interpretive case study (Schein and Schein 2019; Yin 2018).

In preparation for her research project, Chloe developed a timeline capturing study tasks, part-time work and her sister's wedding, which coincided with the end of her programme. The task of writing and re-writing the project report was a given, but a poster and video presentation was outside her comfort zone. Chloe re-adjusted her timeline to allow more space. The poster and presentation were crucial to achieving a good grade for the master's degree. Reflecting on *what* study tasks needed to be done Chloe began to think about *how* she would prepare for the poster presentation; as an introvert she knew she became stressed if she left everything to the last minute.

Chloe resolved to prioritise the poster work. The time to make a start on the structure was now: almost immediately she felt like 'procrastibaking' (procrastinating via baking). Instead she carried on, reading business research methods textbooks and watching YouTube clips on academic poster presentations (American Journal Experts 2016; Morrison 2019). A key corroborating theme was the need to take people on a research journey; even a poster has a start, middle, and end. Another theme was understanding your target audience who are often time poor, or suffering cognitive overload; so, the use of clear space and images were advised to make it easy to view, avoiding academic jargon was also advised.

Knowing she would need to write many iterations of her poster presentation and allow time for reflection, Chloe wrote her first attempt early, setting a limit of 300 words. Despite her best efforts it was 500 words and did not flow well; however, it was a start and the outline of three poster panels were emerging:

- panel 1 (start): introduction, covering key elements from the literature review on problematic cultural issues
- panel 2 (middle): key finding of different organisational subcultures having different realities
- panel 3 (end): implication and conclusion, stating the need for authentic subculture investigation to reduce dishonesty and greed in finance organisations.

Excitement was building as the poster/research was taking shape. Chloe decided to try out her presentation with her dinner guests, sticking to the three-minute time limit. Fortunately, the food was good, because the presentation needed considerably more work. Themes, although

clear in her mind, were difficult for her guests to understand. One suggested she try practising the presentation using more of her own words. Another paid her a compliment on keeping to three minutes.

Taking on board the constructive criticism, Chloe finessed her presentation further and re-read her findings chapter (Cunliffe 2011). Her increased clarity helped conceptualise the types of images needed to illustrate her poster. Chloe searched her phone and the Web for potential images, eventually purchasing two stock images online. Next, she presented the updated version to her supervisors. Their feedback was helpful: 'Be bolder in outlining the issues and avoid using organisational development and corporate sustainability academic jargon to better connect with a broader audience.'

Chloe continued revising the text on the poster and repositioning and resizing the images. During this time, she also practised the presentation using the video camera on her phone. After each practice run of the poster presentation, she would watch it back, reflecting on whether it made sense, or if a different word/phrase should be used or removed.

In addition to improving the presentation script, the video practice highlighted recording environment considerations such as lighting and sound. Some conditions she could alter, others not. On the day of filming the video, things did not initially go as anticipated. Chloe forgot parts of her script, spoke for too long, and there were also unexpected shadows and noises such as an aeroplane flying over. When she started to feel the video would not be completed, she took a break. As she sipped on her tea and meditated in the garden, she recalled what she'd given up to do this master's. Persistence, not perfection, was needed now; she had to submit tomorrow.



Figure 14.C1 Chloe's poster presentation
Source: ©2020 Clare J.M. Burns

The persistence paid off, Chloe submitted, and her supervisors and examiners were pleased with her efforts. Chloe too was pleased; she had produced a clear meaningful poster and accompanying video summarising her master's research project.

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Questions

1 What personal strengths, weaknesses and other factors impacted Chloe's ability to complete the poster presentation?

2 What personal strengths, weaknesses and other factors are impacting your ability to complete your poster presentation? What have you (or others) sacrificed to undertake this study?

3 What practical tips did Chloe consider in the development of the poster and presentation?

4 **a** Have you written a timeline to ensure your timely master's completion, allowing for various iterations of your poster and presentation? If not, revisit Section 2.9, and in particular the section on 'Timescales' and construct a Gantt chart outlining the tasks you need to do.

b When viewing Chloe's poster can you identify an image/s aligned to her start, middle, and end as well as key points?



Additional case studies relating to material covered in this chapter are available via the book's companion website: **www.pearsoned.co.uk/saunders**.

They are:

- Writing Lata's project report (focussing on approaches to writing and time management).
- Amina's story (focussing on writing a traditional (academic) report and the use of theory and interpretation of findings).
- Akasma's draft disappointment (focussing on dealing with and responding to project tutor feedback).
- Clare's research project presentation, (focussing on preparing and presenting to an academic audience).
- Elena's research project write-up, (focussing on writing a traditional (academic) project report).
- Presenting research findings to a business audience (focussing on structuring and preparing for the presentation).

Self-check answers

14.1 This is easier said than done. Start by going through your results chapter, continually asking yourself 'Did I find this out?' You will probably cut out a lot of things that you have thought about that are related to points you found out. These belong in the conclusions (or discussion) chapter.
Now turn to the conclusions chapter, asking yourself the question: 'Is this a reflection of what I found out?' If the points are a repeat of what you covered in your findings section, then delete them and make sure you write reflections on the findings.

14.2 It will demonstrate good practice in two respects. First, that you have evaluated your research design. Second, it will help you to evaluate how you would alter this design if you were going to repeat your research, or if you were going to undertake further research. Remember that there is no perfect research design.

14.3 Academic writing is often difficult to understand. This is not usually because the subject matter is complex or the thoughts profound. It is because the writer thinks it necessary to write in an 'academic' way.

14.4 The 'road map' you announced in your introduction may not now be correct. The previews and summaries at the beginning and end of the relevant chapters may need changing. A more serious potential problem is that the storyline may be altered. This should not be the case. Nonetheless, it would be important to re-read the whole report to ensure that any repositioning does not alter its sense of coherence.

14.5 You may emphasise the general point that preparation is very important, not least because this will help to overcome any nervousness that your friend will feel when they make the presentation. You may also emphasise that they should think about the audience and what is it that they want to tell them. You may tell them to make sure that the presentation has clear objectives and that it should be kept simple so that there is no danger of overloading the audience with too much information in a short period. This will mean telling the audience what they need to know and eliminating other information. You may also tell them that using visual aids will be important but that these should support the key points you wish to make and not be used to show off your technical skills as this may only serve to annoy or confuse your audience. Clear visual aids will also be helpful to your friend in delivering their presentation. You may also advise your friend to practise their presentation, to invite members of the audience to ask some questions during the actual performance to help to engage them but to remain mindful of the time allowed to complete it.

Get ahead using resources on the companion website at:
www.pearsoned.co.uk/saunders.



- Improve your IBM SPSS Statistics analysis with practice tutorials.
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- Test your progress using self-assessment questions.
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Appendix 1: Systems of referencing

Preferred styles of referencing differ both between universities and between departments within universities. Even styles that are in wide use such as 'Harvard' vary in how they are used in practice by different institutions. When this is combined with the reality that some lecturers apply an adopted style strictly, while others are more lenient, it emphasises the need for you to use the precise style prescribed in your assessment criteria. Within business and management, two author–date referencing systems predominate, the Harvard style and the American Psychological Association (APA) style, both of which are author–date systems. The alternative, numeric systems, is used far less widely.

Six points are important when referencing:

- Full credit must be given to the author or originator (the person or organisation taking main responsibility for the source) when quoting or citing others' work.
- Adequate information must be provided in the reference to enable that work to be located.
- References must be consistent, complete and accurate.
- References must be recorded using precisely the style required by your university and are often part of the marking criteria.
- Wherever you directly quote an author you should use 'quotation marks' to show this and also record the precise location (normally page number).
- If you fail to reference fully, you are likely to be accused of plagiarism (Section 3.11).

As you will see later in this appendix, when referring to an electronic document, principally a journal article, accessed online, it is becoming more usual to include that document's DOI (digital object identifier) as part of the reference. The DOI provides a permanent and unique identifier for that document. Where there is no DOI, it is usual to include the document's URL (uniform resource locator – usually its Web address). As the URL is not permanent, the date when it was accessed is also included in the reference.

Author–date systems

The Harvard system

Referencing in the text

The Harvard system is an *author–date system,* a variation of which we use in this book. It appears to have its origins in a referencing practice developed by a professor of anatomy at Harvard University in the late nineteenth century, although the expression 'Harvard system' was introduced by an English visitor to Harvard who was impressed by the system of referencing used in the library (Chernin 1988). The Harvard system uses the author's or originator's name and year of publication to identify cited documents within

the text. All references are listed alphabetically at the end of the text in a consistent format. However, there is no definite benchmark for Harvard referencing and variations exist between institutions in its use. Common variations within the Harvard system include (Neville 2016):

- Where there are more than two authors, the names of the second and subsequent authors may or may not be replaced in the text by *et al.* This phrase may be in italics and is usually followed by a full stop to signify it is an abbreviation of *et alia.*
- Name(s) of authors or originators may or may not be in UPPER CASE in the list of references.
- The year of publication may or may not be enclosed in (brackets) in the list of references.
- Capitalisation of words in the title is usually kept to a minimum rather than being used for Many of the Words in the Title.
- The title of the publication may be in *italics* or may be underlined in the list of references.

The system for referencing work in the text and in the list of references or bibliography is outlined in Table A1.1, additional conventions for referencing in the text being given in Table A1.2.

Table A1.1 Conventions when using the Harvard system to reference

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Books				
Book (first edition)	*1 author:* (Family name year)	*1 author:* (Dawson 2017)	Family name, Initials. (year). *Title.* Place of publication: Publisher.	Dawson, J. (2017). *Analysing Quantitative Survey Data.* London: Sage.
	2 or 3 authors: (Family name, Family name and Family name year)	*2 or 3 authors:* (Lee and Saunders 2017)	Family name, Initials. and Family name, Initials. (year). *Title.* Place of publication: Publisher.	Lee, B. and Saunders, M. (2017). *Conducting Case Study Research.* London: Sage.
	4+ authors: (Family name et al. year)	[4+ *authors:* (Millmore et al. 2010)	Family name, Initials., Family name, Initials. and Family name, Initials [can be discretionary to include more than first author] (year). *Title.* Place of publication: Publisher.	Millmore, M., Lewis, P., Saunders, M., Thornhill, A. and Morrow, T. (2007). *Strategic Human Resource Management: Contemporary Issues.* Harlow: FT Prentice Hall.
Book (other than first edition)	*As for* 'Book (first edition)'	(Saunders and Lewis, 2018)	Family name, Initials. and Family name, Initials. (year). *Title.* (# edn). Place of publication: Publisher.	Saunders, M. and Lewis, P. (2018). *Doing Research in Business and Management.* (2nd edn). Harlow: Pearson.

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Book (edited)	*As for* 'Book (first edition)'	(Townsend et al. 2020)	Family name, Initials. and Family name, Initials. (eds.) (year). *Title.* Place of publication: Publisher.	Townsend, K., Saunders, M.N.K., Loudoun, R. and Morrison, E.A. (eds.) (2020). *How to Keep Your Doctorate on Track.* Cheltenham: Edward Elgar.
Book (not in English language)	*As for* 'Book (first edition)'	(Fontaine et al. 2010)	Family name, Initials. and Family name, Initials. (year). *Title* [English translation of title]. Place of publication: Publisher.	Fontaine, C., Salti, S. and Thivard, T. (2010). *100 CV et lettres de motivation* [100 CV and cover letters]. Paris: Studyrama.
Book (translated into English)	*As for* 'Book (first edition)'	(Hugo 2003)	Family name, Initials. and Family name, Initials. (year). *Title.* (Initials of translator. Family name of translator. Trans). Place of publication: Publisher. (Original work published year).	Hugo, V. (2003). *Les Miserables.* (N. Denny. Trans.). London: Penguin. (Original work published 1862).
Repub-lished book	*As for* 'Book (first edition)'	(Burrell and Morgan 2016)	Family name, Initials. and Family name, Initials. (year). *Title.* Place of publication: Publisher (originally published by Publisher year).	Burrell, G. and Morgan, G. (2016). *Sociological Paradigms and Organizational Analysis.* Abingdon: Routledge (originally published by Heinemann 1979).
e-Book	*As for* 'Book (first edition)'	(Saunders 2013)	Family name, Initials. (year). *Title.* (# edn). [name of e-Book reader]. Place of publication: Publisher.	Saunders, J.J. (2013). *The Holocaust: History in an Hour* [Kindle e-Book]. London: William Collins.
Online book	*As for* 'Book (1st edition)' or 'Edited book'	(Sungsoo 2013)	Family name, Initials. and Family name, Initials. (year). *Title.* (# edn) Place of publication: Publisher. [Accessed day month year from Database name].	Burns, A.C., Veek, A. and Bush, R.F. (2017). *Marketing Research* (Global edn). Harlow: Pearson. [Accessed 16 Dec. 2021 from MyLibrary.com]

To cite	In the text		In the list of references/bibliography	
	General format	Example	General format	Example
Chapters in books				
Chapter in a book	*As for* 'Book (first edition)'	(Robson and McCartan 2016)	Family name, Initials. and Family name, Initials. (year). *Title.* (# edn). Place of publication: Publisher. Chapter .	Robson, C. and McCartan, K. (2016). *Real World Research.* (4th edn). Oxford: Blackwell. Chapter 3.
Chapter in an edited book containing a collection of articles (sometimes called a reader)	(Chapter author family name year)	(King et al. 2018)	Family name, Initials. (year). Chapter title. In Initials. Family name and Initials. Family name (eds) *Title.* (# edn). Place of publication: Publisher. pp. ###-###.	King, N., Brooks, J. and Tabari, S. (2018). Template analysis in business and management research. In M. Ciesielka and D. Jemielniak (eds) *Qualitative Methodologies in Organization Studies, Volume II: Methods and Possibilities.* London: Palgrave Macmillan. pp. 179–206.
Chapter in an online book	(Chapter author family name year)	(Denyer 2016)	Chapter author family name, Initials. (year). Chapter title. In Initials. Family name and Initials. Family name (eds) *Title.* (# edn). Place of publication: Publisher. pp. ###-###. [Accessed day month year from Database name].	Denyer, D. (2016). After the crisis: a systematic and critical review. In M. Saunders, P. Lewis and A. Thornhill. *Research Methods for Business Students.* (7th edn). Harlow: FT Prentice Hall. pp. 117–9. [Accessed 16 Dec. 2021 from MyLibrary.com]
Dictionaries and other reference books				
. . . where author known	*As for* 'Book (first edition)'	(Vogt and Johnson 2016)	Family name, Initials. (year). *Title.* (# edn). Place of Publication: Publisher. pp. ###-###.	Vogt, W.P. and Johnson, R.B. (2016). *The Sage Dictionary of Statistics and Methodology: A Nontechnical Guide for the Social Sciences.* (5th edn). Thousand Oaks, CA: Sage. p. 2.

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
. . . where no author or editor	(*Publication title* year)	(*The Right Word at the Right Time* 1985)	*Publication title.* (year). (# edn). Place of Publication: Publisher. pp. ###-###.	*The Right Word at the Right Time.* (1985). Pleasantville, NY: Readers Digest Association. pp. 563–4.
. . . where editor known and author for particular entry	(Entry author family name date)	(Watson 2008)	Entry author family name, Initials. (year). Entry title. In Initials. Family name and Initials. Family name (eds) *Title.* Place of publication: Publisher. pp. ###-###.	Watson, T. (2008). Field research. In R. Thorpe and R. Holt (eds) *The SAGE Dictionary of Qualitative Management Research.* London: Sage. pp. 99–100.
. . . where accessed online and is no author or editor	(*Publication title* year)	(*Encyclopaedia Britannica Online* 2022)	*Publication title.* (year). Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	*Encyclopaedia Britannica. Online.* (2022). Available at: http://www.britannica.com/ [Accessed 20 Mar. 2022].
. . . where accessed online and is editor or author for a particular entry	(Editor/entry author family name date)	(Hibbard et al. 2021)	Editor/entry author family name, Initials. (year). Title of entry. In *Publication Title.* Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Hibbard, J.D., Grayson, K.A. and Kotler, P. (2021). Marketing. In *Encyclopaedia Britannica.* Available at: https://www.britannica.com/topic/marketing [Accessed 16 Dec. 2021].
. . . where accessed online and no author or editor for a particular entry	(*Publication title* year)	(*Encyclopaedia Britannica Online* 2013)	*Publication title.* (year). Title of entry. Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	*Encyclopaedia Britannica Online.* (2013). Securities and Exchange Commission. Available at: https://www.britannica.com/topic/Securities-and-Exchange-Commission [Accessed 16 Dec. 2021].
Reports				
Report	*As for* 'Book (first edition)'	(Gray et al. 2016)	Family name, Initials. and Family name, Initials. (year). *Title.* Place of publication: Publisher.	Gray, D.E., Saunders M.N.K. and Farrant, K. (2016). *SME Success: Winning New Business.* London: Kingston Smith LLP.

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Report (no named author)	(Originator name *or Publication title* year)	(Mintel Group Ltd 2021)	Originator name *or* Publication title. (year). *Title.* Place of publication: Publisher.	Mintel Group Ltd. (2021). *Wearable Technology – UK -2021.* London: Mintel Group Ltd.
Organisation's annual report	(Organisation name date)	(Tesco Plc 2020)	Organisation name. (year). *Title.* Place of publication: Publisher.	Tesco Plc. (2020). *Serving Shoppers a Little Better Every Day: Annual Report and Financial Statement 2020.* Welwyn Garden City: Tesco Plc.
Online report	*As for* 'Book (first edition)'	(Thorlby et al. 2014)	Family name, Initials. and Family name, Initials. (year). *Title of report.* Available at: http://www.remainderoffull-Internetaddress/ [Accessed day month year].	Thorlby, R., Smith, J., Williams, S. and Dayan, M. (2014). *The Francis Report: One Year On.* Available at: https://www.nuffieldtrust.org.uk/files/2017-01/francis-report-one-year-on-web-final.pdf [Accessed 27 Jan. 2018].
Online report (no named author)	(Originator name *or Publication title* year)	(Mintel Group Ltd 2021)	Originator name. (year). *Title of report.* Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Mintel Group Ltd (2021) – *Designer Fashion – UK – 2021.* Available at: https://reports.mintel.com/display/1049095/ [Accessed 16 Dec. 2021].
Government and governmental bodies' publications				
Parliamentary papers including acts and bills	(Country of origin year)	(United Kingdom 2013)	Country of origin. (year). *Title.* Place of publication: Publisher.	United Kingdom. (2013). *The Financial Services (Banking Reform) Act.* London: TSO (The Stationery Office).
Parliamentary debates (Hansard)	(Country Parliament year)	(United Kingdom Parliament 2016)	Country Parliament. House of Commons (HC) or House of Lords (HL) Deb. day month year. Vol. , No. , Col. ####.	United Kingdom Parliament HC Deb. 24 Mar. 2016. Vol. 607, No. 139, Col. 1746.
Other	*As for* 'Book (first edition)'	(Francis 2013)	*As for* 'Book (first edition)'	Francis, R. (2013). *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry: Executive Summary.* London: The Stationery Office.

