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Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Welcome to Research Methods and Field Study Experience (BMTP5022)



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BMTP5022 – Research Methods and Field Study Experience Week 5

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Aims For Today



- **Recap**
- **Theory: Data Analysis**
- **Writing up your Proposal: Structure, Format and other tips and tricks**
- **The Ethics/PG2 Form**



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Data Analysis

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Data Analysis

Data analysis in research means using methods to understand and summarise information. The goal is to find important insights and make conclusions that help answer research questions or test ideas.



Data Analysis (qualitative)

Qualitative data analysis involves interpreting non-numerical data, such as text or audio, to identify patterns, themes, and meanings.

Key Qualitative data analysis techniques include:

- 1. Thematic Analysis:** This is a method used to identify and analyse patterns or themes within qualitative data.
- ☐ **Pattern Identification:** It involves examining qualitative data (like interview transcripts) to find recurring topics or themes.
 - ☐ **Organising Data:** Helps in organising and making sense of large amounts of qualitative information.

Thematic Analysis: Example

Scenario: A researcher is studying the experiences of remote workers during the COVID-19 pandemic. They conduct 20 in-depth interviews asking about challenges, benefits, and coping strategies while working from home.

1. Thematic Analysis:

- The researcher reads all interview transcripts carefully and starts highlighting key ideas.
- They notice repeated ideas around “work-life balance”, “communication challenges” and “mental health struggles.”
- These recurring ideas become **themes**. For example:
 - Theme 1: Struggles to separate work and personal life
 - Theme 2: Difficulty collaborating remotely
 - Theme 3: Stress and anxiety related to isolation

Thematic Analysis: Example

2. Pattern Identification:

- Within each theme, the researcher looks for **patterns or recurring statements**.
 - For Theme 1, many participants mention “working late into the night” and “interruptions from family members.”
 - For Theme 2, multiple employees talk about “misunderstandings in emails” and “missing face-to-face meetings.”
- These patterns help the researcher understand common experiences among remote workers.

3. Organising Data:

- The researcher uses a spreadsheet or qualitative data analysis software (like NVivo) to **categorise quotes** under each theme and pattern.
- This organisation allows them to easily see how many participants mentioned a particular issue, compare experiences, and draw meaningful conclusions.

Thematic Analysis: Example

Outcome:

The researcher concludes that while remote work offers flexibility, many employees struggle with work-life boundaries and isolation. They can now provide evidence-based recommendations, such as introducing virtual social hours or clear work-hour policies.

Data Analysis (qualitative)

2. Content Analysis:

This research method looks at and interprets different types of communication, like texts or media, in a careful and organised way.

❑ **Systematic Examination:** It involves reviewing and categorising content to identify patterns, themes, or trends (e.g. interview)

Content Analysis: Example

Scenario: A researcher studies how news websites talk about climate change.

1. Content Analysis:

- They collect 200 news articles.
- They read each article carefully to see **what it talks about**: science, politics, money, or people's stories.

Content Analysis: Example

2. Systematic Examination:

- They make categories:
 - Science (studies, data)
 - Politics (government actions, debates)
 - Economy (costs, jobs)
 - Human stories (personal experiences)
- They sort each article into these categories and count patterns:
 - Example: Most articles (60%) focus on politics, fewer on science (25%), economy (10%), and human stories (5%).

Result:

- The study shows that news mostly talks about politics, not people's experiences or scientific fact.

Data Analysis (qualitative)

3. Narrative Analysis:

This is a method used to study and interpret the stories people tell and the way they structure their experiences.

- ☐ **Story Examination:** It focuses on understanding and interpreting the stories or narratives people share.
- ☐ **Meaning and Structure:** Looks at how these stories are constructed and what they reveal about the narrator's experiences or perspectives.

Narrative Analysis: Example

Scenario: A researcher interviews cancer survivors about their experiences during treatment.

1. Story Examination:

- The researcher listens to each person's story carefully, paying attention to **how they describe their journey**.

2. Meaning and Structure:

- They look at how the stories are told:
 - Beginning: diagnosis
 - Middle: treatment challenges
 - End: coping and recovery
- They also notice **themes and feelings**, like fear, hope, or resilience.

Narrative Analysis: Example

Result:

- By studying these stories, the researcher understands not just what happened, but **how survivors make sense of their experiences** and what matters most to them.

Data Analysis (quantitative)

Quantitative data analysis is about looking at numbers to find patterns and trends (e.g. surveys).

