



ECDE7002

Session 9

07/12/23

Sampling and the Ethics Form

The background is a dark, abstract composition. It features several blurred, curved lines of light in shades of blue, purple, and yellow, suggesting motion or light trails. A sharp, diagonal line of light, possibly a laser or a thin rod, cuts across the frame from the bottom left towards the top right. The overall effect is one of depth and dynamic energy.

SAMPLING

What is a sample?

Why use a sample?





What is a sample?

When you conduct research about a group of people, it is rarely possible to collect data from every person in that group.

Instead, you select a **sample**.

The sample is the group of individuals who will actually participate in the research.

Why Sampling Matters in Educational Research

Limited Resources: It is often impractical to study an entire population due to time, budget and logistical constraints.

Generalisability: The goal (sometimes!) is to draw valid conclusions about the entire population based on the data collected from a sample.

Reducing Bias: A carefully chosen sample can help minimize bias and ensure that research findings are more representative of the population.

Population versus sample – what is the difference?

The **population** is the entire group that you want to draw conclusions about.

The **sample** is the specific group of individuals that you will collect data from.

The population can be defined in terms of geographical location, age, income or other characteristics.





Can the sample always be representative?

Should the sample always be representative?





Research Question:

Do university students think that they are cleverer than their peers?
(i.e. others of the same age who could be, or might not be, university students)

The target population is the 10,000 undergraduate students at my university.

I recruit 200 participants.

They are studying in the Faculty of Science and Engineering.

Most of them are British, male, 18–20 years old and from a high socio-economic background.

I give them a maths test.

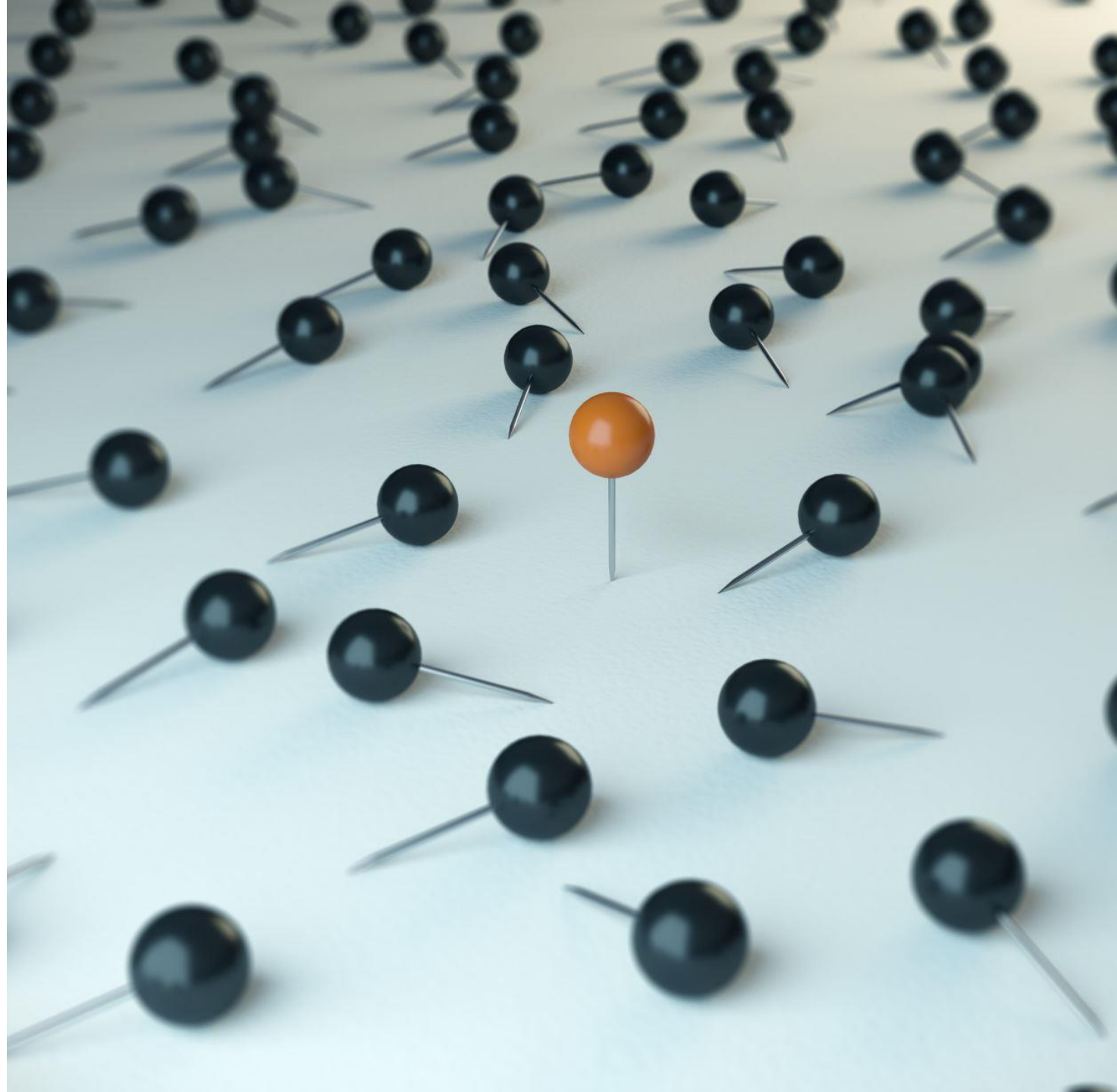
I then ask them to rate how well they think performed compared to everyone else.