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Other (no named author or editor)	(Department name *or* Committee name year)	(United Nations Economic and Social Commission for Asia and the Pacific 2017)	Department name or Committee name. (year). *Title.* Place of publication: Publisher.	United Nations Economic and Social Commission for Asia and the Pacific. (2017). *Towards a Resource Efficient, Pollution-free Asia-Pacific Region.* New York: United Nations.
Other (online)	(Family name year)	(Ries 2021)	Family name, Initials. and Family name, Initials. (year). *Title of report.* Available at: http://www.remainderoffull-Internetaddress/ [Accessed day month year].	Reis, T.E. (2021). *Edelman Trust Barometer 2021.* Available at: https://www.edelman.com/sites/g/files/aatuss191/files/2021-03/2021%20Edelman%20Trust%20Barometer.pdf [Accessed 16 Dec. 2021].
Other (no named author or editor; online)	(Office *or* Department name *or* Committee name year)	(Office for National Statistics 2020)	Office *or* Department name or Committee name. (year). *Title.* Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Office for National Statistics. (2020). *Statistical Bulletin: Effects of Taxes and Benefits on UK Household Income: Financial Year Ending 2019.* Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/theeffectsoftaxesandbenefitsonhouseholdincome/financialyearending2019 [Accessed 16 Dec. 2021].
Journal articles				
Journal article (print form or facsimile of print form accessed via full text database)	*As for* 'Book (first edition)'	(Rojon et al. 2011)	Family name, Initials. and Family name, Initials. (year). Title of article. *Journal name.* Vol. , No. , pp. ###-###.	Rojon, C., McDowall, A. and Saunders, M.N.K. (2011). On the experience of conducting a systematic review in industrial, work and organizational psychology: Yes, it is worthwhile. *Journal of Personnel Psychology.* Vol. 10, No. 3, pp. 133–8.

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Journal article (facsimile of print form, where full text database details required by University)	*As for* 'Book (first edition)'	(Rojon et al., 2011)	Family name, Initials. and Family name, Initials. (year). Title of article. *Journal name.* Vol. , No. , pp. ###-###. [Accessed day month year from Database name].	Rojon, C., McDowall, A. and Saunders, M.N.K. (2011). On the experience of conducting a systematic review in industrial, work and organizational psychology: Yes, it is worthwhile. *Journal of Personnel Psychology.* Vol. 10, No. 3, pp. 133–8. [Accessed 6 Apr. 2018 from PsycARTICLES].
Journal article that is forthcoming but published online, prior to appearing in the journal; available in facsimile form	*As for* 'Book (first edition)'	(Hajli et al., 2021)	Family name, Initials. and Family name, Initials. (year). Title of article, *Journal name.* Available at: full doi *or* Internet address [Accessed day month year].	Hajli, N., Saeed, U., Tajvidi, M. and Shirazi, F. (2021). Social bots and the spread of disinformation in social media: The challenges of artificial intelligence. *British Journal of Management.* Available at: DOI: 10.1111/1467-8551.12554 [Accessed 16 Dec. 2021].
Journal article only published online, which is not published in print or facsimile form	*As for* 'Journal article made available by the publisher in advance online . . . '	(Yang and Banamah 2013)	*As for* 'Journal article made available by the publisher in advance online . . . '	Yang, K. and Banamah, A. (2013). Quota sampling as an alternative to probability sampling? An experimental study. *Sociological Research Online.* Vol. 18, No. 4. Available at: http://www.socresonline.org.uk/19/1/29.html [Accessed 4 Mar. 2014].
Magazine articles				
Magazine article	*As for* 'Book (first edition)'	(Saunders 2004)	Family name, Initials. and Family name, Initials. (year). Title of article. *Magazine name.* Vol. , No. (*or* Issue *or* day *and/or* month), pp. ###-###.	Saunders, M. (2004). Land of the long white cloud. *HOG News UK.* Issue 23, Oct. pp. 24–6.

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Magazine article (no named author)	(Originator name *or Publication name* year)	(*People Management* 2014)	Originator name *or* Publication *name.* (year). Title of article. *Magazine name.* Vol. , No. (*or* Issue *or* day *and/or* month), pp. ###-###.	People Management. (2014). Efficiency rule was misused. *People Management.* Mar. p. 17.
Magazine article (only published online)	*As for* 'Book (first edition)'	(Holmes et al. 2020)	Family name, Initials. and Family name, Initials. (year). Title of article. *Journal name.* Available at: Internet address [Accessed day month year].	Holmes, M., Saunders M.N.K. and Wheeler, N. (2020). UN general assembly: Why virtual meetings make it hard for diplomats to trust each other. *The Conversation.* Available at: https://theconversation.com/un-general-assembly-why-virtual-meetings-make-it-hard-for-diplomats-to-trust-each-other-146508 [Accessed 2 August. 2021].
News articles including newspapers and online news				
Newspaper article	*As for* 'Book (first edition)'	(Frean 2014)	Family name, Initials. and Family name, Initials. Title of article. *Newspaper name,* day month year, p. ###-###.	Frean, A. Credit Suisse bankers 'assisted tax evasion'. *The Times.* 27 Feb. 2014, p. 35.
Newspaper article (no named author)	(*Newspaper name* year)	(*The Times* 2014)	*Newspaper name.* Title of article, day month year, p. ###-###.	*The Times.* Budweiser's early win, 27 Feb. 2014, p. 33.
Newspaper article (published online)	*As for* other News articles	(Rankin 2014)	Family name, Initials. and Family name, Initials. Title of article. *Newspaper name,* day month year. Available at: http://www.full-Internetaddress/ [Accessed day month year].	Rankin J. Record number of women make 28th annual Forbes' billionaires list. *The Guardian.* 4 Mar. 2014. Available at: http://www.theguardian.com/business/2014/mar/03/record- number-women-forbes-28th-billionaires-list.html?src=linkedin [Accessed 4 Mar. 2014].

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Newspaper article (from electronic database)	*As for* other News articles	(Anderson 2009)	Family name, Initials. and Family name, Initials. Title of article. *Newspaper name,* day month year, p. (if known). [Accessed day month year from Database name].	Anderson, L. How to choose a business school. *Financial Times,* 23 Jan. 2009. [Accessed 20 Mar. 2010 from ft.com].
News article (from news website)	*As for* other News articles	(Gordon 2014)	Family name, Initials. and Family name, Initials. Title of article. *News Website,* day month year. Available at: http://www.full-Internetaddress/ [Accessed day month year].	Gordon, O. Keeping crowdsourcing honest. Can we trust the reviews? *BBC News,* 14 Feb. 2014. Available at: http://www.bbc.co.uk/news/technology-26182642 [Accessed 16 Dec. 2021].
Brochures and media/press releases				
Brochure	(Originator name *or* Brochure title year)	(BMW AG 2017)	Originator name *or* Brochure title. (year). *Title.* Place of publication: as author.	BMW AG. (2017). *The BMW X1.* Munich: as author.
Media/press releases	(Originator name *or* *Release title* year).	(BBC 2014)	Originator name *or* *Release title.* (year). *Title.* Place of publication: as author.	BBC. (2014). *BBC Trust approves proposals for BBC store.* London: as author.
Online/websites				
Internet site or specific site pages	(Source organisation year)	(European Commission 2021)	Source organisation. (year). *Title of site or page within site.* Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	European Commission. (2021). *Eurostat – Your Key to European Statistics.* Available at: http://ec.europa.eu/eurostat/web/regions/data/maintables [Accessed 16 Dec. 2021].

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Blogs (weblogs), web forums, Wikis				
Blogs (weblogs)	(Owner's family name, year of posting)	(Saunders and Hughes 2020)	Owner's family name, Owner's Initials. (year of posting). Specific subject. *Title of Blog.* Day month year (of posting). [Blog] Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Saunders, M.N.K. and Hughes, C. (2020). Maintaining trust in a virtual workspace. *Nerd's Birmingham Business School Blog.* 25 Mar. 2020. [Blog] Available at: https://blog.bham.ac.uk/business-school/2020/03/25/maintaining-the-trust-within-a-virtual-workspace/ [Accessed 2 Dec. 2021].
Web forums (Usenet groups, bulletin boards etc.)	(Author's family name, year of posting)	(Wilcox 2021)	Author's family name, Author's initials. (year of posting). Title of posting. *Name of forum.* Posted day month year (of posting). [Web forum]. Available at: http://www.remaind eroffullInternetaddress/ [Accessed day month year].	Wilcox, G. (2021). 15 everyday luxury Christmas items for the whole family *Mumsnet.* Posted 15 Dec. 2021. [Web forum] Available at: https://www.mumsnet.com/articles/luxury-gift-ideas [Accessed 16 Dec. 2021].
Wiki	(Originator name or *Wiki title* year of posting)	(CIO-Wiki 2021)	Originator name or *Wiki title. Title of Wiki.* Day Month Year (of posting). [Wiki article]. Available at: http://www.remainderoffull-Internetaddress/ [Accessed day month year].	CIO-Wiki. *Brainstorming.* 27 Apr. 2021. [Wiki article]. Available at: https://cio-wiki.org/wiki/Brainstorming [Accessed 16 Dec. 2021].
Discussion list email (where email sender known)	(Author's family name year of posting)	(Djabali 2022)	Sender's family name, Sender's Initials. (year of posting). Re. Subject of discussion. Posted day month year. Sender's email address (see note at end of table). [Accessed day month year].	Djabali, Z. (2022). Future sustainability. Posted 3 Mar. 2022. zdja . . . @mail.com [Accessed 6 Apr. 2022].

To cite	In the text		In the list of references/bibliography	
	General format	Example	General format	Example
Letters and personal emails				
Letter	(Sender's family name year)	(Penny 2018)	Sender's family name, Sender's Initials. (year). Unpublished letter to Recipient's Initials. Recipient's family name re. Subject matter, day, month, year.	Penny, J.J. (2018). Unpublished letter to M.N.K. Saunders re. Holocaust, 10 Sept. 2018.
Personal email	(Sender's family name year)	(Tubb 2021)	Sender's family name, Sender's initials. (year). Email to recipient's initials. Recipient's family name re. Subject matter, day month year.	Tubb, V. (2021). Email to M.N.K. Saunders re. Reviewers' feedback, 27 Nov. 2021.
Online images and diagrams				
Online image or diagram	*As for* 'Book (first edition)'	(Gilroy 1936)	Author's name, Author's initials. (year of production if available). *Title of image or diagram.* [Image format] name and place of source if available. Available at: http://www.remainderof-fullInternetaddress/ [Accessed day month year].	Gilroy, J. (1936). *Lovely day for a Guinness.* [Advertising poster] Print Arcade. Available at: https://www.funkyprint.co.uk/products/b08lbsddvb?variant=40676568694965&currency=GBP&utm_medium=product_sync&utm_source=google&utm_content=sag_organic&utm_campaign=sag_organic&-gclid=Cj0KCQiAwea-NBhDEARIsAJ5hwbe4rk-GbtSfGT1VeLprCWJqfoRWQm-1BJDaVOtbdXA5K2dTkRQNeDNIaAtjwEALw_wcB [Accessed 16 Dec. 2021].

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Online image or diagram (no named author)	(*Diagram or image title* year)	(*Iron Maiden, A matter of life and death* 2006)	*Title of image or diagram.* (year of production if available). [Image form], name and place of source if available. Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	*Iron Maiden, A matter of life and death.* (2006). [Tour poster] Quest Poster EU. Available at: https://www.amazon.co.uk/IRON-MAIDEN-POSTER-Matter-Death/dp/B005J6PUVY [Accessed 16 Dec. 2021].
Data sets				
Online data set	(Author/Provider name year)	(Eurostat 2021)	Author family name, Author's Initials/ Provider name. (year). Title of data set [data form] Available at: http://www.remainderoffullinternetaddress/ [Retrieved day month year]	Eurostat (2021). Contributions to euro area annual inflation (in percentage points). [Datafile] Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_ctrb&lang=en [Retrieved 16 Dec. 2021]
Other data sets (published)	(Author/Provider name year)	(Inman 2002)	Author family name, Author's Initials/Provider name. (year). Title of data set [data form]. Place of publication, publisher.	Inman, G. (2002). World of noise: Essential summer sounds from road and track [CD-ROM] Peterborough, Bike Magazine.
Other data sets (unpublished)	(Author/Provider name year)	(Tubb 2020)	Author family name, Author's Initials/ Provider name. (year). Title of data set [data form] [Unpublished].	Tubb, V. (2020). Research Methods for Business Students Market Research [Feedback forms] [unpublished].
Conference papers				
Conference paper published as part of proceedings	*As for* 'Book (first edition)'	(Saunders 2009)	Family name, Initials. and Family name, Initials. (year). Title of paper. In Initials. Family name and Initials. Family name (eds) *Title.* Place of publication: Publisher. pp. –###.	Saunders, M.N.K. (2009). A real world comparison of responses to distributing questionnaire surveys by mail and web. In J. Azzopardi (Ed.) *Proceedings of the 8th European Conference on Research Methods in Business and Management.* Reading: ACI, pp. 323–30.

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Unpublished conference paper	*As for* 'Book (first edition)'	(Saunders et al. 2010)	Family name, Initials. and Family name, Initials. (year). *Title of paper.* Unpublished paper presented at 'Conference name'. Location of conference, day month year.	Saunders, M.N.K., Slack, R. and Bowen, D. (2010). *Location, the development of swift trust and learning: insights from two doctoral summer schools.* Unpublished paper presented at the 'EIASM 5th Workshop on Trust Within and Between Organizations'. Madrid, 28–29 January 2010.
Film, video, tv, radio, downloads				
Television or radio programme	(*Television or radio programme title* year)	(*Today Programme* 2021)	*Programme title.* (year of production). Transmitting organisation and nature of transmission, day month year of transmission.	*The Today Programme.* (2021). British Broadcasting Corporation Radio broadcast, 26 Nov. 2021.
Television or radio programme that is part of a series	(*Television or radio programme series title* year)	(*The Apprentice* 2020)	*Series title.* (year of production). Episode: episode title. Transmitting organisation and nature of transmission, day month year of transmission.	*The Apprentice.* (2020). Episode: Music Managers. British Broadcasting Corporation Television broadcast, 7 Jan. 2020.
Commercial DVD	(DVD title year)	(*7-63 Up* 2011)	*DVD title.* (Year of production). [DVD]. Place of publication: Publisher.	*7-63 Up* (2019). [DVD]. London: Network.
Commercial DVD that is part of a box-set	(DVD box set title year)	(*The Office complete series 1 and 2 and the Christmas specials* 2005)	*DVD box set title* (Year of production) Episode: Episode title. [DVD]. Place of publication: Publisher.	*The Office complete series 1 and 2 and the Christmas specials.* (2005). Episode: Series 1 Christmas Special. [DVD]. London: British Broadcasting Corporation.

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Table A1.1 (*Continued*)

To cite	In the text		In the list of references/bibliography	
	General format	**Example**	**General format**	**Example**
Video download (e.g. YouTube)	(Company name *or* Family name year)	(Miller 2008)	Company name *or* Family name, Initials. (year). Title of audio download. *YouTube.* Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Miller, L. (2008). Harvard style referencing made easy. *YouTube.* Available at: https://www.youtube.com/watch?v=RH1lzyn7Exc [Accessed 25 Dec. 2021].
Audio CD	(Family name *or* Artist *or* Group year)	(Goldratt 2011)	Family name, Initials. *or* Artist. *or* Group. (year). *Title of CD.* [Audio CD]. Place of Publication: Publisher.	Goldratt, E.M. (2011). *Beyond the Goal.* [Audio CD]. Buffalo NY: Gildan Media Corporation.
Audio download (e.g. Podcast)	(Company name *or* Family name year)	(Saunders 2021)	Company name *or* Family name, Initials. (year). Title of audio download. *Title of series* [Audio podcast] Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Saunders, M.N.K. (2021). Can you trust your teams? *Greater Birmingham Chamber of Commerce Podcast 99.* [Audio podcast] Available at: https://podcasts.apple.com/us/podcast/chamber-podcast/id1330582595?mt=2 [Accessed 12 Oct. 2021].
Course materials and online teaching materials from virtual learning environments (VLEs)				
Lecture*	(Lecturer family name year)	(Saunders 2022)	Lecturer family name, Initials. (year). *Lecture on title of lecture.* Module title. Year (if appropriate) and course title. Place of lecture: Institution. Day month year.	Saunders, M.N.K. (2022). *Preparing to collect qualitative data.* Foundations in Qualitative Research. MA Social Research Methods. Birmingham: University of Birmingham. 10 Feb. 2022.
Module and course notes*	*As for* 'Book (first edition)'	(Saunders and Isaeva 2021)	Lecturer family name, Initials. (year). *Title of material.* Module title (if appropriate). Level (if appropriate) and course title. Institution, Department or School.	Saunders, M.N.K. and Isaeva, N. (2021). *Foundations in Qualitative Research Module Handbook 2021.* MA Social Research Methods. University of Birmingham, College of Social Sciences.

To cite	In the text		In the list of references/bibliography	
	General format	Example	General format	Example
Materials available on a VLE*	(Author family name year)	(Saunders 2021)	Author family name, Initials. (year of production). *Title of material* [nature of material]. Module title (if appropriate). Level (if appropriate) and course title. Institution *name of VLE* [online]. Available at: http://www.remainderoffullInternetaddress/ [Accessed day month year].	Saunders, M.N.K. (2021). *Opening an online interview and putting leverage saliency theory into practice* [PowerPoint slides]. Advanced Qualitative Interviewing. University of Birmingham *Canvas* [online]. Available at: https://canvas.bham.ac.uk/courses/47464/modules [Accessed 24 Jul. 2021].