Key Quantitative data analysis techniques include:

1. Descriptive Statistics:

- This method is used to summarise and describe the main features of a dataset (e.g. what is the most common value).
- ❑ **Summary of Data:** Provides a way to organise and summarise large amounts of data into meaningful information.

Descriptive Analysis: Example

Scenario: A researcher surveys 200 shoppers to find out how much money they spend on groceries each week.

1. Descriptive Statistics:

- They calculate the **average spending, the most common amount , and the spending range.**
- Example: Average spending = £75 per week; most common amount = £60; range = £20-£200.

2. Summary of Data:

- They create a **table or graph** showing spending patterns across different age groups or locations.

Result:

- The researcher can see patterns, like younger shoppers spending less and older shoppers spending more, and use this to understand consumer behaviour.

Data Analysis (quantitative)

2. Inferential Statistics:

- This method is used to make predictions or inferences about a larger population based on a sample of data.

☐ **Making Predictions:** Helps you draw conclusions about a whole population from a smaller sample.

Inferential Analysis: Example

Scenario: A researcher wants to know the average number of hours high school students in a city spend on homework each week.

1. Sample Data:

- They survey **100 students** from 5 different schools (a small sample of the whole city).
- The sample shows an **average of 8 hours per week**.

2. Making Predictions:

- Using **inferential statistics**, the researcher estimates that **all high school students in the city likely spend around 8 hours per week on homework**, with a small margin of error.
- They can also test if homework hours differ by gender or grade level.

Result:

- Even though they only surveyed 100 students, the researcher can **draw conclusions about the larger population** of thousands of students.

Data Analysis (quantitative)

3. Correlation Analysis

- This method is used to measure the strength and direction of the relationship between two variables (e.g. number of hours you study and your test scores).
- ☐ **Relationship Measurement:** Examines how changes in one variable are related to changes in another variable.
- ☐ **Direction and Strength:** Determines whether the variables move together and how strong that relationship is.

Correlation Analysis: Example

Scenario: A coffee shop owner wants to see if there is a relationship between **daily temperature** and **ice cream sales**.

1. Relationship Measurement:

- They record the temperature and the number of ice creams sold each day for a month.
- They check whether warmer days lead to more ice cream sales.

2. Direction and Strength:

- They calculate the correlation coefficient:
 - A positive correlation (e.g. 0.8) means **as temperature rises, ice cream sales also increase**.
 - The closer the value is to 1, the stronger the relationship.

Result:

- The owner concludes there is a strong positive relationship, showing that higher temperatures are linked to higher ice cream sales.

Data Analysis (quantitative)

4. Regression Analysis:

- This is a statistical method used to understand the relationship between one dependent variable and one or more independent variables.
- ☐ **Predictive Modelling:** Helps predict the value of a dependent variable based on the values of one or more independent variables.
- ☐ **Relationship Exploration:** Shows how changes in independent variables affect the dependent variable.

Regression Analysis: Example

Scenario: A small business owner wants to predict **monthly sales** based on **advertising spend** and **number of social media posts**.

1. Predictive Modelling:

- They collect data from the past 12 months, recording sales, advertising costs, and social media activity.
- Using regression analysis, they create a model to **predict sales** based on these two factors.

2. Relationship Exploration:

- The analysis shows:
 - Every £100 spent on advertising increases sales by £500 on average.
 - Each additional social media post per week increases sales by £200.
- This shows **how changes in advertising and posting affect sales**.

Result:

- The business owner can **plan marketing strategies** to maximise sales by adjusting advertising budgets and posting frequency.

Data Analysis (quantitative)

5. Factor Analysis:

- This is a statistical method used to simplify and understand complex data by identifying underlying factors or patterns.

☐ **Data Simplification:** Helps reduce the number of variables by grouping them into fewer, more manageable factors.

☐ **Pattern Identification:** Reveals hidden relationships among variables.

Factor Analysis: Example

Scenario: A company wants to understand what drives **customer satisfaction** for their mobile app. They survey 500 users with 25 questions about features, ease of use, design, customer support, and pricing.

1. Data Simplification:

- Factor analysis reduces the 25 questions into **fewer main factors**, such as:
 - Factor 1: App usability (ease of use, navigation, design)
 - Factor 2: Service quality (customer support, response time)
 - Factor 3: Value (pricing, features offered)

2. Pattern Identification:

- The analysis reveals that questions about responsiveness and support load onto the same factor, showing these aspects are closely related in affecting satisfaction.

Result:

- The company can focus on improving **three main areas** instead of trying to address 25 separate survey items, making decisions more manageable and targeted.