The findings show that the average participant believes that they are cleverer than 66% of the population.

Can I conclude that most people believe themselves to be cleverer than their peers?

Probability and non-probability sampling techniques

Flick, U. (2014) An Introduction to Qualitative Research. 5th Edition, London: Sage Publications.



$$F = G \frac{m_1 m_2}{d^2}$$

Probability sampling methods

$$F - E + V = 2$$

$$i\hbar \frac{\partial}{\partial t} \psi = \hat{H} \psi$$

$$\phi(x) = \frac{1}{\sqrt{2\pi\sigma}} e^{-\frac{x^2}{2\sigma^2}}$$

$$E = mc^2$$

$$ds \geq 0$$

$$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$$

$$\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h}$$

Probability sampling methods

Probability sampling means that every member of the population has a chance of being selected.

It is often used in quantitative research.

If you want to produce results that are representative of the whole population, probability sampling techniques are the most valid choice.

Probability sampling methods

Individuals are selected based on **random criteria**.

Strengths

- Equal chance for each member of population to get selected;
- Simplicity;
- Lack of bias.

Limitations

- Greater expertise and knowledge of the subject matter is needed to determine what type of sampling approach is most appropriate;
- Finding correct audience is difficult;
- Access - difficulty gaining access to a larger population;
- Time & cost.

Probability sampling is best used when the goal of the research is to study a particular subgroup within a greater population. It ensures that the sample is representative of the population, allows researchers to estimate the level of uncertainty in the results, and makes it possible to generalise the findings to the population.