Notes: Where date is not known or unclear, follow conventions outlined towards the end of Table A1.2.
Email addresses should not be included except when they are in the public domain. Even where this is the case, permission should be obtained or the email address replaced by '. . . ' after the fourth character, for example: 'abcd . . . @isp.ac.uk'.
*Be warned, most lecturers consider citing of lectures as 'lazy' scholarship.

Table A1.2 Additional conventions when using the Harvard system to reference in the text

To refer to	Use the general format	For example
Work by different authors generally	(Family name year; Family name year) in alphabetical order	(Cassell 2018; Dillman 2009; Robson 2016)
Different authors with the same family name	(Family name Initial year)	(Smith J. 2022)
Different works by the same author	(Family name year, year) in ascending year order	(Saunders 2020, 2021)
Different works by the same author from the same year	(Family name year letter), make sure the letter is consistent throughout	(Tosey 2014a)
An author referred to by another author where the original has not been read (*secondary reference*)*	(Family name year, cited by Family name year)	(Cassell 2017, cited by Isaeva 2018)
A work for which the year of publication cannot be identified	(Family name or Originator name nd), where 'nd' means no date	(Woollons nd)
	(Family name or Originator name c. year) where 'c.' means circa	(Hattersley c. 2018)
A direct quotation	(Family name or Originator name year, p.) where 'p.' means 'page' and is the page in the original publication on which the quotation appears	'A card sort offers the simplest form of sorting technique' (Saunders 2012, p. 112)

*For secondary references, while many universities only require you to give details of the source you looked at in your list of references, you may also be required the reference for the original source in your list of references.

Referencing in the list of references or bibliography

In the list of references or bibliography all the sources are listed alphabetically in one list by the originator or author's family name, and all authors' family names and initials are normally listed in full. If there is more than one work by the same author or originator, these are listed chronologically. A system for referencing work in the list of references or bibliography is outlined in Table A1.1. While it would be impossible for us to include an example of every type of reference you might need to include, the information contained in this table should enable you to work out the required format for all your references. If there are any about which you are unsure, Colin Neville's (2016) book *The Complete Guide to Referencing and Avoiding Plagiarism* remains one of the most comprehensive sources we have found.

For copies of journal articles from printed journals that you have obtained electronically online it is usually acceptable to reference these using the same format as printed journal articles (Table A1.1), provided you have obtained and read a facsimile (exact) copy of the article. Facsimile copies of journal articles have precisely the same format as the printed version, including page numbering, tables and diagrams, other than for the copy, which is published 'online first'. **Online first** refers to forthcoming articles that have been published online, prior to them appearing in journals. They therefore do not have a volume or part number, and the page numbering will not be the same as the final copy. When referencing an 'online first' copy in the list of references, you should always include the DOI. A facsimile copy is usually obtained by downloading the article as a pdf file that can be read on the screen and printed using Adobe Acrobat Reader.

Finally, remember to include a, b, c, etc. immediately after the year when you are referencing different publications by the same author from the same year. Do not forget to ensure that these are consistent with the letters used for the references in the main text.

The American Psychological Association (APA) style

The 'American Psychological Association style' or 'APA style' is a variation on the author–date system and was initially developed in 1929. The latest updates are outlined in the latest edition of the American Psychological Association's (2020) *Concise Guide to APA Style,* which is likely to be available for reference in your university's library.

Relatively small but significant differences exist between the Harvard system and APA style, and many authors adopt a combination of the two. The key differences are outlined in Table A1.3.

Numeric systems

Referencing in the text

When using a numeric system such as the Vancouver style, references within the project report are shown by a number that is either bracketed or in superscript. This number refers directly to the list of references at the end of the text, and it means it is not necessary for you to include the authors' names or year of publication:

'Research[1] indicates that . . . '

[1]Ritzer, G. *The McDonaldization of Society.* (6th edn). Thousand Oaks, CA: Sage, Pine Forge Press, 2011.

Table A1.3 Key differences between Harvard system and APA style of referencing

Harvard system	APA style	Comment
Referencing in the text		
(Lewis 2001)	(Lewis, 2001)	Note punctuation
(McDowall and Saunders 2010)	(McDowall & Saunders, 2011)	'&' not 'and'
(Altinay *et al.* 2014)	(Altinay *et al.* 2014)	Iff three or more authors. Note use of punctuation and italics.
Referencing in the list of references or bibliography		
Berman Brown, R. and Saunders, M. (2008). *Dealing with Statistics: What You Need to Know.* Maidenhead: Open University Press.	Berman Brown, R. & Saunders, M. (2008). *Dealing with statistics: what you need to know.* Open University Press.	Note: use of 'and' and '&'
Varadarajan, P.R. (2003). Musings on relevance and rigour of scholarly research in marketing. *Journal of the Academy of Marketing Science.* Vol. 31, No. 4, pp. 368–76. [Accessed 6 Apr. 2010 from Business Source Complete].	Varadarajan, P.R. (2003). Musings on relevance and rigour of scholarly research in marketing. *Journal of the Academy of Marketing Science.* 31 (4): 368–376. doi: 10.1177/0092070303258240	Note: Volume, part number and page numbers; DOI (digital object identifier) number given in APA. Name of database not given in APA if DOI number given; Date accessed site not included in APA.

Referencing in the list of references

The list of references in numeric systems is sequential, referencing items in the order they are referred to in your project report. This means that they are unlikely to be in alphabetical order. When using the numeric system you need to ensure that:

- The layout of individual references is that prescribed by the style you have adopted. This is likely to differ from both the Harvard system (Tables A1.1 and A1.2) and APA style (Table A1.3) and will be dependent upon precisely which style has been adopted. The reference to Ritzer's book in the previous sub-section (indicated by the number and the associated endnote at the end of this appendix) follows the Vancouver style. Further details of this and other numeric styles can be found in Neville's (2016) book.
- The items referred to include only those you have cited in your report. They should therefore be headed 'References' rather than 'Bibliography'.
- Only one number is used for each item, except where you refer to the same item more than once but need to refer to different pages. In such instances you use standard bibliographic abbreviations to save repeating the reference in full (Table A1.4).

Table A1.4 Bibliographic abbreviations

Abbreviation	Explanation	For example
Op. cit. (opere citato)	Meaning 'in the work cited'. This refers to a work previously referenced, and so you must give the author and year and, if necessary, the page number	Robson (2011) *op. cit.* pp. 23–4.
Loc. cit. (loco citato)	Meaning 'in the place cited'. This refers to the same page of a work previously referenced, and so you must give the author and year	Robson (2011) *loc. cit.*
Ibid. (ibidem)	Meaning 'the same work given immediately before'. This refers to the work referenced immediately before, and replaces all details of the previous reference other than a page number if necessary	*Ibid.* p. 59.

References

American Psychological Association (2020) *Concise Guide to APA Style* (7th edn). Washington, DC: American Psychological Association.

Chernin, I. (1988) 'The "Harvard System": A mystery dispelled', *BMJ,* Vol. 297, pp. 1062–3.

Neville, C. (2016) *The Complete Guide to Referencing and Avoiding Plagiarism* (3rd edn). Maidenhead: Open University Press.

Further reading

American Psychological Association (2020) *Concise Guide to APA Style* (7th edn.) Washington, DC: American Psychological Association. The most recent version of this manual contains full details of how to use this form of the author–date system of referencing as well as how to lay out tables, figures, equations and other statistical data. It also provides guidance on grammar and writing.

Neville, C. (2016) *The Complete Guide to Referencing and Avoiding Plagiarism* (3rd edn). Maidenhead: Open University Press. This fully revised edition provides a comprehensive, up-to-date discussion of the layout required for a multitude of information sources including online. It includes guidance on the Harvard, American Psychological Association, numerical and other referencing styles, as well as chapters on plagiarism and answering frequently asked questions.

Taylor & Francis (nd) *Taylor & Francis Reference Style APA Quick Guide.* Available at: http://www.tandf.co.uk/journals/authors/style/quickref/tf_a.pdf [Accessed 24 Dec. 2021]. This document provides an excellent one-page guide to using the American Psychological Association author–date system as well as a direct link to a document providing full details of this style including how to cite references in the text.

University of New South Wales (2019) *Harvard Referencing Electronic Sources.* Available at: https://student.unsw.edu.au/harvard-referencing-electronic-sources [Accessed 24 Dec. 2021]. This document provides an excellent guide to referencing electronic sources and has useful 'troubleshooting' and 'frequently asked questions' sections.



Appendix 2 Calculating the minimum sample size

In some situations, such as experimental research, it is necessary for you to calculate the precise minimum sample size you require. This calculation assumes that data will be collected from all cases in the sample and is based on:

- how confident you need to be that the estimate is accurate (the level of confidence in the estimate);
- how accurate the estimate needs to be (the margin of error that can be tolerated);
- the proportion of responses you expect to have a particular attribute.

Provided that you know the level of confidence and the margin of error, it is relatively easy to estimate the proportion of responses you expect to have a particular attribute. To do this, ideally you need to collect a pilot sample of about 30 observations and from this to infer the likely proportion for your main survey. It is therefore important that the pilot sample uses the same methods as your main survey. Alternatively, you might have undertaken a very similar survey and so already have a reasonable idea of the likely proportion. If you do not, then you need either to make an informed guess or to assume that 50 per cent of the sample will have the specified attribute – the worst scenario. Most surveys will involve collecting data on more than one attribute. It is argued by De Vaus (2014) that for such multi-purpose surveys you should determine the sample size using those variables in the sample that are likely to have the greatest variability.

Once you have all the information you substitute it into the formula,

$$n = \rho\,\% \times q\% \times \left[\frac{z}{e\%}\right]^2$$

where:

n is the minimum sample size required
$r\%$ is the percentage belonging to the specified category
$q\%$ is the percentage not belonging to the specified category
z is the z value corresponding to the level of confidence required (see Table A2.1)
$e\%$ is the margin of error required.

Table A2.1 Levels of confidence and associated *z* values

Level of confidence	*z* value
90% certain	1.65
95% certain	1.96
99% certain	2.57



Box A2.1 Focus on student research

Calculating the minimum sample size

To answer his research question, Jon needed to estimate the proportion of a total population of 4,000 restaurant home-delivery customers who had had meals delivered to their homes at least five times in the past year. Based on his reading of the research methods literature he decided that he needed to be 95 per cent certain that his 'estimate' was accurate (the level of confidence in the estimate); this corresponded to a *z* score of 1.96 (Table A2.1). Based on his reading he also decided that his 'estimate' needed to be accurate to within plus or minus 5 per cent of the true percentage (the margin of error that can be tolerated).

To calculate the minimum sample size, Jon still needed to estimate the proportion of respondents who had meals delivered to their homes at least five times in the past year. From his SMS questionnaire he discovered that 12 out of the 30 restaurant home delivery customers had meals delivered to their homes at least five times in the past year – in other words, that 40 per cent belonged to this specified category. This meant that 60 per cent did not.

Jon substituted these figures into the formula:

$$\begin{aligned} n &= 40 \times 60 \times \left(\frac{1.96}{5}\right)^2 \\ &= 2400 \times 0.154 \\ &= 2400 \times 0.154 \\ &= 369.6 \end{aligned}$$

His minimum sample size, therefore, was 370 returns.

As the total population of restaurant home delivery customers was 4,000, Jon could now calculate the adjusted minimum sample size:

$$\begin{aligned} n' &= \frac{369.6}{1 + \left(\frac{369.6}{4000}\right)} \\ &= \frac{369.6}{1 + 0.092} \\ &= \frac{369.6}{1.092} \\ &= 338.46 \end{aligned}$$

Because of the small total population, Jon needed a minimum sample size of only 339. However, this assumed he had a response rate of 100 per cent.

Where your population is less than 10,000, a smaller sample size can be used without affecting the accuracy. This is called the *adjusted minimum sample size* (Box A2.1). It is calculated using the following formula:

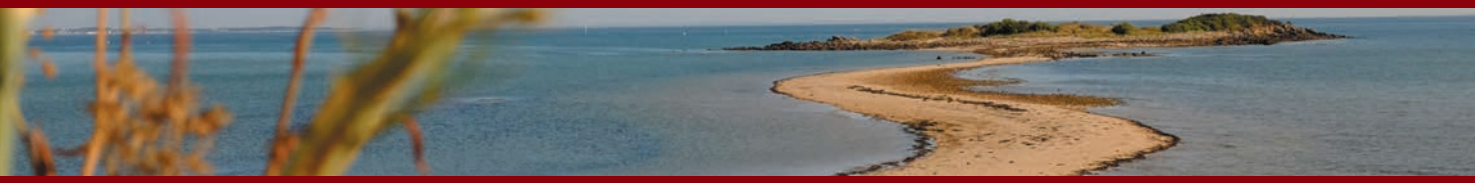
$$n' = \frac{n}{1 + \left(\frac{n}{N}\right)}$$

where:

n' is the adjusted minimum sample size
n is the minimum sample size (as calculated above)
N is the total population.

Reference

De Vaus, D.A. (2014) *Surveys in Social Research* (6th edn). London: Routledge.



Appendix 3 Guidelines for non-discriminatory language*

Writing in a non-discriminatory manner is essential in all areas of business and management. The growth of the Black Lives Matter into a global movement has emphasised the inherent white supremacy in much of society including its organisations (Black Lives Matter nd). We discussed this in Chapter 4's opening vignette where we considered the privileging of white settlers' over indigenous peoples' views and the associated exclusion of first nations' knowledges, cultures, rights practices and laws in favour of Western colonial systems. Such supremacy and associated discrimination can be reinforced by the use of language that reiterates beliefs and prejudices and, as well as being oppressive, unfair and incorrect, emphasises the need to think carefully about the impact of our language on others.

Alongside ethnicity and race, care needs to be exercised when referring to people of differing genders and people with disabilities. For example, in Section 14.6 we noted how the use of language that assumes the gender of a group of people, such as referring to a clerical assistant as 'she', not only is inaccurate but also offensive to people. There is now recognition that gender is about social identity and that not all people fall under one of two categories (Lowrey 2017) and that terms used need to reflect this.

The task of ensuring that the language you use is non-discriminatory may at first seem difficult. However, it is crucial that you do so. An increasing number of universities have developed their own guidelines, which are available via their intranet or the Internet. However, if your university has not developed its own guidelines, we hope those in this appendix will help you to ensure that your language is inclusive rather than being discriminatory.

Guidelines for ethnicity

Attention needs to be paid when referring to different ethnic groups. This is especially important where the term used refers to a number of ethnic groups. For example, the term 'Asian' includes a number of diverse ethnic groups that can be recognised with the terms 'Asian peoples' or 'Asian communities'. Similarly, the diversity of people represented by the term 'Black' can be recognised by referring to 'Black peoples' or 'Black communities'. Where possible, the individual groups within these communities should be identified separately.

'Black' is used as a term to include people who are discriminated against due to the colour of their skin. It is often used to refer to people of Caribbean, South Asian and

*The advice of Juliet Kele (Northumbria University), in revising this appendix is acknowledged gratefully.

African descent. Hyphenated terms such as 'Afro-Caribbean', 'Black-British' or 'African-American' should not be used. Rather, as in the United Kingdom's 2021 census (Office for National Statistics 2020), terms such as 'White and Black African' or 'White and Asian' should be used to refer to people of mixed or multiple ethnic groups; while, for example, terms such as 'Black British' should be used to refer to second or subsequent generations who, although born in the country, often wish to retain their origins. Within the UK, beware, the term 'British', can imply false unity, and people from England, Northern Ireland, Scotland and Wales may not wish to be identified as British.

Care should also be taken in using terms that carry racist overtones. Some of the more common race-neutral terms are listed in Table A3.1. However, if you are unsure of the term to use, you may wish to ask someone from the appropriate community for the most acceptable current term.

Table A3.1 Racist terms and race-neutral alternatives

Racist term	Race-neutral alternative
civilised/civilisation	industrialised world
developing nations	non-western nations
ethnic minority	minority ethnic
half-caste	mixed parentage, dual heritage
less developed countries	non-western countries
mixed race	mixed parentage, dual heritage
native	native-born (if used to refer to people born in a particular place)

Source: Developed from British Sociological Association (n.d.)

Guidelines for gender

When referring to both sexes, it is inappropriate to use the terms 'men' or 'women' and their gender-based equivalents; in other words, do not use gender-specific terms generically. Some of the more common gender-neutral alternatives are listed in Table A3.2.

Recognising that not all people fall under one of two categories for gender or sex, we would also encourage you not to use phrases such as 'both genders . . . ', 'either gender . . . ' or refer to 'neither gender . . . ' when referring to all people. You may also wish to consider adopting the use of non-binary pronouns to refer to individuals or people. Table A3.3 lists some of those currently in use. However, beware, as the use of 'they', 'their' or 'them' to refer to a single person is considered by many to be grammatically incorrect. In addition, if your audience is not familiar with non-binary pronouns, we would recommend adding a footnote explaining why you are using non-binary pronouns such as: 'In my project report I use the following non-binary gender pronouns [*list of all used*] because the people I am citing and/or to whom I am referring use these pronouns to refer to themselves and I wish to respect their identities.'

Table A3.2 Gender-specific terms and gender-neutral alternatives

Gender-specific term	Gender-neutral alternative
businessmen	business people, executive
chairman	chair, chairperson, convenor
conman	confidence trickster
Dear Sir	Dear Sir/Madam
disseminate	broadcast, inform, publicise
forefathers	ancestors
foreman	supervisor
layman	lay person
man	person
man hours	work hours
mankind	humanity, humankind, people
man-made	manufactured, synthetic
manning	resourcing, staffing
manpower	human resources, labour, staff, workforce
master copy	original, top copy
masterful	domineering, very skilful
policewoman/policeman	police officer
rights of man	people's/citizens' rights, rights of the individual
seminal	classical, formative
women	people
working man/working woman	worker, working people
workmanlike	efficient, skilful, through

Source: Developed from British Psychological Society (2018); British Sociological Association (n.d.)