Data Analysis (mixed-methods)

Mixed methods data analysis uses both numbers and descriptive information to better understand research questions. This approach combines the best parts of both types of data to get deeper insights.

Data Analysis (mixed-methods)

Key Mixed Methods data analysis techniques include:

1. Convergent Parallel Design:

- This is a mixed methods research approach where both qualitative and quantitative data are collected and analysed separately but are then compared to see if the results align.
- ❑ **Mixed Methods Approach:** Combines both qualitative (e.g. interviews) and quantitative (e.g. surveys) research methods.
- ❑ **Parallel Collection:** Data is collected for both methods simultaneously but analysed independently.
- ❑ **Convergence:** After analysing each type of data, you compare and see if they lead to similar conclusions.

Convergent Parallel Design: Example

Scenario: A school wants to understand **student satisfaction with online learning**.

1. Mixed Methods Approach & Parallel Collection:

- **Quantitative:** They survey 200 students with questions on satisfaction, ease of learning, and engagement.
- **Qualitative:** They interview 20 students in depth about their online learning experiences.
- Both types of data are collected **at the same time**, but analysed **separately**.

2. Convergence:

- **Quantitative results:** 70% of students report being satisfied, but 30% find it hard to stay focused.
- **Qualitative results:** Interviews reveal students enjoy flexibility but struggle with distractions and lack of interaction.
- When comparing the two analyses, both data types **agree that flexibility is appreciated but focus is a challenge**.

Convergent Parallel Design: Example

Result:

- The school gets a **more complete understanding**: surveys show the general trends, and interviews explain why students feel that way.
- This helps the school make targeted improvements, like adding virtual study groups.

Data Analysis (mixed-methods)

2. Explanatory Sequential Design:

- This research approach involves two main phases: first collecting and analysing quantitative data, followed by collecting and analysing qualitative data to explain or interpret the initial quantitative findings.
-
- ❑ **Two-Phase Approach:** Starts with quantitative research and follows up with qualitative research.
 - ❑ **Explanation:** Uses qualitative data to further explain or interpret the results obtained from the quantitative data.

Explanatory Sequential Design: Example

Scenario: A company wants to understand **why employee productivity varies across departments**.

1. Phase 1 – Quantitative:

- They collect data on **hours worked, tasks completed, and performance ratings** from 100 employees.
- Analysis shows that the **marketing department has lower productivity** than other departments.

2. Phase 2 – Qualitative:

- The company interviews 10 marketing employees to **explore reasons behind lower productivity**.
- Interviews reveal issues like unclear instructions, lack of training, and frequent interruptions.

Result:

- Quantitative data identified **where the problem is**, and qualitative data explains **why it is happening**, helping management plan effective solutions.

Data Analysis (mixed-methods)

3. Embedded Design:

- This research approach is where one type of data (qualitative or quantitative) is collected within a primarily dominant method (either qualitative or quantitative) to provide additional insights or context.
- ☐ **Mixed Methods Approach:** Combines both qualitative and quantitative data but with one method being the primary focus.

Embedded Design: Example

Scenario: A school wants to **measure student engagement** in online classes.

1. Primary Method – Quantitative:

- They survey 200 students with a questionnaire to **measure engagement scores**.

2. Embedded Method – Qualitative:

- A few open-ended questions are included in the survey, asking students to **explain why they feel engaged or disengaged**.

Result:

- The **quantitative data** shows overall engagement levels, while the **qualitative responses** provide context and reasons behind the scores.
- This helps the school understand not just how engaged students are, but **why**, so they can improve online classes effectively.

Writing up the Proposal

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Structure

Title Page

AI Acknowledgement Statement

Content Table (*optional*)

1.Introduction

2. Research Methodology

3. Significance of the Study

4. Timeline and Budget

5. Conclusions and Limitations

Reference List

Language & Style

- **Formal and Academic** – Avoid slang, contractions (e.g. use *do not*, instead of *don't*), or overly casual phrasing.
- **Clear and Concise** – Use precise words and short sentences; avoid vague expressions.
- **Objective Tone** – Focus on facts and evidence, not personal opinions (“This study will explore...” not “I think...”).
- **Consistent Tense Use:**
 - Use **present tense** for general facts and existing literature (“Researchers argue...”).
 - Use **future tense** for your proposed actions (“This study will examine...”).
 - **Third Person:** “The researcher will” instead of “I will,”.