Probability sampling methods

simple random sampling

systematic sampling

stratified sampling

cluster sampling

Simple random sample



Systematic sample

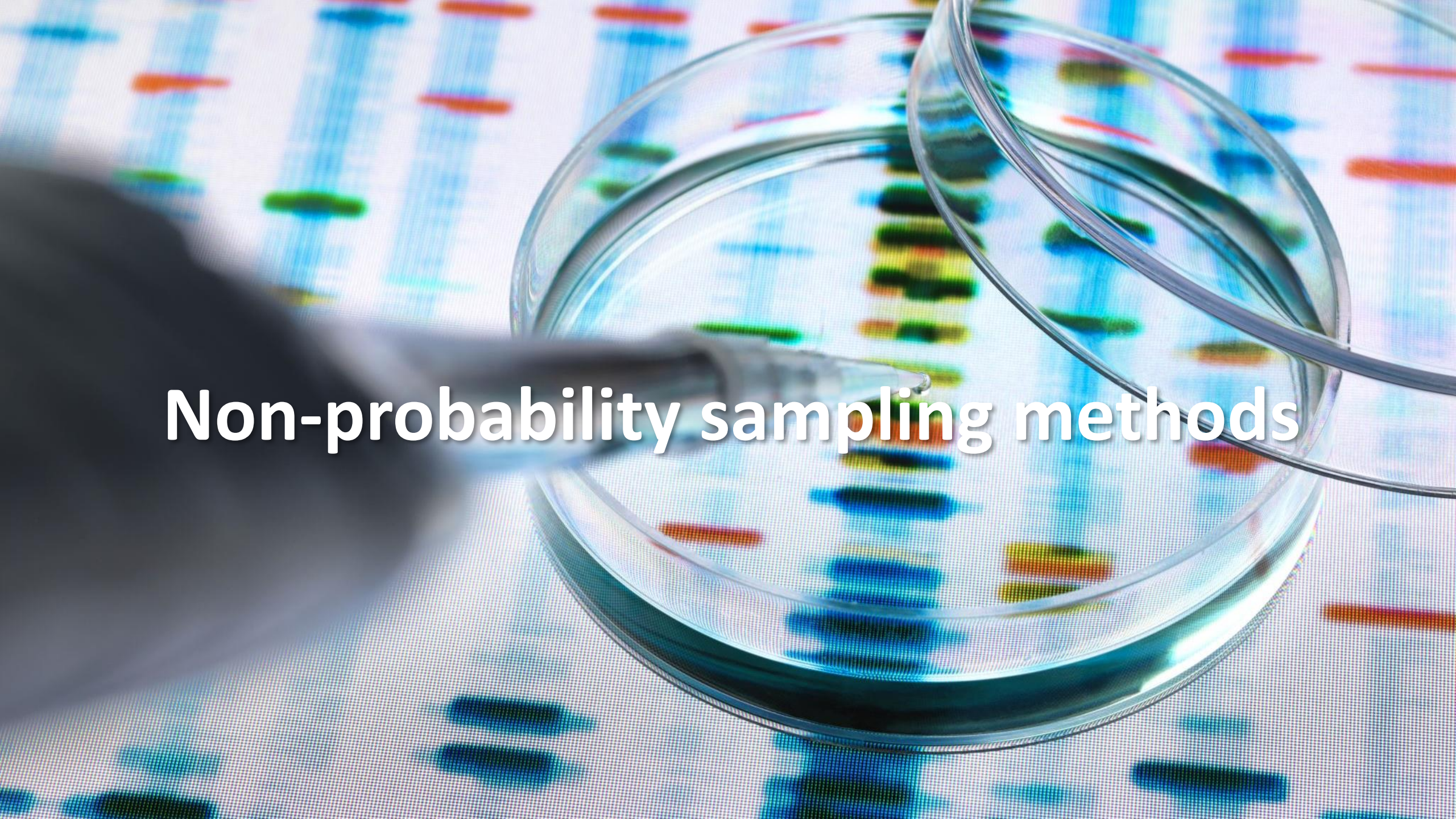


Stratified sample



Cluster sample



A magnifying glass is held over a DNA gel electrophoresis image. The gel shows multiple lanes with horizontal bands of various colors (blue, green, yellow, orange, red) representing different DNA fragments. The magnifying glass is positioned over one of the lanes, and its handle is visible on the left side of the frame. The text "Non-probability sampling methods" is overlaid in white, bold font across the center of the image.

Non-probability sampling methods

Non-probability sampling methods

Non-probability sampling uses non-random ways to select a group of people to participate in research

It is often used in qualitative research.

It doesn't focus on accurately representing all members of a large population within a smaller sample group of participants - not all members of the population have an equal chance of participating in the study.

Non-probability sampling methods

Individuals are selected based on **non-random criteria**.

Strengths

- *Easy - convenient
- *Accessible - useful when the population of interest is difficult to access or to define
- *Cost effective

Limitations

- *High risk of **sampling bias** = the inferences you can make about the population are weaker than with probability samples and your conclusions may be limited.
- *Lack of generalisability

Non-probability sampling techniques are often used in **exploratory** and **qualitative research**, where the aim is to develop an initial understanding of a small or under-researched population.