Table A3.3 Pronouns and alternative non-binary forms

Pronoun	Alternative non-binary forms			
she he	they	zie	sie	ey
her him	them	zim	sie	eir
her his	their	zir	hir	eir
hers his	their	zis	hirs	eirs
herself himself	themself	zieself	hirself	emself

Source: Developed from Lowrey (2017); University of Minnesota (2020)

Guidelines for disability

Disability is also an area where terminology is constantly changing as people voice their own preferences. Despite this, general guidelines can be offered:

- Do not use medical terms as these emphasise the condition rather than the person.
- Where it is necessary to refer to a person's medical condition, make the person explicit (see Table A3.4).
- Where referring to historical and some contemporary common terms, place speech marks around each term.
- Some people's disabilities are less visible or non-visible being hidden and without physical signs. These have a significant impact on individuals' daily lives and, as they may not be readily recognisable, may be difficult for others to acknowledge fully or appreciate the challenges faced.

There are non-disablist alternatives for the more common disablist terms. These are summarised in Table A3.4. However, if you are unsure of the term to use, ask someone from the appropriate group for the most acceptable current term.

Table A3.4 Disablist terms and non-disablist alternatives

Disablist term	Non-disablist alternative
the blind	blind and partially sighted people, visually impaired people
cripple	mobility impaired person
the deaf	deaf or hard of hearing people
the disabled, the handicapped, invalid	disabled people, people with disabilities, employees with disabilities
dumb, mute	person with a speech impairment
epileptic, epileptics	person who has epilepsy
handicap	disability
mentally handicapped	person with a learning difficulty or learning disability
mentally ill, mental patient	mental health service user
patient	person
spastic	person who has cerebral palsy
wheelchair-bound	wheelchair user
victim of, afflicted by, suffering from, crippled by	person who has, person with

Source: Adapted from British Sociological Association (n.d.)

References

Black Lives Matter (nd) *About Black Lives Matter.* Available at https://blacklivesmatter.com/about/ [Accessed 29 January 2021].

British Psychological Society (2018) *Style Guide for Authors and Editors.* Available at https://www.bps.org.uk/news-and-policy/bps-style-guide-authors-and-editors [Accessed 29 January 2021].

British Sociological Association (nd) *Language and the BSA: Ethnicity & Race.* Available at https://www.britsoc.co.uk/Equality-Diversity/ [Accessed 29 January 2021].

Lowrey, S. (2017) 'A guide to non-binary pronouns and why they matter'. *HuffPost.* Available at https://www.huffpost.com/entry/non-binary-pronouns-why-they-matter_b_5a03107be4b0230facb8419a?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvLnVrLw&guce_referrer_sig=AQAAAEYFf-uVADzIY458TRt8SsQ2Uy11ig3OESF4NAVKAsGiU7ur-wLs96KE0sRZmBdyMfM-AGxySp1ru5dLebWVRytGGZlv1ZVNFeovM45oNT6C_h3INf6u3NSsEvvN-PW3xC0dRHBXlWurz2B-ENS96LEcsI9vHMKYaIL-K1P0F5AyD7 [Accessed 1 Feb. 2021].

Office for National Statistics (2020) *Census 2021 Paper Questionnaires.* Available at https://www.ons.gov.uk/census/censustransformationprogramme/questiondevelopment/census2021paperquestionnaires [Accessed 1 Feb. 2021].

University of Minnesota (2020) *Non-binary Gender Pronouns.* Available at http://writing.umn.edu/sws/quickhelp/grammar/nonbinary.html [Accessed 29 Jan. 2021].



Glossary

50th percentile Middle value when all the values of a variable are arranged in rank order; usually known as the median.

A

abductive approach Approach to theory development involving the collection of data to explore a phenomenon, identify themes and explain patterns, to generate a new – or modify an existing – theory, which is subsequently tested.

abstract (1) Summary, usually of an article or book, which also contains sufficient information for the original to be located. (2) Summary of the complete content of the project report.

access (1) The process involved in gaining entry into an organisation to undertake research. (2) The situation where a research participant is willing to share data with a researcher. *See also* cognitive access, continuing access, physical access.

Action Research Research strategy concerned with the management of a change and involving close collaboration between practitioners and researchers. The results flowing from Action Research should also inform other contexts.

active participation Situation where a researcher enters a research setting with the intention of participating actively in the role of an insider. *See also* participant observation, moderate participation.

active response rate Total number of responses divided by the total number in the sample after ineligible and unreachable respondents have been excluded. *See* ineligible respondent, unreachable respondent. *See also* break off, complete response, complete refusal, partial response, total response rate.

active voice The voice in which the action of the verb is attributed to the person. For example, '*I* conducted interviews'.

ad hoc survey A general term normally used to describe the collection of data that only occurs once due to the specificity of focus. Although the term is normally interpreted as referring to questionnaires, it also includes other procedures such as structured observation and structured interviews. *See also* survey.

aim *See* research aim.

alpha coefficient *See* Cronbach's alpha.

alternative hypothesis Tentative, usually testable statement that there is an association, difference or relationship between two or more variables. Often referred to as H_a. *See also* hypothesis, null hypothesis.

analysis Ability to break down data and to clarify the nature of the component parts and the relationship between them.

analysis of variance Statistical test to determine the probability (likelihood) that the values of a numerical data variable for three or more independent samples or groups are different. The test assesses the likelihood of any difference between these groups occurring by chance alone.

analytic induction Inductive process for analysing qualitative data that involves the iterative examination of a number of strategically selected cases to identify the cause of a particular phenomenon.

anonymised data Personal data that if effectively anonymised mean that individuals cannot be identified. *See also* personal data.

anonymity (1) Process of concealing the identity of participants in all documents resulting from the research. (2) No one, not even the researcher, will be able to identify by whom responses are made.

ANOVA *See* analysis of variance.

appendix A supplement to the project report. It should not normally include material that is essential for the understanding of the report itself but additional relevant material in which the reader may be interested.

application Ability to apply certain principles and rules in particular situations.

applied research Research of direct and immediate relevance to practitioners that addresses issues they see as important and is presented in ways they can understand and act upon.

archival research Research strategy that uses manuscripts, documents, administrative records, objects, sound and

audio-visual materials held in archives, special collections or other repositories as principal sources of data.

asynchronous Not undertaken in real time, working offline.

asynchronous online interview Online interview conducted using emails or texts in which there are gaps in time or delays between the interviewer asking a question and the participant providing an answer. *See also* online interview, synchronous online interview.

attitude variable Variable that records data about what respondents feel about something.

autocorrelation Extent to which the value of a variable at a particular time (t) is related to its value at the previous time period ($t-1$)

autoethnography Ethnographic strategy that describes and systematically analyses personal experiences in order to understand cultural experience. *See also* critical ethnography, ethnography, interpretive ethnography, realist ethnography.

autodriving Visual interview that is 'self-driven' by the interviewee talking about visual images taken of her or him in a specific setting. *See also* photoelicitation, visual interview.

availability sampling *See* convenience sampling.

axial coding Process of recognising relationships between categories in grounded theory.

axiology Branch of philosophy concerned with the role of values and ethics within the research process.

B

bar graph/chart Graph for showing frequency distributions for a categorical or grouped discrete data variable, which highlights the highest and lowest values.

base period Period against which index numbers are calculated to facilitate comparisons of trends or changes over time. *See also* index number.

basic research Research undertaken purely to understand processes and their outcomes, predominantly in universities as a result of an academic agenda, for which the key consumer is the academic community.

behaviour variable Variable that records data about behaviours, what people did in the past, do now or will do in the future.

beneficence Actions designed to promote beneficial effects. *See also* code of ethics.

between persons analysis Analyses conducted on variations between participants' responses in a research study. *See also* within-individual level analysis.

between-subjects design Experimental design allowing a comparison of results to be made between an experimental group and a control group. *See also* experiment, within-subjects design.

bibliographic details The information needed to enable readers to find original items consulted or used for a research project. These normally include the author, date of publication, title of article, title of book or journal.

bibliography Alphabetical list of the bibliographic details for all relevant items consulted and used, including those items not referred to directly in the text. The university will specify the format of these.

big data Data sets that are massive in volume, complex in variety (comprising both structured and unstructured data) added to at high velocity and available through the Internet of Things or artificial intelligence. They are analysed by powerful computer techniques to reveal patterns and trends. *See also* structured data, unstructured data.

biographical interview Participant-focused research interview designed gain a chronological reflection of a participant's life experiences. *See also* in-depth interview, semi-structured interview, narrative interview.

blog A personal online journal on which an individual or group of individuals record opinions, information and the like on a regular basis for public consumption. Most blogs are interactive allowing visitors to leave comments. 'Blog' is an abbreviation of 'weblog'.

Boolean logic System by which the variety of items found in a search based on logical propositions that can be either true or false can be combined, limited or widened.

box plot Diagram that provides a pictorial representation of the distribution of the data for a variable and statistics such as median, inter-quartile range, and the highest and lowest values.

brainstorming Technique that can be used to generate and refine research ideas. It is best undertaken with a group of people.

break off Level of response to questionnaires or structured interviews in which less than 50 per cent of all questions answered other than by a refusal or no answer. Break off therefore includes complete refusal.

broker *See* gatekeeper.

browsing Viewing relevant journals' web pages to gain an idea of their most recent and 'advance online' content.

C

CAQDAS Computer-Aided Qualitative Data Analysis Software.

case (1) Individual element or group member within a sample or population such as an employee. (2) Individual unit for which data have been collected.

case study Research strategy that involves the empirical investigation of a phenomenon within its real life context, using multiple sources of evidence.

categorical data Data whose values cannot be measured numerically but can either be classified into sets (categories) or placed in rank order.

categorising Process of developing categories and subsequently attaching these categories to meaningful units of data. *See also* unitising data, units of data.

category question Closed question in which the respondent is offered a set of mutually exclusive categories and instructed to select one.

causal relationship Relationship between two or more variables in which the change (effect) in one (dependent) variable is caused by a change in the other (independent) variable(s).

causality Relationship between cause and effect. Everything that happens will have a cause, while each action will cause an effect.

census Collection of data from every possible case or group member in a population.

central limit theorem The larger the absolute size of a sample, the more closely its distribution will be to the normal distribution. *See* normal distribution.

central tendency measure Generic term for statistics that can be used to provide an impression of those values for a variable that are common, middling or average.

chain sampling *See* snowball sampling.

chat room Online forum operating in synchronous mode. *See also* synchronous.

chi square test Statistical test to determine the probability (likelihood) that two categorical data variables are independent. A common use is to discover whether there are statistically significant associations between the observed frequencies and the expected frequencies of two variables presented in a cross-tabulation.

classic approach to observational research Traditional observation role which claims to be objective and to rely solely on the researcher's perspective and interpretation to make sense of what is observed. *See also* complete observer, complete participant, non-participant observer, observer as participant, participant as observer.

classic experiment Experiment in which two groups are established and members assigned at random to each. *See also* experiment, experimental group.

clean language practice Use of language that minimises potential for contaminating the participant's experiences and thus introducing bias to their responses. *See also* cleanness rating.

cleanness rating Method to assess the extent a question's language is not leading within the wider context of the specific interview.

closed question Question that provides a number of alternative answers from which the respondent is instructed to choose.

cluster sampling Probability sampling procedure in which the population is divided into discrete groups or clusters prior to sampling. A random sample (systematic or simple) of these clusters is then drawn.

code (1) Single word or short phrase, sometimes abbreviated, used to label a unit of data. (2) Number or word used to represent a response by a respondent or participant. *See also* coding, codebook, coding template unit of data. (3) Sociological term referring to conventionalised or shared understandings and expectations that operate at group and societal levels, which affect how members of a group or society make sense of their world, interpret signs and behave. *See also* dominant code, semiotic analysis.

code of ethics Statement of principles and procedures for the design and conduct of research. *See also* privacy, research ethics, research ethics committee.

codebook Complete list of all the codes used to code data variables.

coding Process of labelling of data using a code that symbolises or summarises the meaning of that data. *See also* axial coding, categorising, code, focused coding, initial coding, open coding, selective coding, unitising data, unit of data.

coding schedule list of pre-determined mutually exclusive labels and categories characterising aspects of interest about which data are collected using structured observation

coding template Hierarchical list of codes and themes, which is used as the central analytical tool in Template Analysis. *See also* Template Analysis.

coding with gerunds Analytical approach using verbs functioning as nouns to code actions or interactions in qualitative data. *See also* Grounded Theory Method, qualitative data.

coefficient of determination Number between 0 and 1 that enables the strength of the relationship between a numerical dependent variable and a numerical independent variable to be assessed. The coefficient represents the proportion of the variation in the dependent variable that can be explained statistically by the independent variable. A value of 1 means that all the variation in the dependent variable can be explained statistically by the independent variable. A value of 0 means that none of the variation in the dependent variable can be explained by the independent variable. *See also* regression analysis.

coefficient of multiple determination Number between 0 and 1 that enables the strength of the relationship between a numerical dependent variable and two or more numerical independent variables to be assessed. The coefficient represents the proportion of the variation in the dependent variable that can be explained statistically by the independent variables. A value of 1 means that all the variation in the dependent variable can be explained statistically by the independent variables. A value of 0 means that none of the variation in the dependent variable can be explained by the independent variables. *See also* multiple regression analysis.

coefficient of variation Statistic that compares the extent of spread of data values around the mean between two or more variables containing numerical data.

cognitive access Process of gaining intended participants acceptance and trust to enable access to collect data *See also* informed consent.

cohort study Study that collects data from the same cases over time using a series of 'snapshots'.

collaborative observation Situation where researcher does not assume a dominant research role in relation to those being observed but treats informants as collaborators by involving them in many aspects of the research process. *See also* classic approach to observational research.

collinearity Extent to which two or more independent variables are correlated with each other. Also termed multicollinearity.

comparative proportional pie chart Diagram for comparing both proportions and totals for all types of data variables.

compiled data Data that have been processed, such as through some form of selection or summarising.

complete observer Observational role in which the researcher does not reveal the purpose of the research activity to those being observed. However, unlike the complete participant role, the researcher does not take part in the activities of the group being studied.

complete participant Observational role in which the researcher attempts to become a member of the group in which research is being conducted. The true purpose of the research is not revealed to the group members.

complete refusal Level of non-response to questionnaires or structured interviews in which none of the questions are answered.

complete response Level of response to questionnaires or structured interviews in which over 80 per cent of all questions answered other than by a refusal or no answer.

computer-aided personal interviewing (CAPI) Type of interviewing in which the interviewer reads questions from a computer screen and enters the respondent's answers directly into the computer.

computer-aided telephone interviewing (CATI) Type of telephone interviewing in which the interviewer reads questions from a computer screen and enters the respondent's answers directly into the computer.

conclusion Section of the project report in which judgements are made rather than just facts reported. New material is not normally introduced in the conclusion.

concurrent embedded design Mixed methods research design where the collection of either quantitative or qualitative data is embedded within the collection of the other. *See also* concurrent mixed methods research, embedded mixed methods research.

concurrent mixed methods research Research using both quantitative and qualitative methods that are conducted concurrently during a single phase of data collection and analysis. *See also* concurrent embedded design, concurrent triangulation design, mixed methods research, single-phase research design.

concurrent triangulation design Mixed methods research design where quantitative and qualitative data are collected in the same phase so that these data can be compared to see where they converge or diverge in relation to addressing your research question. *See also* concurrent mixed methods research.

confidentiality (1) Concern relating to the right of access to the data provided by the participants and in particular the need to keep these data secret or private. (2) Promise made by the researcher not to reveal the identity of participants or present findings in a way that enables participants to be identified.

confounding variable Extraneous but difficult to observe or measure variable than can potentially undermine the inferences drawn about the relationship between the independent variable and the dependent variable. *See also* control variable, experiment.

connotative sign Sign that is either a substitute for or a part of the thing for which it stands. *See also* denotative sign, semiotic analysis, sign.

consent form Written agreement, signed by both parties in which the participant agrees to take part in the research and gives her or his permission for data to be used in specified ways.

consent *See* informed consent.

constant comparison Process of constantly comparing data to analytical categories and vice versa, as well comparing data with other data and each category with other categories, to develop higher level categories and further your analysis towards the emergence of a grounded

theory. *See also* inductive approach, Grounded Theory Method.

construct Attributes that, although not directly observable, can be inferred and assessed using a number of indicators.

construct validity Extent to which your measurement questions actually measure the presence of those constructs you intended them to measure. *See also* convergent validity, discriminant validity.

consultancy report *See* management report.

content analysis Analytical technique of categorising and coding text, voice and visual data using a systematic coding scheme to enable quantitative analysis. *See also* latent content, manifest content.

content validity *See* face validity.

contextual data Additional data recorded when collecting primary or secondary data that reveals background information about the setting and the data collection process.

contingency table Technique for summarising data from two or more variables so that specific values can be read.

continuing access Gaining agreed research access to an organisation on an incremental basis.

continuous data Data whose values can theoretically take any value (sometimes within a restricted range) provided they can be measured with sufficient accuracy.

contrived data Data that result from a researcher organising an experiment, interview or survey. *See also* natural data.

control group Group in an experiment that, for the sake of comparison, does not receive the intervention in which you are interested. *See also* experiment, experimental group.

control variable Unwanted but measurable variable that needs to be kept constant to avoid it influencing the effect of the independent variable on the dependent variable. *See also* confounding variable, experiment.

controlled index language The terms and phrases used by databases to index items within the database. If search terms do not match the controlled index language, the search is likely to be unsuccessful.

convenience sampling Non-probability haphazard sampling procedure in which cases are selected only on the basis that they are easiest to obtain. *See also* haphazard sampling, non-probability sampling.

convergent interview Participant focused research interview that commences as an unstructured, in-depth interview before using more specific and focused probing questions to converge on an explanation.

convergent validity Overlap (or correlation) between two different scales that have been used to measure the same construct.

conversational space map Visual representation of the number of words in each utterance by the interviewer and the participant for an entire interview.

correlation Extent to which two variables are related to each other. *See also* correlation coefficient, negative correlation, positive correlation.

correlation coefficient Number between –1 and +1 representing the strength of the relationship between two ranked or numerical variables. A value of +1 represents a perfect positive correlation. A value of –1 represents a perfect negative correlation. Correlation coefficients between +1 and –1 represent weaker positive and negative correlations, a value of 0 meaning the variables are perfectly independent. *See also* negative correlation, Pearson's product moment correlation coefficient, positive correlation, Spearman's rank correlation coefficient.

coverage Extent to which a data set covers the population it is intended to cover.

covering letter Letter accompanying a questionnaire, which explains the purpose of the survey. *See also* introductory letter.

covert observation Observation where intention to observe is concealed from intended informants who are observed without being aware of this. *See also* overt observation.

covert research Research undertaken where those being researched are not aware of this fact.