Formatting & Presentation

- Use clear **headings and subheadings**
- **Use the correct font and font size** (Times New Roman or Arial font 11 or 12pt should be used)
- **Apply 1.5 line spacing**
- **Justify your text**
- Include **page numbers**
- **Proofread** carefully for grammar, spelling, and citation accuracy.

Professional Impression

- Show **enthusiasm** for your topic, but stay **analytical and realistic and maintain a neutral, academic tone**.
- Be **specific** – vague objectives or methods weaken credibility.
- Demonstrate that your project is **feasible** (in time, scope, and resources).

Referencing

- Focus on literature directly related to your research question/topic.
- Avoid including unrelated studies just to “fill space”.
- Prioritise **recent research** (last 5 years, unless citing classic foundational studies).
- Show awareness of the **current trends, debates, and gaps** in the field.
- Use **credible and peer-reviewed sources**: academic journals, books, and reputable reports.
- Avoid non-scholarly sources like Wikipedia, random blogs, personal websites, dodgy online articles or tabloids.

Good Example

Title:

Exploring the Relationship Between Social Media Use and Academic Performance Among University Students.

Introduction (Example):

In recent years, social media has become an integral part of university students' daily lives (Rodriguez, 2023). While it offers opportunities for communication and collaboration, excessive use may negatively affect students' academic performance. Previous studies have shown mixed results, with some highlighting the benefits of educational engagement (Jones, 2024) and others reporting negative impacts on concentration and study habits (Benson & Wang, 2024; Mohammed, 2025). This study aims to examine how patterns of social media use influence academic outcomes among undergraduate students, focusing on both positive and negative effects.

Bad Example

Title:

Social Media and Grades

Introduction (Bad Example):

Nowadays, everyone uses social media all the time. I think it really messes up students' studies because they're always on their phones instead of paying attention. I found some initial research on this (Jones, 2013). I want to do a study to see if people who use social media a lot get bad grades. It's probably true because I see it happening all the time with my friends.

Task: Using the text provided below,

1. Prepare a **quote**.
2. **Paraphrase**.

Many students worry that they are not intelligent enough to do well, especially at times when the course seems tough. If they didn't do well at school, they can doubt whether academic ability is 'in their genes'. If they excelled at school, they can worry they have 'lost it'. Worry and stress make it harder to learn.

Cottrell, S. (2024) *The study skills handbook*. 6th edn. Bloomsbury Publishing Plc.

(Page 22)

1. Quotes (examples):

- ✓ According to Cottrell (2024, p.22), “worry and stress make it harder to learn”.
- ✓ “Worry and stress make it harder to learn”, finds Cottrell (2024, p.22).
- ✓ Cottrell (2024, p.22) notes that “many students worry that they are not intelligent enough to do well”.

2. Paraphrasing (examples):

- ✓ Students often doubt their academic ability, either thinking it is innate if they struggled at school, or fearing they have lost it if they previously excelled. These worries can increase stress and make learning more difficult (Cottrell, 2024, p.22).
- ✓ Cottrell (2024, p.22) finds that students may feel they lack the intelligence to succeed, particularly when faced with challenging coursework. Past academic performance can influence these doubts, and the resulting stress can interfere with their ability to learn effectively.

Week 1 Vevox Responses

- **40%** Not confident with Harvard Referencing - I could use a refresher
- **25%** I do not understand the difference between paraphrasing and quoting a source.
- **19%** I do not use the Library's Primo Research Assistant to support my research for assignments; **19%** What is Primo?
- **33%** I do not feel confident in preparing an AI Acknowledgement Statement; **20%** What is an AI Acknowledgement Statement?

The AI Acknowledgement Statement

- It is **mandatory** for all UWTSD students to submit an **AI Acknowledgement Statement** with every assignment, even if no AI tools have been used.

The AI Acknowledgement Statement

I acknowledge the use of [AI Tool] [(AI Tool url)] on [Date] to [Purpose my work]. I used the prompt(s):

1. [Prompt]
2. [Prompt]
3. [Prompt]

I confirm that I have not presented any AI generated text as my own work. I confirm I have copies of my drafts, notes, and other resources I used before, and after the use of AI tools which I may be asked to provide in evidence.

I confirm that I have not used any AI tools in the research and creation of this assignment. I confirm that I have not presented any AI generated materials as my own work. I confirm I have copies of my drafts, notes, and other resources I used, which I may be asked to provide in evidence.

Ethics/PG2 Form

-let's discuss!

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Any Questions?

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I look forward to seeing you next week.

If you have any questions, please do not hesitate to contact me via email.

(l.bassler@uwtsd.ac.uk)

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