Non-probability sampling methods

Convenience sampling

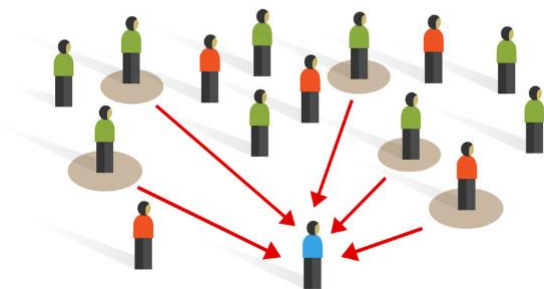
Voluntary response sampling

Purposive sampling

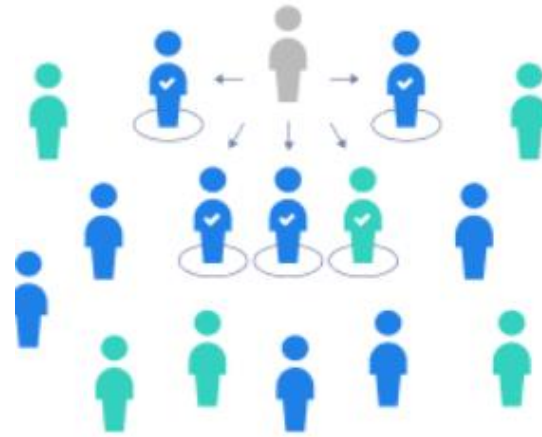
Snowball sampling

Quota sampling

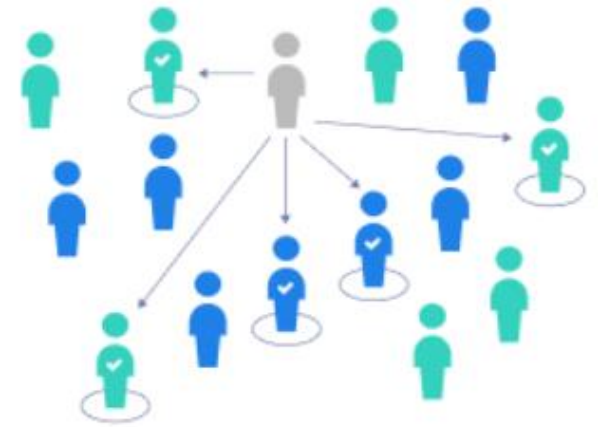
Voluntary response sampling



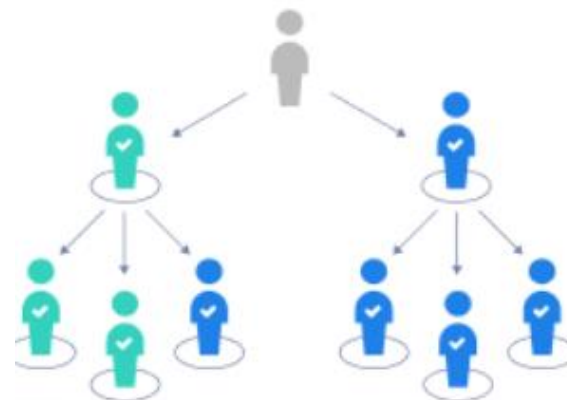
Convenience sample



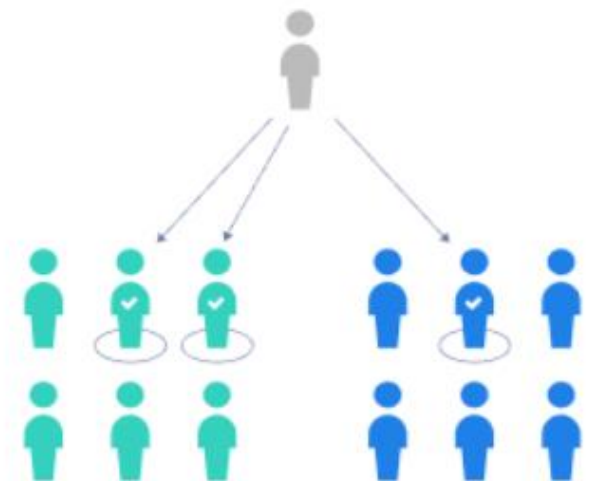
Purposive sample



Snowball sample



Quota sample



Assessment Component 2: 3500 words

Outline your preferred approach (qualitative/quantitative/mixed methods) to this enquiry by focusing on ONE of your research questions. Plan an appropriate data collection process and associated analysis of the data, reflecting on its strengths and limitations. Critically reflect upon the ethical issues surrounding the research process.

Section	Suggested content	Allocated word count
Introduction	Briefly introduce your topic and have chosen to focus on in the study. What is the aim of your study?	
Chosen method	What is/are your chosen method(s)? Quantitative Qualitative ~~Mixed methods approach~~	
Sampling	What is/are your sampling method(s)?	500
Ethics	What are the ethical considerations that relate to your study?	700
Research tool(s)	What is/are the research tool(s) that you have selected?	1000
Data analysis method(s)	Which method(s) of data analysis have you chosen?	400
Conclusion	<u>Summarise</u> your intentions.	100

Once you have chosen your sampling method, you should read some literature about it so that you can refer to the work of authors to support your decision.