Cramer's V Statistical test to measure the association between two variables within a table on a scale where 0 represents no association and 1 represents perfect association. Because the value of Cramer's V is always between 0 and 1, the relative strengths of significant associations between different pairs of variables can be compared.

creative thinking technique One of a number of techniques for generating and refining research ideas based on non-rational criteria. These may be, for example, heavily in favour of the individual's preferences or the spontaneous ideas of the individual or others. *See also* brainstorming, Delphi technique, relevance tree.

criterion validity Extent to which a scale, measuring instrument or question measures what it is intended to measure. *See also* internal validity.

criterion-related validity Ability of a statistical test to make accurate predictions.

critical case sampling Non-probability purposive sampling procedure which focuses on selecting those cases on the basis of making a point dramatically or

because they are important. *See also* purposive sampling, non-probability sampling.

critical discourse analysis Discourse analysis that adopts a critical realist philosophy drawing a distinction between the natural and social world. *See also* discourse analysis.

critical ethnography Ethnographic strategy that questions the status quo and often adopts an advocacy role to bring about change. *See also* autoethnography, ethnography, interpretive ethnography, realist ethnography.

critical incident Activity or event where the consequences were so clear that the respondent has a definite idea regarding its effects.

critical incidence technique A technique in which respondents are asked to describe in detail a critical incident or number of incidents that is key to the research question. *See also* critical incident.

critical (literature) review Detailed and justified analysis and commentary of the merits and faults of the literature within a chosen area, which demonstrates familiarity with what is already known about your research topic.

critical realism Philosophical stance that what we experience are some of the manifestations of the things in the real world, rather than the actual things. *See also* direct realism, realism.

Cronbach's alpha Statistic used to measure the consistency of responses across a set of questions (scale items) designed together to measure a particular concept (scale). It consists of an alpha coefficient with a value between 0 and 1. Values of 0.7 or above suggest that the questions in the scale are internally consistent. *See also* scale item, scale.

cross-posting Receipt by individuals of multiple copies of an email, often due to the use of multiple mailing lists on which that individual appears.

cross-sectional research Study of a particular phenomenon (or phenomena) at a particular time, i.e. a 'snapshot'.

cross-tabulation *See* contingency table.

D

data Facts, opinions and statistics that have been collected together and recorded for reference or for analysis.

data cleaning Process of ensuring a transcript is accurate by correcting any transcription errors. *See also* transcript.

data condensation Process of selecting, simplifying, abstracting and transforming the qualitative data you have collected from all sources. The activity is argued to make these data stronger and is part of data display and analysis. *See also* data display, data display and analysis.

data display Process of organising and assembling data into summary diagrammatic or visual displays to help understand what is happening. *See also* data condensation, data display and analysis.

data display and analysis Approach for the collection and analysis of qualitative data that involves three concurrent activity flows (subprocesses) of data condensation, data display, and drawing and verifying conclusions. *See also* data condensation, data display.

data management plan A document that outlines how data will be collected, organised, managed, stored, secured, backed up and, where applicable, shared.

data matrix Table format in which data are usually entered into analysis software consisting of rows (cases) and columns (variables).

data requirements table A table designed to ensure that, when completed, the data collected will enable the research question(s) to be answered and the objectives achieved.

data sampling Process of only transcribing those sections of an audio-recording that are pertinent to your research, having listened to it repeatedly beforehand.

data saturation Stage when any additional data collected provides few, if any, new insights.

debriefing Providing research participants with a retrospective explanation about a research project and its purpose where covert data collection has occurred.

deception Deceiving participants about the nature, purpose or use of research by the researcher(s). *See also* informed consent, research ethics.

decile One of 10 sections when data are ranked and divided into 10 groups of equal size.

deductive approach Approach to theory development involving the testing of a theoretical proposition by the employment of a research strategy specifically designed for the purpose of its testing.

deductive explanation building Deductive process for analysing qualitative data that involves the iterative examination of a number of strategically selected cases to test a theoretical proposition.

deliberate distortion Form of bias that occurs when data are recorded inaccurately on purpose. It is most common for secondary data sources such as organisational records.

delivery and collection questionnaire Data collection technique in which the questionnaire is delivered to each respondent. She or he then reads and answers the same set of questions in a predetermined order without an interviewer being present before the completed questionnaire is collected.

Delphi technique Technique using a group of people who are either involved or interested in the research topic to generate and select a more specific research idea.

demographic variable Variable that records data about characteristics.

denotative sign Sign in which the meaning being suggested or implied is reasonably obvious or visible. *See also* connotative sign, semiotic analysis, sign.

deontological view View that the ends served by research can never justify research which is unethical.

dependent variable Variable that changes in response to changes in other variables.

descriptive data *See* nominal data.

descriptive observation Observation where the researcher concentrates on observing the physical setting, the key informants and their activities, particular events and their sequence and the attendant processes and emotions involved. *See also* focused observation, selective observation.

descriptive statistics Generic term for statistics that can be used to describe variables.

descriptive study Study to produce an accurate representation of persons, events or situations.

descripto-explanatory study Study whose purpose is both descriptive and explanatory where, usually, description is the precursor to explanation.

deviant sampling *See* extreme case sampling.

dialogic interview Participant focused research interview designed to establish rapport with the interviewee and gain her or his trust in order to engage reflexively to allow a more open discussion to occur in which pre-conceived ideas and beliefs may be evaluated.

diary Systematic, participant-centred data collection procedure which participants complete over time to record their data. *See also* diary study, qualitative diary study, quantitative diary study.

diary study Research project or part of a research project based on the use of research diaries. *See also* diary, qualitative diary study, quantitative diary study.

dichotomous data Nominal data that are grouped into two categories. *See also* nominal data.

direct participation and observation Procedure used in participant observation to collect data. *See also* participant observation.

direct realism Philosophical stance that what you see is what you get: what we experience through our senses portrays the world accurately. *See also* critical realism, realism.

directional hypothesis Tentative, usually testable, explanation of the direction of the association, difference or relationship between two or more variables. *See also* alternative hypothesis, hypothesis, null hypothesis.

directional null hypothesis Tentative, usually testable statement that there is no directional association, difference or relationship between two or more variables. *See also* alternative hypothesis, directional hypothesis, null hypothesis.

discourse Term used in discourse analysis to describe how language is used to shape meanings and give rise to social practices and relations. *See also* discourse analysis.

discourse analysis General term covering a variety of approaches to the analysis of language in its own right. It explores how discourses construct or constitute social reality and social relations through creating meanings and perceptions. *See also* interdiscursivity, intertextuality, critical discourse analysis.

discrete data Data whose values are measured in discrete units and therefore can take only one of a finite number of values from a scale that measures changes in this way.

discussion Section of the project report in which the wider implications of the findings (and conclusions) are considered.

dispersion measures Generic term for statistics that can be used to provide an impression of how the values for a variable are dispersed around the central tendency.

dissertation Usual name for research projects undertaken as part of undergraduate and taught master's degrees. Dissertations are usually written for an academic audience.

distinctive format semi-structured interviews Range of different distinctive structure formats used as part of an interview alongside other questions.

divergent validity Absence of overlap (or correlation) between different scales used to measure theoretically distinct constructs. *See also* construct validity.

Documentary research Research strategy that uses official documents and/or personal documents as the source of data.

document secondary data Data that, unlike the spoken word, endure physically (including digitally) as evidence allowing them to be transposed across both time and space and reanalysed for a purpose different to that for which they were originally collected. They include text, audio and visual media.

document summary Type of summary used an analytical aid. *See also* interim summary, transcript summary.

document visual data Visual data comprising two-dimensional static, two-dimensional moving and three-dimensional lived media. *See also* found visual image, three-dimensional and lived media, two-dimensional static media, two-dimensional moving media.

DOI Digital object identifier name used to uniquely identify an electronic document such as a specific journal article stored in an online database.

dominant code Conventional understandings and expectations influenced by prevailing ideology. *See also* Code (3).

double-phase research design Research involving two phases of data collection and analysis. *See also* sequential mixed methods research.

Durbin–Watson statistic Statistical test to measure the extent to which the value of a dependent variable at time t is related to its value at the previous time period, $t - 1$ (autocorrelation). The statistic ranges in value from zero to 4. A value of 2 indicates no autocorrelation. A value of towards zero indicates positive autocorrelation. A value towards 4 indicates negative autocorrelation. *See also* autocorrelation.

E

ecological validity Type of external validity referring to the extent to which findings can be generalised to realistic real-life situations. *See also* external validity.

effect size index Measure of the practical significance of a statistically significant difference, association or relationship. The statistic is normally used when the data sample is large.

electronic interview *See* online interview.

electronic questionnaire Internet or online questionnaire. *See also* Internet questionnaire, online questionnaire.

element Individual case or group member within a sample or population such as an employee.

elite person access When an individual who is notable in their field (but does not necessarily have an organisational affiliation) is willing to provide data to the researcher.

email interview Series of emails each containing a small number of questions rather than one email containing a series of questions.

embedded mixed methods research Use of quantitative and qualitative methods in research design where use of one is embedded within the other. *See also* concurrent embedded design, concurrent mixed methods research.

emergent case study Case study strategy where the researcher allows the focus of the research to emerge through their engagement with the case study environment. *See also* case study.

engaged scholarship participative form of research in which you work with the organisation or group throughout the research process and obtain the advice and perspectives of key stakeholders to understand a complex problem.

epistemological relativism Subjectivist approach to knowledge that recognises knowledge is historically situated and that social facts are social constructions agreed on by people rather than existing independently.

epistemology Branch of philosophy concerned with assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how we can communicate knowledge to others.

ethics *See* research ethics, research ethics committee, code of ethics.

ethnography Research strategy that focuses upon describing and interpreting the social world through first-hand field study.

evaluation Process of judging materials or methods in terms of internal accuracy and consistency or by comparison with external criteria.

evaluative study Study focussing upon the effectiveness of a strategy, policy, programme, initiative or process.

event variable Variable that records data about events, what happened in the past, now or will happen in the future.

existing contacts Colleagues, friends, relatives or fellow students already known to you, who may agree to become research informants, participants or respondents.

experiential data Data about the researcher's perceptions and feelings as the research develops.

experiential meaning Equivalence of meaning of a word or sentence for different people in their everyday experiences.

experiment Research strategy whose purpose is to study the probability of a change in an independent variable causing a change in another, dependent variable. Involves the definition of null and alternative hypotheses; random allocation of participants to either an experimental group(s) or a control group; manipulation of the independent variable; measurement of changes in the dependent variable; and control of other variables. *See also* between-subjects design, control group, experimental group, quasi-experiment.

experimental group Group in an experiment that receives the intervention in which you are interested. *See also* control group, experiment.

explanatory study Study that focuses on studying a situation or a problem in order to explain the relationships between variables.

exploratory data analysis (EDA) Approach to data analysis that emphasises the use of diagrams to explore and understand the data.

exploratory study Research that aims to seek new insights into phenomena, to ask questions, and to assess the phenomena in a new light.

external researcher Researcher who wishes to gain access to an organisation for which she or he does not work. *See also* access, internal researcher.

external validity Extent to which the research findings from a particular study are generalisable to all relevant contexts.

extreme case sampling Non-probability purposive sampling procedure that focuses on unusual or special cases. *See also* purposive sampling, non-probability sampling.

F

fabrication Act of inventing any part of your research including but not limited to participants, data, findings and conclusions. This is a totally unacceptable and unethical course of action. *See also* falsification.

face validity Agreement that a question, scale or measure appears logically to reflect accurately what it was intended to measure.

factual variable Variable that records factual data.

falsification Act of distorting or misrepresenting any part of your research including but not limited to data, findings and conclusions. This is a totally unacceptable and unethical course of action. *See also* fabrication.

feasibility [of access] Practicability of negotiating access to conduct research.

fieldwork (1) Traditional ethnographic approach that involves the researcher physically going to the place where intended informants live, work or otherwise socially interact, to conduct observation. *See also* naturalistic observation. (2) Collection of data from respondents, participants or informants in their own settings.

filter question Closed question that identifies those respondents for whom the following question or questions are not applicable, enabling them to skip these questions.

focus group Group interview, composed of a small number of participants, facilitated by a 'moderator', in which the topic is defined clearly and precisely, and there is a focus on enabling and recording interactive discussion between participants. *See also* group interview.

focused coding Analysis or reanalysis of data to identify which of the initial codes may be used as higher level codes to categorise larger units of data to further the analysis towards the emergence of a grounded theory.

focused interview Interviewer exercises direction over the interview while allowing the interviewee's opinions to emerge as he or she responds to the questions of the researcher.

focused observation Phase in an observation study when the researcher focuses their observations on particular events or interactions between key informants. *See also* descriptive observation, selective observation.

follow-up Contact made with respondents to thank them for completing and returning a survey and to remind non-respondents to complete and return their surveys.

forced-choice question *See* closed question.

forum *See* Internet forum.

found visual image Photograph or other still image which already exists, is accessible to the researcher and relevant to the research. *See also* visual data, two-dimensional static media.

frequency distribution Table for summarising data from one variable so that specific values can be read.

frequency polygon Line graph connecting the mid points of the bars of a histogram or bar graph.

full-text online database Online database that indexes and provides a summary and full text of articles from a range of journals. Sometimes includes books, chapters from books, reports, theses and conference papers.

fully integrated mixed methods research Use of both quantitative and qualitative methods throughout the research. *See also* partially integrated mixed methods research.

functionalist paradigm Paradigm concerned with rational explanations and developing sets of recommendations within the current structures such as why a particular organisational problem is occurring in terms of the functions they perform.

fundamental research *See* basic research.

G

Gantt chart Chart that provides a simple visual representation of the tasks or activities that make up a project, each being plotted against a time line.

gatekeeper Person, often in an organisation, who controls research access.

general focus research question Question that flows from the research idea and may lead to several more detailed questions or the definition of research objectives.

generalisability Extent to which the findings of a research study are applicable to other settings.

generalisation Making of more widely applicable propositions based upon the process of deduction from specific cases.

Goldilocks test Test to decide whether research questions are either too big, too small, too hot or just right. Those that are too big probably demand too many resources. Questions that are too small are likely to be of insufficient substance,

while those that are too hot may be so because of sensitivities that may be aroused as a result of doing the research.

grammatical error Error of grammar that detracts from the authority of the project report.

graph Visual display that illustrates the values of one variable or the relationship between two or more variables.

grey literature items that have not been through the peer review process and have been published in formats such as conference proceedings, dissertations or theses, government reports and other institutions reports. *See also* white literature.

grounded theory (1) Including both Grounded Theory Methodology and Grounded Theory Method. (2) Theory that is grounded in or developed inductively from a set of data. *See also* Grounded Theory (Methodology), Grounded Theory Method, inductive approach.

Grounded Theory Method Data collection procedures and analytic techniques used in a Grounded Theory research strategy to derive meaning from the subjects and settings being studied. *See also* Grounded Theory (Methodology).

Grounded Theory Methodology Research strategy offering distinctive, sequential guidelines for using qualitative methods inductively to develop theory from data collected by a series of observations or interviews. *See also* deductive approach, Grounded Theory Method, inductive approach.

group interview General term to describe all non-standardised interviews conducted with two or more people.

H

habituation Situation where, in observation studies, the informants being observed become familiar with the process of observation so that they take it for granted. This is an attempt to overcome 'observer effect' or reactivity.

haphazard sampling Non-probability sampling procedure in which cases are selected without any obvious principles of organisation. *See also* convenience sampling, non-probability sampling.

harking Hypothesizing after results are known.

hermeneutics Strand of interpretivism that focuses on the study of cultural artefacts such as texts, symbols, stories, images. *See also* interpretivism.

heterogeneous sampling Non-probability purposive sampling procedure which focuses on obtaining the maximum variation in the cases selected. *See also* purposive sampling, non-probability sampling.

heteroscedasticity Extent to which the data values for the dependent and independent variables have unequal variances. *See also* variance.

histogram Diagram for showing frequency distributions for a grouped continuous data variable in which the area of each bar represents the frequency of occurrence.

homogeneous sampling Non-probability purposive sampling procedure which focuses on selecting cases from one particular subgroup in which all the members are similar. *See also* purposive sampling, non-probability sampling.

homoscedasticity Extent to which the data values for the dependent and independent variables have equal variances. *See also* variance.

hybrid access Use of both traditional access and Internet-mediated access to conduct research.

hypothesis (1) Tentative, usually testable, explanation that there is an association, difference or relationship between two or more variables. Often referred to as H_1 *See also* alternative hypothesis, non-directional hypothesis, directional hypothesis, null hypothesis. (2) Testable proposition about the relationship between two or more events or concepts.

hypothesis testing Classical approach to assessing the statistical significance of findings from a sample. *See also* hypothesis, non-directional hypothesis, directional hypothesis.

I

iconic sign Sign in which the signifier resembles the object being signified. *See also* indexical sign, semiotic analysis, sign, symbolic sign.

ideology *See* dominant code.

idiomatic meaning Meaning ascribed to a group of words that are natural to a native speaker but that is not deducible from the individual words.

in-depth interview *See* unstructured interview.

incommensurability Assertion that the radical humanist, radical structuralist, interpretive and functionalist paradigms contain mutually incompatible assumptions and therefore cannot be combined. *See also* functionalist paradigm, interpretive paradigm, radical humanist paradigm, radical structuralist paradigm.

independent groups *t*-test Statistical test to determine the probability (likelihood) that the values of a numerical data variable for two independent samples or groups are different. The test assesses the likelihood of any difference between these two groups occurring by chance alone.

independent measures Use of more than one experimental group in an experiment where more than one intervention or manipulation is to be tested and measured. *See also* experiment.

independent variable Variable that causes changes to a dependent variable or variables.

index number Summary data value calculated from a base period for numerical variables, to facilitate comparisons of trends or changes over time. *See also* base period.

indexical sign Sign in which the object being signified is inherently indicated. *See also* iconic sign, semiotic analysis, sign, symbolic sign.

individual person access When an individual, who is not affiliated to an organisation, is willing to provide data.

inductive approach Approach to theory development involving the development of a theory as a result of the observation of empirical data.

ineligible respondent Respondent selected for a sample who does not meet the requirements of the research.

inference, statistical *See* statistical inference.

inferred consent Informants, participants or respondents may or may not fully understand the implications of taking part but their consent to participate is inferred from their participating in the research. The researcher assumes that data may be recorded, analysed, used, stored or reported as she or he wishes without clarifying such issues with those who take part. *See also* informed consent.

informant Person who agrees to be observed in participant observation or structured observation studies.

informant error Error that occurs when an informant is observed in a situation that is inconsistent with their normal behaviour patterns, leading to an atypical response. *See also* informant.

informant interview Interview guided by the perceptions of the interviewee.

informant verification Form of triangulation in which the researcher presents written accounts of, for example, interview notes to participants for them to verify the content. *See also* triangulation.

informed consent Position achieved when intended participants are fully informed about the nature, purpose and use of research to be undertaken and their role within it, and where their consent to participate, if provided, is freely given. *See also* deception,

initial coding *See* open coding.

initial sample Purposively selected initial case from which to collect and analyse data used in Grounded Theory. *See also* grounded theory (method).

instrument *See* questionnaire.

integer A whole number.

inter-library loan System for borrowing a book or obtaining a copy of a journal article from another library.

inter-quartile range Difference between the upper and lower quartiles, representing the middle 50 per cent of the data when the data values for a variable have been ranked.

inter-rater reliability Extent which two coders agree when coding the same set of data.

interdiscursivity Way one discourse is introduced into another discourse within discourse analysis. *See also* discourse analysis.

interim summary Type of summary used to outline progress and to aid analysis. *See also* document summary, transcript summary.

internal researcher Person who conducts research within an organisation for which they work. *See also* cognitive access, external researcher.

internal validity Extent to which findings can be attributed to interventions rather than any flaws in your research design. *See also* ecological validity.

Internet forum Commonly referred to as Web forums, message boards, discussion boards, discussion forums, discussion groups and bulletin boards. Usually only deal with one topic and discourage personal exchanges.

Internet questionnaire *See* online questionnaire.

Internet-mediated access Use of Internet technologies to gain virtual access to conduct research.

Internet-mediated observation Adaptation of traditional observation from oral/visual/near to textual/digital/virtual to allow researchers purely to observe or participate with members of an online community to collect data. *See also* netnography.

Internet-mediated structured observation Type of Internet-mediated observation that broadly follows the approach to structured observation. *See also* Internet-mediated observation, Internet-mediated participant observation, structured observation.

interpretive ethnography Ethnographic strategy stressing subjectivity, reflection and identifying multiple meanings. *See also* autoethnography, ethnography, critical ethnography, realist ethnography.

interpretive paradigm Paradigm concerned with the way humans attempt to make sense of the world around them; for example, understanding the fundamental meanings attached to organisational life.

interpretivism Philosophical stance that advocates humans are different from physical phenomena because they create meanings. Argues that human beings and their social worlds cannot be studied in the same way as physical phenomena due to the need to take account of complexity.

intertextuality Way a text or texts overtly or covertly borrow from and are informed by other texts within discourse analysis. *See also* discourse analysis.

interval data Numerical data for which the difference or 'interval' between any two data values for a particular

variable can be stated but for which the relative difference cannot be stated. *See also* numerical data.

interview guide Plan for conducting a semi-structured interview containing opening comments, list of themes, questions and prompts to encourage discussion, and comments to close it. Sometimes referred to as an interview schedule, although this is more appropriate to a structured interview. See also unstructured interview, semi-structured interview, structured interview.

interview schedule *See* structured interview.

interviewee bias Attempt by an interviewee to construct an account that hides some data or when she or he presents herself or himself in a socially desirable role or situation.

interviewer bias Attempt by an interviewer to introduce bias during the conduct of an interview, or where the appearance or behaviour of the interviewer has the effect of introducing bias in the interviewee's responses.

interviewer-completed questionnaire Data collection procedure in which an interviewer reads the same set of questions to the respondent in a predetermined order and records his or her responses. *See also* structured interview, telephone questionnaire.

intensity sampling Non-probability purposive sampling procedure which focuses on cases which reveal the phenomenon of interest richly but are not the most extreme. *See also* purposive sampling, non-probability sampling, extreme case sampling.

intra-rater reliability Reliability of coding by a single coder over time.

intranet-mediated access Use of an intranet within an organisation to gain access to conduct research.

introduction Opening to the project report, which gives the reader a clear idea of the central issue of concern of the research, states the research question(s) and research objectives, and explains the research context and the structure of the project report.

introductory letter Request for research access, addressed to an intended participant or organisational broker/gatekeeper, stating the purpose of the research, the nature of the help being sought, and the requirements of agreeing to participate. *See also* covering letter, gatekeeper.

intrusive research methods Methods that involve direct access to participants, including qualitative interviewing, observation, longitudinal research based on these methods and phenomenologically based approaches to research. *See also* access, cognitive access.

investigative question One of a number of questions that need to be answered in order to answer your overarching research question meet your research aim. *See also* overarching research question, research question, research aim

'in vivo' codes Names or labels for codes based on actual terms used by those who take part in research.

J

journal *See* professional journal, refereed academic journal.

judgemental sampling *See* purposive sampling.

K

Kendall's rank correlation coefficient Statistical test that assesses the strength of the relationship between two ranked data variables, especially where the data for a variable contain tied ranks. For data collected from a sample, there is also a need to calculate the probability of the correlation coefficient having occurred by chance alone.

key word Basic term selected from the controlled index language specified by the online database to describe the research question(s) and objectives to search the tertiary literature.

Kolmogorov–Smirnov test Statistical test to determine the probability (likelihood) that an observed set of values for each category of a variable differs from a specified distribution. Common uses are to discover whether a data variable's distribution differs significantly from a normal distribution, or an alternative distribution such as that of the population from which it was selected.

kurtosis Pointedness or flatness of a distribution's shape compared with the normal distribution. If a distribution is pointier or peaked, it is leptokurtic and the kurtosis value is positive. If a distribution is flatter, it is platykurtic and the kurtosis value is negative. *See also* normal distribution.

L

latent content Meanings in the data that may lie behind the manifest content and so need to be interpreted or inferred. *See also* content analysis, manifest content.

law of large numbers Samples of larger absolute size are more likely to be representative of the population from which they are drawn than smaller samples and, in particular, the mean (average) calculated for the sample is more likely to equal the mean for the population, providing the samples are not biased.

lemmatization Removal of inflectional endings, taking categories and inflections into account, to reduce a word to its base or 'lemma'.

level of access Nature and depth of access to participants required and achieved. *See also* cognitive access, continuing access, physical access.

leverage-saliency theory Theory suggesting that single design attributes will have different leverages for different individuals on the decision to respond positively or negatively to a request to participate in research. *See also* non-response.

lexical meaning Precise meaning of an individual word.

library single search interface Library interface to search collections of full text articles, and online public access catalogue (OPAC) of print and digital books and other materials at same time.

Likert-style rating question Rating question that allows the respondent to indicate how strongly she or he agrees or disagrees with a statement.

line graph Diagram for showing trends in longitudinal data for a variable.

linearity Degree to which change in a dependent variable is related to change in one or more independent variables. *See also* dependent variable, independent variable.

list question Closed question, in which the respondent is offered a list of items and instructed to select those that are appropriate.

literal replication Replication of findings across selected multiple case studies in a case study strategy. *See also* case study, theoretical replication.

literature review *See* critical (literature) review.

logical reasoning Process used in theory development to explain why relationships may exist based on what is already known.

long-term trend The overall direction of movement of numerical data values for a single variable after variations have been smoothed out. *See also* moving average.

longitudinal data Set of data repeated over time usually at regular intervals.

longitudinal study Study of a particular phenomenon (or phenomena) over an extended period of time.

lower quartile Value below which a quarter of the data values lie when the data values for a variable have been ranked.

M

mail questionnaire *See* postal questionnaire.

management report Abbreviated version of the project report, usually written for a practitioner audience. Normally includes a brief account of objectives, method, findings, conclusions and recommendations.

manifest content Components in the data that are clearly visible and can be counted. *See also* content analysis, latent content.

Mann–Whitney *U*-test Statistical test to determine the probability (likelihood) that the values of a ordinal data variable for two independent samples or groups are different. The test assesses the likelihood of any difference between these two groups occurring by chance alone and is often used when the assumptions of the independent samples *t*-test are not met.

matched pair analysis Used in an experimental design to match participants in an experimental group with those in a control group before conducting the experiment where random assignment is not possible. *See also* quasi-experiment.

matrix question Series of two or more closed questions in which each respondent's answers are recorded using the same grid.

maximum variation sampling *See* heterogeneous sampling.

mean Average value calculated by adding up the values of each case for a variable and dividing by the total number of cases.

measurement validty *See* criterion-related validity.

median Middle value when all the values of a variable are arranged in rank order; sometimes known as the 50th percentile.

mediating variable Variable that transmits the effect of an independent variable to a dependent variable. *See also* dependent variable, independent variable.

member validation Process of allowing participants to comment on and correct data to validate these.

memo writing Key element used in Grounded Theory Method during the collection, analysis and interpretation of data, which helps to facilitate and link these stages of research and aid the development of a grounded theory. May also be used in other research strategies.

method Procedures and techniques used to obtain and analyse research data, including for example questionnaires, observation, interviews, and statistical and non-statistical techniques.

methodological rigour Strength and quality of the research method used in terms of the planning, data collection, data analysis, and subsequent reporting; and therefore the confidence that can be placed in the conclusions drawn. *See also* theoretical rigour.

methodology Theory of how research should be undertaken, including the theoretical and philosophical assumptions upon which research is based and the implications of these for the method or methods adopted.

minimal interaction Process in which the observer tries as much as possible to 'melt into the background', having as little interaction as possible with the subjects of the observation. This is an attempt to overcome observer effect. *See also* observer effect.

mixed methods Use of both quantitative and qualitative data collection procedures and analysis procedures either at the same time (concurrent) or one after the other (sequential).

mixed-model research Combination of quantitative and qualitative data collection procedures and analysis procedures as well as combining quantitative and qualitative approaches in other phases of the research such as research question generation.

mixed sampling Sampling design uses a combination of two or more discrete samples, each selected using either probability or non-probability sample selection procedures.

mobile questionnaire Data collection procedure in which the questionnaire is delivered electronically to each respondent's mobile telephone. They then read and answer the same set of questions in a predetermined order without an interviewer being present before returning it electronically. *See also* online questionnaire.

modal group Most frequently occurring category for data that have been grouped.

mode Value of a variable that occurs most frequently.

Mode 0 knowledge creation Research based on power and patronage, these being particularly visible in the close relationships between sponsor and researcher.

Mode 1 knowledge creation Research of a fundamental rather than applied nature, in which the questions are set and solved by academic interests with little, if any, focus on exploitation of research by practitioners.

Mode 2 knowledge creation Research of an applied nature, governed by the world of practice and highlighting the importance of collaboration both with and between practitioners.

Mode 3 knowledge creation Research growing out of Mode 1 and Mode 2 whose purpose is 'to assure survival and promote the common good at various levels of social aggregation' (Huff and Huff 2001:S53).

moderate participation Situation where a researcher enters a research setting with the intention of taking on some of the attributes of being an 'insider' where necessary while maintaining other characteristics of being an 'outsider'. *See also* participant observation, active participation.

moderating variable Variable that affects the relationship between an independent variable and a dependent variable. *See also* dependent variable, independent variable.

moderator Facilitator of focus group interviews. *See also* focus group, group interview.

mono method Use of a single data collection procedure and corresponding analysis technique or techniques.

mono method qualitative Use of a single qualitative data collection procedure and corresponding qualitative analysis technique or techniques.

mono method quantitative Use of a single quantitative data collection procedure and corresponding quantitative analysis technique or techniques.

moving average Statistical method of smoothing out variations in numerical data recorded for a single variable over time to enable the long-term trend to be seen more clearly. *See also* long-term trend.

multi-method Use of more than one data collection procedure and corresponding analysis technique or techniques.

multi-method qualitative Use of more than one qualitative data collection procedure and corresponding qualitative analysis technique or techniques.

multi-method quantitative Use of more than one quantitative data collection procedure and corresponding quantitative analysis technique or techniques.

multi-organisation access Process of gaining entry into multiple organisations to conduct research.

multi-phase research design Research involving more than two phases of data collection and analysis. *See also* sequential mixed methods research.

multi-stage sampling Sampling design that occurs in two or more successive stages and uses either probability, non-probability or both types of sample selection procedures.

multicollinearity *See* collinearity.

multiple bar graph/chart Diagram for comparing frequency distributions for categorical or grouped discrete or continuous data variables, which highlights the highest and lowest values.

multiple line graph Diagram for comparing trends over time between numerical data variables.

multiple methods Use of more than one data collection procedure and analysis technique or techniques. *See also* mixed methods.

multiple regression analysis Process of calculating a coefficient of multiple determination and regression equation using two or more independent variables and one dependent variable. For data collected from a sample, there is also a need to calculate the probability of the regression coefficient having occurred by chance alone. *See also* coefficient of multiple determination, regression analysis, regression equation.

multiple-dichotomy method Method of data coding using a separate variable for each possible response to an open question or an item in a list question. *See also* list question, open question.

multiple-response method Method of data coding using the same number of variables as the maximum number

of responses to an open question or a list question by any one case. *See also* list question, open question.

multiple-source secondary data Secondary data created by combining two or more different data sets prior to the data being accessed for the research. These data sets can be based entirely on documentary or on survey data, or can be an amalgam of the two.

N

narrative Personal account that is told in a sequenced way and interprets an event or series of events, which is significant for the narrator and which convey meaning to the researcher. *See also* narrative inquiry.

Narrative Analysis Approaches to collection and analysis of qualitative data that preserves the integrity and narrative value of data collected, thereby avoiding their fragmentation. *See also* thematic narrative analysis.

narrative inquiry Qualitative research strategy to collect the experiences of participants as whole accounts or narratives, or which attempts to reconstruct such experiences into narratives. *See also* narrative.

narrative interview Participant-focused research interview used to generate stories through chronological reflection of life experiences. *See also* in-depth interview, semi-structured interview, biographical interview.

natural data Data that are recorded from real conversations that take place in everyday, authentic situations. *See also* contrived data.

naturalistic Adopting an ethnographic strategy in which the researcher researches the phenomenon within the context in which it occurs.

naturalistic observation Type of observation conducted in a 'real world' location where intention is to conduct observation without influencing the setting being observed. *See also* fieldwork.

negative cases Cases that do not support emergent explanations but that help the refining of these explanations and direct the selection of further cases to collect data.

negative correlation Relationship between two variables for which, as the values of one variable increase, the values of the other variable decrease. *See also* correlation coefficient.

negative skew Distribution of numerical data for a variable in which the majority of the data are found bunched to the right, with a long tail to the left.

netiquette General operating guidelines for using the Internet, including not sending junk emails.

netnography Ethnographic approach adapting traditional observation from oral/visual/near to textual/digital/virtual, allowing researchers purely to observe or participate with members of an online or virtual community to collect data.

new contacts People approached to become research informants, participants or respondents previously unknown to the researcher.

nominal data Data whose values cannot be measured numerically but can be distinguished by classifying into sets (categories).

nominalism Ontological position that asserts that the order and structures of social phenomena (and the phenomena themselves) are created by social actors through use of language, conceptual categories, perceptions and consequent actions.

non-binary pronoun Gender neutral pronoun used to refer to an individual or group of people.

non-directional hypothesis Tentative, usually testable, explanation of the association, difference or relationship between two or more variables. Also known as two-direction hypothesis. *See also* alternative hypothesis, hypothesis, null hypothesis.

non-maleficence Avoidance of harm.

non-numerical data All forms of data that are not numerical, for example text, voice and visual.

non-parametric statistic Statistic designed to be used with categorical data, that is when the data are dichotomous, nominal or ordinal.

non-participant observer Situation where researcher is detached from the event being observed and does not share any physical or virtual proximity to those being observed. *See also* collaborative observation, complete observer, complete participant, observer as participant, participant as observer.

non-probability sampling Selection of sampling techniques in which the chance or probability of each case being selected is not known.

non-random sampling *See* non-probability sampling.

non-response When the respondent refuses to take part in the research or answer a question.

non-response bias Bias in findings caused by respondent refusing to take part in the research or answer a question.

non-response error Situation where non-respondents in an intended sample differ in important ways from those who participate in the research. *See also* non-response, non-response bias.

non-standardised interview *See* semi-structured interview, unstructured interview.

normal distribution Special form of the symmetric distribution in which the numerical data for a variable can be plotted as a bell-shaped curve.

notebook of ideas Book or equivalent for noting down any interesting research ideas as you think of them.

null hypothesis Tentative, usually testable, statement stating that there is no association, difference or relationship between two or more variables. Often referred to as H_0 *See also* alternative hypothesis, directional null hypothesis, hypothesis.

numeric rating question Rating question that uses numbers as response options to identify and record the respondent's response. The end response options, and sometimes the middle, are labelled.

numerical data Data whose values can be measured numerically as quantities.