Completing the Ethics Form

APPLICATION FOR ETHICAL APPROVAL

RESEARCH STUDENTS

This form is to be completed by the student within **SIX** months for full-time students and **TWELVE** months for part time students, after the commencement of the research degree or following progression to Part Two of your course.

Once complete, submit this form via the [MyTSD Doctoral College Portal](https://mytsd.uwtsd.ac.uk) at (<https://mytsd.uwtsd.ac.uk>).

This document is also available in Welsh.

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:				
2	Tick all boxes that apply:		Member of staff:	☐	Honorary research fellow:
	Undergraduate Student	☐	Taught Postgraduate Student	☐	Postgraduate Research Student
3	Institute/Academic Discipline/Centre:				
4	Campus:				
5	E-mail address:				
6	Contact Telephone Number:				
For students:					

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.	
If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.	
1	Full risk assessment completed and appended?
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information Risk to participants: (this box should expand as you type) How you will mitigate:
3	If research activity may involve drug use or other potentially harmful substances, explain how you will ensure the safety of participants:

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when? (this box should expand as you type)
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case. (this box should expand as you type)

SECTION J: Data Protection and Storage

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	
1	"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, by reference to information which is held by the University.
	YES



Section H: Anticipated Risks

2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information
	Risk to participants: <i>How you will mitigate the risk to participants:</i>

Psychological harm: Sensitive questions or tasks may trigger negative emotions such as shame or anxiety.

Social harm: Participation can involve social risks, public embarrassment or stigma.

Physical harm: Pain or injury can result from the study procedures.

2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information
	Risk to participants: How you will mitigate the risk to participants:

Put risks here.
Number each one..

Number each response.

Begin with 'I will...'

2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information
	Risk to participants: <i>How you will mitigate the risk to participants:</i>

*Physical or psychological **harm**

*Emotional **distress**

*Potential for **discomfort and disagreement amongst participants** during the group discussion may be considered harmful to the professional and reputational of individuals in the research.

*Disturbance to **relationships**

*Risk that participants may feel **coerced** into giving positive or biased responses to questions due to relationships and position in the organisation as an employee

4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest
	Risk to the investigator: <i>How you will mitigate the risk to the investigator:</i>

Social harm: Participation can involve social risks, public embarrassment, or stigma.

Physical harm: Pain or injury can result from the study procedures.

Legal harm: Reporting sensitive data could lead to legal risks or a breach of privacy.

4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest
	Risk to the investigator: How you will mitigate the risk to the investigator:

Allegations while conducting interviews (linked to safeguarding)

Accusations of fabrication or falsification of data

Concerns of **coercion**

Participants may wish to **withdraw**

A possible **conflict of interest** between the researcher and participants

A **confidentiality breach** due to data being released accidentally

Risks relating to the possibility of **unexpected negative emotions** of the interviewees e.g.:

- an uncomfortable interview place
- anxiety for unintentional disclosure in reference to the participants
- unintentional inappropriateness of conduct

	(this box should expand as you type)	(this box should expand as you type)
5	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to the University:	How you will mitigate the risk to the University:

	(this box should expand as you type)	(this box should expand as you type)
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Reputational damage

i.e. a potential complaint against the researcher for causing emotional distress or embarrassment that could cause reputational damage to the university

e.g.

- * loss of data
- * non-compliance with relevant legislation
- * discrimination
- * workplace health and safety
- * inappropriate use of social media

		(this box should expand as you type)
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment N/A	How you will mitigate the risk to environment:

- The release of chemicals or organisms into the environment.
- The removal or damage of resources from the environment, especially where these resources are unique or form an important element of the environmental system.
- The permanent leaving of detrimental or uncommon materials in an environment.
- Actions that impact on the workings of ecosystems.
- Actions that impact on the wellbeing or livelihoods of people, including the potential bringing of uncommon diseases with researchers into protected communities.
- Aesthetic damage, including visual, noise, and odour pollution.
- Actions that enhance indirect risks by others, for example the disclosure of the location of rare resources, nesting sites, or growing locations.
- Actions that impact on future environmental research, including oversampling, permanently changing an environmental system, and causing a deterioration in relationships with organisations or communities.
- Actions that have the potential to raise public concerns, even when those concerns are unjustified, for example, the obvious carrying of chemicals through public spaces.