O

objective *See* research objective.

objectivism Ontological position that incorporates the assumptions of the natural sciences arguing that social reality is external to, and independent of, social actors concerned with their existence. *See also* ontology, subjectivism.

objectivity Avoidance of (conscious) bias and subjective selection during the conduct and reporting of research. In some research philosophies the researcher will consider that interpretation is likely to be related to a set of values and therefore will attempt to recognise and explore this.

observation Systematic observing, recording, description, analysis and interpretation of people's behaviour. *See also* participant observation, structured observation.

observation schedule Means to record predetermined and defined categories of behaviours, interactions or events in structured observation. *See also* structured observation.

observer as participant Observational role in which the researcher observes activities without taking part in those activities in the same way as the 'real' research subjects. The researcher's identity as a researcher and research purpose is clear to all concerned. *See also* participant as observer.

observer bias May occur when observers give inaccurate responses in order to distort the results of the research.

observer drift Occurs when the observer starts to redefine the way in which similar observations are interpreted leading to inconsistency.

observer effect Impact of being observed on how people act. *See also* habituation, reactivity.

observer error Systematic errors made by an observer, as a result of tiredness, for example.

one stage cluster sampling *See* cluster sampling.

one-way analysis of variance *See* analysis of variance.

online first Publication of forthcoming articles online, prior to them appearing in a journal.

online interview asynchronous or synchronous interview conducted through a chat room, Internet forum, video/web conferencing, email or text. *See also* email interview, chat room, Internet forum.

online questionnaire Data collection procedure in which the questionnaire is delivered online to each respondent. They then read and answer the same set of questions in a predetermined order without an interviewer being present before returning it electronically. *See also* Web questionnaire, mobile questionnaire.

ontology Branch of philosophy concerned with assumptions about the nature of reality or being. *See also* axiology, epistemology.

open access Distribution of research outputs available online, free of cost or other barriers.

open coding Process of disaggregating data into units in grounded theory.

open question Question allowing respondents to give answers in their own way.

operationalisation Translation of concepts into tangible indicators of their existence.

opinion variable Variable that records what respondents believe about something, what they think is true or false.

opportunistic sampling Non-probability purposive sampling procedure in which new potential cases which emerge unexpectedly are recognised as potential opportunities and assessed as to their utility. *See also* purposive sampling, non-probability sampling.

ordinal data Data whose values cannot be measured numerically but that can be placed in a definite order (rank).

orthodox case study Case study strategy that is rigorously defined and highly structured before the research commences, with the intention it will be operationalised in a linear manner. *See also* case study.

outlier Case or unit of analysis that has extreme values for a variable that may distort the interpretation of data or make a statistic misleading.

overarching research question Overview key question stating the issue or problem and what the research project seeks to find out, explain and answer. Usually referred to as the research question. *See also* research question.

overt observation Situation in which observation occurs openly following agreement by intended informants to a researcher's request. *See also* covert observation.

P

paired *t*-test Statistical test to determine the probability (likelihood) that the values of two (a pair of) numerical data variables collected for the same cases are different. The test assesses the likelihood of any difference between two variables (each half of the pair) occurring by chance alone.

paradigm Set of basic and taken-for-granted assumptions that underwrite the frame of reference, mode of theorising and ways of working in which a group operates.

paradigmatic analysis Approach used in the analysis of visual images that explores relations between signs by examining how the substitution of alternative signs for one sign will alter that sign's signified meaning in relation to other signs. *See also* semiotic analysis, sign, syntagmatic analysis.

parametric statistic Statistic designed to be used when data are normally distributed. Used with numerical data. *See also* numerical data.

partial response Level of response to questionnaires or structured interviews in which 50 per cent to 80 per cent of all questions are answered other than by a refusal or no answer.

partially integrated mixed methods research Use of both quantitative and qualitative methods at only one stage or at particular stages of the research. *See also* fully integrated mixed methods research.

participant Person who answers the questions, usually in an interview or group interview.

participant as observer Observational role in which the researcher takes part in and observes activities in the same way as the 'real' research subjects. The researcher's identity as a researcher and research purpose is clear to all concerned. *See also* observer as participant.

participant drawing Procedure used in a visual interview when a participant is asked to create a drawing to represent her or his feelings about an issue, or some aspect of his or her experience and to discuss this. *See also* visual interview.

participant information sheet Document providing information required by gatekeepers and intended participants in order for informed consent to be considered.

participant observation Observation in which the researcher attempts to participate fully in the lives and activities of the research subjects and thus becomes a member of the informants' group(s), organisation(s) or community. *See also* complete observer, complete participant, observer as participant, participant as observer.

participant photography Participatory data collection procedure in which informants are provided with digital cameras or use their smartphones as cameras to record their experiences or perspectives, including the freedom to choose the subject of each image they take. *See also* participatory video, participatory audio.

participant researcher *See* internal researcher.

participant validation see member validation.

participation bias Type of bias resulting from the nature of the individuals or organisational participants who agree to take part in a research study.

participation rate Proportion of respondents invited to take part in an online panel survey who provide a usable response.

participatory audio Participatory data collection procedure in which informants are provided with audio recorders or use their smartphones to record their experiences thoughts or feelings, including the freedom to choose what to record. *See also* participant photography, participatory video.

participatory video Participatory data collection procedure in which informants are provided with video cameras or use their smartphones to record their experiences thoughts or feelings, including the freedom to choose what to record. *See also* participant photography, participatory audio, video diarists, video diary.

passive voice Voice in which the subject of the sentence undergoes the action of the verb: for example, 'interviews were conducted'.

pattern matching Process for the analysis of qualitative data involving the prediction of a pattern of outcomes based on theoretical propositions to seek to explain a set of findings.

Pearson's product moment correlation coefficient Statistical test that assesses the strength of the relationship between two numerical data variables. For data collected from a sample there is also a need to calculate the probability of the correlation coefficient having occurred by chance alone.

percentage component bar graph/chart Diagram for comparing proportions for all types of data variables.

percentile One of 100 sections when data are ranked and divided into 100 groups of equal size.

peer review scrutinization and evaluation of work by others who are experts in the same field to establish whether it is worth of publication.

personal data Category of data, defined in law, relating to identified or identifiable persons. *See also* sensitive personal data.

personal entry Situation where the researcher needs to conduct research within an organisation, rather than rely on the use and completion of self-administered, postal

questionnaires or the use of publicly available secondary data. *See* access.

personal pronoun One of the pronouns used to refer to people: I, me, you, he, she, we, us, they, him, her, them.

phenomenological interview Interview focussing upon understanding the participant's lived experiences from their perspective by exploring the meanings and explanations they attribute to them.

phenomenology Strand of interpretivism that focuses on participants' lived experience, that is the participants' recollections and interpretations of those experiences, being particularly concerned with generating meanings and gaining insights into those phenomena. *See also* interpretivism.

phi Statistic to measure association between two variables using a scale between –1 (perfect negative association), through 0 (no association) to +1 (perfect association).

photo essay Research output that combines digital or photographic images and text to present thematic visual representations. *See also* photo novella.

photo novella Research output that combines digital or photographic images and text to present a narrative visual account. *See also* photo essay.

photoelicitation Procedure used in a visual interview where a participant is given one or more photographic or digital images to interpret. *See also* visual interview.

photovoice Procedure that involves informants using participant photography for research focusing on a social concern and meeting with other them in group discussions to present, discuss and analyse images which they have created. *See also* participant photography, reflexive photography, visual interview.

physical access Initial agreement of gaining access to an organisation to conduct research. *See also* cognitive access, continuing access, gatekeeper.

pictogram Diagram in which a picture or series of pictures are used to represent the data proportionally.

pie chart Diagram frequently used for showing proportions for a categorical data or a grouped continuous or discrete data variable.

pilot test Small-scale study to test data collection procedures to minimise the likelihood of problems in data collection and recording as well as allow some assessment of the validity and the reliability of the data that will be collected.

plagiarism Presenting work or ideas as if they are your own when in reality they are the work or ideas of someone else, and failing to acknowledge the original source.

pluralist (view of research) Belief that flexibility in the selection of both qualitative and qualitative methods is legitimate and researchers should be tolerant of others' preferred methods even when they differ from their own.

politically important sampling Non-probability purposive sampling procedure in which cases are selected or excluded on the basis of participants' connections with politically sensitive issues. *See also* purposive sampling, non-probability sampling.

polysemy Indicating multiple meanings. *See also* semiotic analysis.

population Complete set of cases or group members. *See also* target population.

positive correlation Relationship between two variables for which, as the value of one variable increases, the values of the other variable also increase. *See also* correlation coefficient.

positive skew Distribution of numerical data for a variable in which the majority of the data are found bunched to the left, with a long tail to the right.

positivism Philosophical stance of the natural scientist entailing working with an observable social reality to produce law-like generalisations. The emphasis is on highly structured methodology to facilitate replication.

post-test Outcome measurement for the dependent variable in an experiment. *See also* pre-test.

postal questionnaire Data collection procedure in which the questionnaire is delivered by post to each respondent. She or he then reads and answers the same set of questions in a predetermined order without an interviewer being present before returning it by post.

postmodernism Philosophical stance emphasising the role of language and power-relations that seeks to question accepted ways of thinking and give voice to alternative marginalised views.

PowerPoint™ Microsoft computer package that allows the presenter to design overhead slides using text, pictures, photographs, etc., which lend a professional appearance.

practitioner–researcher Role occupied by a researcher when they are conducting research in an organisation, often their own, while fulfilling their normal working role.

pragmatism Philosophical stance that argues that concepts are only relevant where they support action. It considers research starts with a problem and aims to contribute practical solutions that inform future practice. Pragmatists research may vary considerably in terms of how objectivist or subjectivist it is. *See also* objectivism, subjectivism.

pre-coding Process of incorporating coding schemes in questions prior to a questionnaire's administration.

pre-set codes Codes established prior to data collection and often included as part of the data collection form.

pre-survey contact Contact made with a respondent to advise them of a forthcoming survey in which they will be asked to take part.

pre-test Baseline measurement for the dependent variable in an experiment. *See also* post-test.

predictive validity *See* criterion-related validity.

predictor variable *See* independent variable.

preliminary inquiry Process by which a research idea is refined in order to turn it into a research project. This may be simply a review of the relevant literature.

preliminary search Way of searching the literature that may be helpful in generating research ideas. It may be based, for example, on lecture notes or course textbooks.

primary data New data collected specifically for the research project being undertaken.

primary observation Observation where the researcher notes what happened or what was said at the time. This is often done by keeping a research diary.

privacy Primary ethical concern relating to the rights of individuals not to participate in research and to their treatment where they agree to participate. *See also* research ethics, informed consent.

probability sampling Selection of sampling procedures in which the chance, or probability, of each case being selected from the population is known and is not zero.

probing questions Questions used to explore further responses that are of significance to the research topic.

professional journal Journal produced by a professional organisation for its members, often containing articles of a practical nature related to professional needs. Articles in professional journals are usually not refereed.

project report Term used in this book to refer generally to dissertations, theses and management reports. *See also* dissertation, management report, thesis.

pseudonymisation Process by which individuals are identified only by pseudonym such as a unique code or reference number.

pure research *See* basic research.

purposive sampling Non-probability sampling procedures in which the judgement of the researcher is used to select the cases that make up the sample. This can be done on the basis of criticality, extremes, heterogeneity (maximum variation), homogeneity (maximum similarity).

Q

qualitative data (1) Non-numerical data or data that have not been quantified. (2) Data derived from spoken, written, typed or printed words and still or moving visual images that have not been quantified. *See also* textual data, verbal data, visual data.

qualitative diary study Research project or part of a research project based on the use of qualitative research diaries. *See also* diary, diary study, quantitative diary study.

qualitative interview Collective term for semi-structured and unstructured interviews aimed at generating qualitative data.

qualitise Conversion of quantitative data into narrative that can be analysed qualitatively.

quantifiable data Non-numerical data that can be transformed into quantitative data.

quantitative data Data that can be recorded as numbers and analysed quantitatively.

quantitative diary study Research project or part of a research project based on the use of quantitative research diaries. *See also* diary, diary study, qualitative diary study.

quantitise Conversion of qualitative data into numerical codes that can be analysed statistically.

quantity question Closed question in which the respondent's answer is recorded as a number giving the amount.

quartile One of four sections when data are ranked and divided into four groups of equal size. *See also* lower quartile, upper quartile.

quasi-experiment Experimental design using an experimental group and a control group but where experimental participants cannot be assigned randomly to each group. *See also* matched pair analysis.

questionnaire General term including all data collection procedures in which each person is asked to respond to the same set of questions in a predetermined order. *See also* delivery and collection questionnaire, self-administered questionnaire, online questionnaire, postal questionnaire, self-completed questionnaire.

quota sampling Non-probability sampling procedure that ensures that the sample cases represent certain characteristics of the population chosen by the researcher.

R

r^2 value *See* coefficient of determination.

R^2value *See* coefficient of multiple determination.

radical change perspective Perspective that fundamentally questions the way things are done in organisations and, through research, offers insights that would help to change the organisational and social worlds.

radical humanist paradigm Paradigm concerned with changing the status quo, focusing on issues of power and politics, domination and oppression and emphasising the importance of social construction, language, processes, and instability of structures and meanings.

radical structuralist paradigm Paradigm concerned with achieving fundamental change based upon an analysis of phenomena such as structural power relationships and patterns of conflict.

random sampling *See* simple random sampling.

range Difference between the highest and the lowest values for a variable.

ranked data *See* ordinal data.

ranking question Closed question in which the respondent is offered a list of items and instructed to place them in rank order.

rating scale question Closed question in which a scaling device is used to record the respondent's response. *See also* Likert-style rating question, numeric rating question, semantic differential rating question.

ratio data Numerical data for which both the difference or 'interval' and relative difference between any two data values for a particular variable can be stated. *See also* numerical data.

rational thinking technique One of a number of techniques for generating and refining research ideas based on a systematic approach such as searching the literature or examining past projects.

raw data Data for which little, if any, data processing has taken place.

re-coding The process of grouping or combining a variable's codes to form a new variable, usually with less detailed categories.

reactivity Reaction by research participants to any research intervention that affects data reliability. *See also* habituation, observer effect.

realism Epistemological position that objects exist independently of our knowledge of their existence. *See also* critical realism, direct realism.

realist ethnography Ethnographic strategy stressing objectivity, factual reporting and identifying 'true' meanings. *See also* autoethnography, ethnography, critical ethnography, interpretive ethnography.

reductionism Idea that problems as a whole are better understood if they are reduced to the simplest possible elements.

refereed academic journal Journal in which the articles have been evaluated by academic peers prior to publication to assess their quality and suitability. Not all academic journals are refereed.

references, list of Bibliographic details of all items referred to directly in the text. The university will specify the format required.

reflection Process of observing your own research practice and examining the way you do things.

reflective diary Diary in which the researcher notes down what has happened and lessons learnt during the research process. *See also* research notebook.

reflexive photography Procedure where participants engage in participant photography and reflective interviews to explore their experiences. *See also* participant photography, photovoice, visual interview.

reflexivity Self-examination, evaluation and interpretation of your attitudes and beliefs, reactions to data and findings, and interactions with those who take part in the research and acknowledgement of the way these affect both the processes and outcomes of the research.

regression analysis The process of calculating a regression coefficient and regression equation using one independent variable and one dependent variable. For data collected from a sample, there is also a need to calculate the probability of the regression coefficient having occurred by chance alone. *See also* multiple regression analysis, coefficient of determination, r^2 value, regression equation.

regression equation Equation used to predict the values of a dependent variable given the values of one or more independent variables. The associated coefficient of determination provides an indication of how good a predictor the regression equation is likely to be. *See* coefficient of determination.

regulation perspective Perspective concerned primarily with the need for the regulation of societies and human behaviour. It seeks to explain the way in which organisational affairs are regulated and offer suggestions as to how they may be improved within the framework of the way things are done at present.

relevance tree Technique for generating research topics that starts with a broad concept from which further (usually more specific) topics are generated. Each of these topics forms a separate branch, from which further subbranches that are more detailed can be generated.

reliability Extent to which data collection procedure or procedures will yield consistent findings, similar observations would be made or conclusions reached by other researchers or there is transparency in how sense was made from the raw data.

repeated measures *See* within-subjects design.

representative sample Sample that represents exactly the population from which it is drawn.

representative sampling *See* probability sampling.

research aim Broad statement summarising the general intention or desired outcome of the research.

research approach General term for inductive, deductive or abductive research approach. *See also* abductive approach, deductive approach, inductive approach.

research design Framework for the collection and analysis of data to answer research questions and meet research objectives providing reasoned justification for choice of data sources, collection methods and analysis techniques.

research diary *See* diary.

research ethics Standards of the researcher's behaviour in relation to the rights of those who become the subject of a research project, or who are affected by it. *See also* code of ethics, privacy, research ethics committee.

research ethics committee Learned committee established to produce a code of research ethics, examine and approve or veto research proposals and advise in relation to the ethical dilemmas facing researchers during the conduct and reporting of research projects. *See also* code of ethics.

research idea Initial idea that may be worked up into a research project.

research interview Purposeful conversation between two or more people requiring the interviewer to establish rapport, to ask concise and unambiguous questions and to listen attentively.

research notebook Notebook in which the researcher records chronologically aspects of their research project such as useful articles they have read, notes of discussions with their project supervisor, etc. and their emergent thoughts about all aspects of their research. Can be used as an analytical aid. Can incorporate a reflective diary. *See also* reflective diary, self-memo.

research objective One of a number of clear, specific statements that identify what the researcher wishes to accomplish as a result of doing the research.

research philosophy Overarching term relating to a system of beliefs and assumptions about the development of knowledge and the nature of that knowledge in relation to research.

research proposal Structured plan of a research project, occasionally referred to as a protocol or outline.

research question The key question that the research process will answer, or one of the key questions that it will answer. The research question is generally the precursor of research objectives. *See also* overarching research question.

research strategy General plan of how the researcher will go about answering the research question(s).

research Systematic collection and interpretation of data with a clear purpose, to find things out. *See also* applied research, basic research.

researcher-completed questionnaire Data collection procedure in which a researcher or research assistant reads the same set of questions to the respondent in a predetermined order and records his or her responses. *See also* structured interview, telephone questionnaire.

residuals Errors (differences) between each predicted value for the dependent variable calculated using the regression equation and the associated observed value for the dependent variable. *See also* dependent variable, regression equation.

respondent driven sampling (RDS) Non-probability sampling procedure that is a development of snowball sampling compensating for the sample being collected in a non-random way and enabling unbiased estimates of the population to be made. *See also* snowball sampling, non-probability sampling.

respondent Person who answers the questions, usually on a questionnaire. *See also* participant.

response bias *See* interviewee bias.

response rate Total number of responses divided by the total number in the sample after ineligible respondents have been excluded. *See* ineligible respondent. *See also* active response rate, break off, complete refusal, complete response, partial response.

reverse coding Recoding the scores for negatively worded questionnaire items to ensure that high values indicates the same type of response on every item.

reverse scoring *See* reverse coding.

review article Article, normally published in a refereed academic journal, that contains both a considered review of the state of knowledge in a given topic area and pointers towards areas where further research needs to be undertaken. *See also* refereed academic journal.

review question Specific question you ask of the material you are reading, which is linked either directly or indirectly to your research question. *See also* research question.

S

sample Subgroup or part of a larger population.

sampling fraction Proportion of the total population selected for a probability sample.

sampling frame Complete list of all the cases in the population, from which a probability sample is drawn.

saturation *See* data saturation.

scale Measure of a concept, such as customer loyalty or organisational commitment, created by combining scores to a number of rating questions.

scale item Rating question used in combination with other rating questions to create a scale. *See* rating scale question, scale.

scale question *See* rating scale question.

scanning Going through the reference list of an already identified publication to identify references to additional potentially relevant publications.

scatter graph Diagram for showing the relationship between two numerical or ranked data variables.

scatter plot *See* scatter graph.

scientific research Research that involves the systematic observation of and experiment with phenomena.

scoping study Preliminary exploratory study undertaken as part of Systematic Review to establish whether Systematic Reviews have already been published and determine the focus of the literature search. *See also* Systematic Review.

scratch notes Initial recording of key points from a research session that serves as an immediate and condensed version of what has been observed, which later needs to be worked up into a fuller, expanded account.

search engine Automated software that searches an index of documents on the Internet using key words and Boolean logic.

search string Combination of key words or search terms used in searching online databases.

search term Basic terms that describes your research question(s) and objectives, and is used to search the tertiary literature.

secondary data Data that were originally collected for some other purpose. They can be analysed further to provide additional or different knowledge, interpretations or conclusions. *See also* document secondary data, multiple-source secondary data, survey-based secondary data.

secondary observation Statement made by an informant of what had happened or was said. By necessity this involves that informant's interpretations.

selective coding Process of integrating categories to produce theory in grounded theory.

selective observation Stage in participant observation where the observer develops a selective focus on which to concentrate future observation. *See also* descriptive observation, focused observation.

self-coded question Question each respondent codes her or himself as part of the process of recording their answer.

self-completed questionnaire Data collection procedure in which each respondent reads and answers the same set of questions in a predetermined order without an interviewer being present.

self-generated validity Extent to which attitudes and opinions are constructed through the research process thereby producing the thought processes predicted by theory and influencing behaviour.

self-memo Way of recording own ideas about research as they occur, which may then be used as an analytical aid. *See also* research notebook.

self-selection sampling Non-probability volunteer sampling procedure in which the case, usually an individual, is allowed to identify their desire to be part of the sample. *See also* non-probability sampling, volunteer sampling.

semantic differential rating question Rating question that allows the respondent to indicate his or her attitude to a concept defined by opposite adjectives or phrases.

semi-structured interview Non-standardised interview in which the interviewer draws on one or more interview themes, some having pre-set questions and others being more open, the interviewer being prepared to vary the order in which questions are asked and to ask new questions in the context of the research situation.

seminal Work that is pivotal, presenting an idea of great importance or influence. Seminal articles are likely to be referred to frequently.

semiotic analysis The analysis of signs and their meanings in relation to social worlds and social process. *See also* sign.

sensitive personal data Category of data, defined in law, that refers to certain specified characteristics or beliefs relating to identified or identifiable persons.

sensitivity Level of concern on the part of a potential host organisation, informant, participant or respondent about the nature of a research project and use of data that will affect willingness to cooperate.

sequential explanatory design Mixed methods research design where initial phase of quantitative data collection is followed by second phase of explanatory qualitative data collection. *See also* sequential mixed methods research.

sequential mixed methods research Research using both quantitative and qualitative methods that are conducted in more than one phase of data collection and analysis. *See also* double-phase research design, multi-phase research design, sequential explanatory design, sequential exploratory design.

sequential multi-phase design Mixed methods research design involving multiple phases of data collection and analysis.

serial correlation *See* autocorrelation.

shadowing Process that the researcher would follow in order to gain a better understanding of the research context. This might involve following and observing employees who are likely to be important in the research.

Shapiro–Wilk test Statistical test to determine the probability (likelihood) that an observed set of values for each category of a variable differs from a specified distribution.

sign Something that stands for (or represents) something other than itself, indicating that a sign consists of two parts: a signifier, which is the word, phrase or sound used, or image or artefact shown, and the signified, which is the concept or meaning suggested or implied in the sign. *See also* semiotic analysis.

significance testing Testing the probability of a pattern such as a relationship between two variables occurring by chance alone if the null hypothesis were true.

signifier *See* sign.

simple random sampling Probability sampling procedure that ensures each case in the population has an equal chance of being included in the sample.

single-organisation access The process of gaining entry into one organisation to conduct research.

single-phase research design Research involving one phase of data collection and analysis. *See also* concurrent mixed methods research.

SMS questionnaire Data collection procedure in which the questionnaire is delivered as a series of SMS (short message service) texts to each respondent. She or he then reads and answers each of the texts by replying without an interviewer being present.

snowball sampling Non-probability volunteer sampling procedure in which subsequent cases are obtained from information provided by initial cases. *See also* non-probability sampling, volunteer sampling.

snowballing *See* scanning.

social actors Individuals or groups who, through their actions, have the capacity to shape their world in a variety of ways by reflecting on their situation and the choices available.

social constructionism Ontological position that asserts that reality is constructed through social interaction in which social actors create partially shared meanings and realities, in other words it is socially constructed.

social exchange theory [in relation to research access] Where a potential participant evaluates the benefits versus the costs of agreeing to take part in research.

social norm Type of behaviour that a person ought to adopt in a particular situation.

socially desirable response Answer given by a respondent due to her or his desire, either conscious or unconscious, to gain prestige or appear in a different social role.

source questionnaire Questionnaire that is to be translated from another language when translating a questionnaire.

Spearman's rank correlation coefficient Statistical test that assesses the strength of the relationship between two ranked data variables. For data collected from a sample, there is also a need to calculate the probability of the correlation coefficient having occurred by chance alone.

split infinitive Phrase consisting of an infinitive with an adverb inserted between 'to' and the verb: for example, 'to readily agree'.

stacked bar graph/chart Diagram for comparing totals and subtotals for all types of data variable.

standard deviation Statistic that describes the extent of spread of data values around the mean for a variable containing numerical data.

statistical inference Process of coming to conclusions about the population on the basis of data describing a sample drawn from that population.

statistical significance Likelihood of the pattern that is observed (or one more extreme) occurring by chance alone, if there really was no difference in the population from that which the sample was drawn.

stemming Cutting off a word's ending, to reduce it to its stem.

storyline Way in which the reader is led through the research project to the main conclusion or the answer to the research question. The storyline is, in effect, a clear theme that runs through the whole of the project report to convey a coherent and consistent message.

stratified random sampling Probability sampling procedure in which the population is divided into two or more relevant strata and a random sample (systematic or simple) of cases is drawn from each of the strata.

structural narrative analysis Narrative analysis approach that focuses on the way a narrative is constructed. *See also* Narrative Analysis.

structured data Data that are organised into a form that is easy to process such as database or spreadsheet. *See also* unstructured data.

structured interview Standardised data collection procedure in which an interviewer asks the same set of questions in a predetermined order, and records his or her response to each.

structured methodology Data collection methods that are easily replicated (such as the use of an observation schedule or questionnaire) to ensure high reliability.

structured observation Observation method using a high level of predetermined structure and process, often used to quantify observed behaviours. *See also* participant observation.

subject directory Hierarchically organised index categorised into broad topics, which, as it has been compiled by people, is likely to have its content partly censored and evaluated.

subject or participant bias Bias that may occur when research subjects are giving inaccurate responses in order to distort the results of the research.

subjectivism Ontological position that incorporates assumptions of the Arts and Humanities and asserts that social reality is made from the perceptions and consequent actions of social actors (people). *See also* ontology, objectivism.

sufficiency [of access] Extent to which the access negotiate is enough to answer the research question and achieve the research objectives.

survey Research strategy that involves the structured collection of data from a sizeable population. Although the term 'survey' is often used to describe the collection of data using questionnaires, it includes other procedures such as structured observation and structured interviews.

survey-based secondary data Data collected by surveys, such as by questionnaire, which have already been analysed for their original purpose.

symbolic interactionism Strand of interpretivism derived from pragmatist thinking that sees meaning as something that emerges out of interactions between people. It focuses on the observation and analysis of social interaction such as conversations, meetings and teamwork. *See also* interpretivism, pragmatism.

symbolic sign Abstract sign that is capable of signifying meaning to those who see it through conventional understanding. *See also* iconic sign, indexical sign, semiotic analysis, sign.

symmetric distribution Description of the distribution of data for a variable in which the data are distributed equally either side of the highest frequency.

symmetry of potential outcomes Situation in which the results of the research will be of similar value whatever they are.

synchronous Undertaken in real time, occurring at the same time.

synchronous online interview Online interview conducted in real time using email, instant messaging or web/video conferencing. *See also* asynchronous online interview, online interview.

syntagmatic analysis Approach used in the analysis of visual images that explores relations between signs and the ways in which meanings are signified as different signs are combined into structures or sequences. *See also* paradigmatic analysis, semiotic analysis, sign.

synthesis Process of arranging and assembling various elements so as to make a new statement, or conclusion.

systematic random sampling Probability sampling procedure in which the initial sampling point is selected at random, and then the cases are selected at regular intervals.

Systematic Review Process for reviewing the literature using a comprehensive pre-planned strategy to locate existing literature, evaluate the contribution, analyse and synthesise the findings, and report the evidence to allow conclusions to be reached about what is known and, also, what is not known.

systematic sampling *See* systematic random sampling.

T

***t*-test** *See* independent groups *t*-test, paired *t*-test.

table Technique for summarising data from one or more variables so that specific values can be read. *See also* contingency table, frequency distribution.

tailored design method Approach to designing questionnaires specifying precisely how to construct and use them; previously referred to as the 'total design method'.

target population Complete set of cases or group members that is the actual focus of the research inquiry, and from which a sample may be drawn.

target questionnaire Translated questionnaire when translating from a source questionnaire.

teleological view View that the ends served by research justify the means. Consequently, the benefits of research findings are weighed against the costs of acting unethically.

telephone questionnaire Data collection procedure in which an interviewer contacts the respondent and administers the questionnaire using a telephone. The interviewer reads the same set of questions to the respondent in a predetermined order and records his or her responses.

Template Analysis Method for analysing qualitative data that involves creating and developing a hierarchical template of data codes or categories representing themes revealed in the data collected and the relationships between these.

tense Form taken by the verb to indicate the time of the action (i.e. past, present or future).

tertiary literature source Source designed to help locate primary and secondary literature, such as an index, abstract, encyclopaedia or bibliography.

text data Qualitative data derived from written, typed or printed words that are either collected as notes from interviews or observations, as written diaries and participant accounts or from documents. *See also* qualitative data.

Thematic Analysis Method used to analyse qualitative data that involves the search for themes, or patterns, occurring across a data set.

Thematic Analysis Grid (TAG) Grid for structuring your note-taking as a matrix with articles listed in rows (in date order) and each column representing a separate theme.

thematic format semi-structured interviews Interview using a list of thematic questions to guide the conduct of each interview.

thematic narrative analysis Narrative Analysis approach that focuses on the thematic content of a narrative, rather than on the way in which it is structured. *See also* Narrative Analysis.

theme Broad category incorporating several codes that appear to be related to one another and which indicates an idea that is important to your research question.

theoretical replication Realisation or replication of predicted theoretical outcomes in selected case studies in a case study strategy. *See also* case study, literal replication.

theoretical rigour Clarity and thoroughness with which the research as reported is grounded in existing explanations of how things work. *See also* methodological rigour, theory.

theoretical sampling Non-probability purposive sampling procedure particularly associated with Grounded Theory Method, which focuses on the needs of the emerging theory and the evolving story line, cases being chosen purposively to inform this. *See also* Grounded Theory Method, non-probability sampling, purposive sampling.

theoretical saturation Technique used in Grounded Theory Method and reached when data collection ceases to reveal new data that are relevant to a category, where categories have become well developed and understood and relationships between categories have been verified. *See also* Grounded Theory Method.

theoretical sensitivity Sensitivity to meanings in the data and using *in vivo* and researcher-generated codes to guide theorising activity, rather than being sensitised by concepts in existing theory.

theory Systematic body of knowledge grounded in empirical evidence used for explanatory or predictive purposes and may or may not have been tested.

thesis Usual name for research project reports undertaken for Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) degrees, written for an academic audience.

three-dimensional and lived media A form of visual document data that includes architecture and clothing. *See also* document secondary data.

time error Error, usually associated with structured observation, where the time at which the observation is being conducted provides data that are untypical of the time period in which the event(s) being studied would normally occur.

time series Set of numerical data values recorded for a single variable over time usually at regular intervals. *See also* moving average.

total response rate The total number of responses divided by the total number in the sample after ineligible respondents have been excluded. *See* ineligible respondent. *See also* active response rate, break off, complete response, complete refusal, partial response.

trade journal Journal produced by a trade organisation for its members, often containing articles of a practical nature related to the trade's needs. Articles in trade journals are usually not refereed.

traditional access Use of face-to-face interactions, correspondence for postal questionnaires, 'phone conversations or visits to data archives to conduct research.

transcript Written record of what a participant (or respondent) said in response to a question, or what participants (or respondents) said to one another in conversation, in their own words.

transcript summary Type of summary produced following the transcription of an interview or observation and used as an analytical aid. *See also* document summary, interim summary.

triangulation Use of two or more independent sources of data or data-collection methods within one study to help confirm the validity or credibility or authenticity of the research data, analysis and interpretation.

trimmed mean Mean calculated after extreme values (known as outliers) have been excluded.

two-dimensional moving media Form of moving document data that include films, videos, interactive web pages and other multi-media, often being combined with audio. *See also* document secondary data.

two-dimensional static media Static form of visual document data that include photographs, pictures, cartoons, maps, graphs, logos and diagrams. *See also* document secondary data.

Type I error Error made by wrongly coming to the decision that something is true when in reality it is not.

Type II error Error made by wrongly coming to the decision that something is not true when in reality it is.

type of access Way used to gaining access to conduct research. *See also* Internet-mediated access, intranet-mediated access, hybrid access, traditional access.

typical case sampling Non-probability purposive sampling procedure that focuses on selecting cases on the basis that they are typical or illustrative. *See also* purposive sampling, non-probability sampling.

U

uninformed response Tendency for a respondent to deliberately guess where they have sufficient knowledge or experience to answer a question.

unit of data A number of words, a line of a transcript, a sentence, a number of sentences, a complete paragraph, or some other single chunk of textual data or visual image that will be coded. See *also* code, coding.

unitarist (view of research) Belief that there is, or should be, one legitimate method (quantitative or qualitative) and intolerance of others' preferred methods if they differ from one's own.

unitising data Process of attaching relevant 'bits' or 'chunks' of your data to the appropriate category or categories that you have devised.

unreachable respondent Respondent selected for a sample who cannot be located or who cannot be contacted.

unstructured data Data that are not easy to search or process as, in their current form, they do not follow a predefined structure. *See also* structured data.

unstructured interview Loosely structured and informally conducted interview that may commence with one or more themes to explore with participants but without a predetermined list of questions to work through. *See also* informant interview.

upper quartile Value above which a quarter of the data values lie when the data values for a variable have been ranked.

URL Uniform resource locator specifying where a known resource can be found.

V

validity (1) Extent to which a data collection procedure or procedures accurately measure what they were intended to measure. (2) Extent to which research findings are really about what they profess to be about. *See also* construct validity, criterion-related validity, ecological validity, external validity, face validity, internal validity, measurement validity, predictive validity, self-generated validity.

variable Individual element or attribute upon which data have been collected.

variance Statistic that measures the spread of data values; a measure of dispersion. The smaller the variance, the closer individual data values are to the mean. The value of the variance is the square of the standard deviation. *See also* dispersion measures, standard deviation.

variance inflation factor (VIF) Statistic used to measure collinearity. *See* collinearity.

verbal data Qualitative data derived from spoken words that are collected in the form of extended speech. *See also* qualitative data.

video diarist Collaborative informant who produce a video diary during the use of participatory video. *See also* participatory video, video diary.

video diary Series of video recordings produced by informant over time during the use of the participatory video data collection procedure. *See also* participatory video, video diarist.

video essay Research output that uses video or film to analyse and interpret an experience, perspective or outcome.

videography (1) Process of recording moving images onto electronic media; (2) Ethnographic analysis of recorded video sequences.

VIF *See* variance inflation factor.

virtual access Initial level of gaining access to online communities to conduct research. *See also* cognitive access, continuing access, gatekeeper.

visual aid Item such as an overhead projector slide, whiteboard, video recording or handout that is designed to enhance professional presentation and the learning of the audience.

visual data Qualitative data derived from still or moving visual images that may be created or found in many forms including drawings, digital images and video. *See also* qualitative data.

visual interview Participant focused research interview in which visual images are used to elicit interviewee accounts and interpretations and stimulate dialogue. *See also* autodriving, participant drawing, photoelicitation.

volunteer sampling Non-probability sampling procedures in which cases are volunteered or self-select to be part of the research rather than being chosen. *See also* snowball sampling, self-selection sampling.

W

Web log *See* blog.

Web questionnaire Data collection procedure in which the questionnaire is delivered electronically to each respondent's email address. She or he then reads and answers the same set of questions in a predetermined order without an interviewer being present before returning it electronically. *See also* online questionnaire.

weighting Process by which data values are adjusted to reflect differences in the proportion of the population that each case represents.

white literature Formally published scholarly items, particularly journals, that have been peer reviewed. *See also* grey literature, peer review.

within-individual level analysis Analysis conducted at the level of an individual person's responses in a research study where data are repeatedly collected from each participant, such as in a quantitative diary study. *See also* between persons analysis, quantitative diary study.

within-subjects design Experimental design using only a single group where every participant is exposed to the planned intervention or series of interventions. *See also* experiment, between-subjects design.

word cloud Visual representation of the relative frequency of occurrence of words and/or phrases in text, in which the frequency is represented by the font size or, occasionally, the colour.



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