		(this box should expand as you type)
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment N/A	How you will mitigate the risk to environment:

- Use of paper
- Travel to meetings -carbon footprint



Section I: Feedback,
Consent and Confidentiality

De-briefing and Feedback

Debriefing refers to the process of sharing information about the research with participants after the data has been collected.

In experimental research designs, debriefing refers to providing participants with information that was either withheld (such as the nature of experimental conditions) or misinformation that was provided (i.e. deception) as part of the experimental procedure. In such cases, debriefing aims to undo any harm that may have been caused by the deception/withholding of information.

For example, following an experiment in which negative mood was induced, it would be ethical to induce a happy mood state before the participant leaves the experimental setting.

BPS:

<https://explore.bps.org.uk/content/report-guideline/bpsrep.2021.inf180/chapter/bpsrep.2021.inf180.10>

Trinity Saint David

SECTION I: Feedback, Consent and Confidentiality

Feedback

What de-briefing and feedback will be provided to participants, how will this be done and when?

(this box should expand as you type)

Informed consent

Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.

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Confidentiality / Anonymity

Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.

(this box should expand as you type)

De-briefing and Feedback

When a study has been conducted and the results are ready, it is good practice to let those who contributed in some way know that the results are out and where they can be found.

As a general rule, the more you ask of participants, the more you have to show them that you value their contribution.

In qualitative studies, it is good practice to ask for feedback from individuals that are quoted directly in a research report (member checking).

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Informed consent

e.g. questionnaires:

Paper questionnaire = participants sign a consent form.

Online questionnaire = screen before the questions start that acts as a consent form, informing participants that by clicking on the NEXT button they are providing consent.

REMEMBER: with participants who are under 18, you will need parental consent AND pupil assent.

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(this box should expand as you type)

REMEMBER:

Anonymity cannot be guaranteed if any personally identifiable information will be collected (e.g. in an interview, asking for a name on a questionnaire).

Confidentiality = only the researcher can identify the responses of individual participants.

Section J: Data Protection and Storage

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.	☐	☐
If YES, provide a description of the data and explain why this data needs to be collected:		
(this box should expand as you type)		
Does it involve special category data (as defined by the GDPR)?	YES	NO
"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes),	☐	☐
If YES, provide a description of the special category data and explain why this data needs to be collected:		

'Personal data' includes audio/video data of interview participants.

"to one or more factors specific to the physical...identity of that natural person"

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages

Tick either 'yes' or 'no'

'Personal data' includes audio/video data of interview participants.

"to one or more factors specific to the physical...identity of that natural person"

If, 'yes', you need to write something in this box.

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.	☐	☐
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If YES, provide a description of the special category data and explain why this data needs to be collected:		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	
5	Manual files (<u>i.e.</u> in paper form)?	Paper copies of consent forms?
6	University computers?	On campus computer?
7	Private company computers?	
8	Home or other personal computers?	Home PC? or laptop???
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	
10	“Cloud” storage or websites?	Storage?
11	Other – specify:	

NB - “**collected data, drafts of the thesis, or materials for publication**”



12

For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:

(this box should expand as you type)

Think about:

- * Secure storage of paper – consent forms and/or any paper-based data collection
- * Security of data being kept on USB sticks/hard drives
- * Password protection for electronic data
- * Arrangements for the backing up of data and the security of it
- * Methods of data destruction – how? when?
- * Use of UWTSD systems, e.g. Microsoft Office (Teams, Stream, OneDrive)

Yes or No?

	Data Protection	
	Will the research activity involve any of the following activities:	
13	Electronic transfer of data in any form?	
14	Sharing of data with others at the University outside of the immediate research team?	
15	Sharing of data with other organisations?	
16	Export of data outside the UK or importing of data from outside the UK?	
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	
18	Publication of data that might allow identification of individuals?	
19	Use of data management system?	
20	Data archiving?	



21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate):
	<i>(this box should expand as you type)</i>
22	List all who will have access to the data generated by the research activity:
	<i>(this box should expand as you type)</i>
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:
	<i>(this box should expand as you type)</i>
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.
	<i>(this box should expand as you type)</i>
	Please indicate if your data will be stored in the UWTSD Research Data Repository (see

Submitting the ECDE7002 assignment



How to Guide: Assignment Layout

PDF document



How to Guide: Submitting an Assignment

PDF document



Nadolig Llawen a
Blwyddyn Newydd Dda

Merry Christmas and Happy New Year