



ECDE7013

Twilight 3: 26/11/25

Sampling



# Research Question:

Do university students perceive themselves as being cleverer than their peers?

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 their peers.

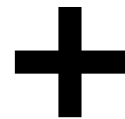
The findings show that the average participant believes that they are cleverer than 66% of the population.

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



Why use a sample?

Should the sample always  
be representative?



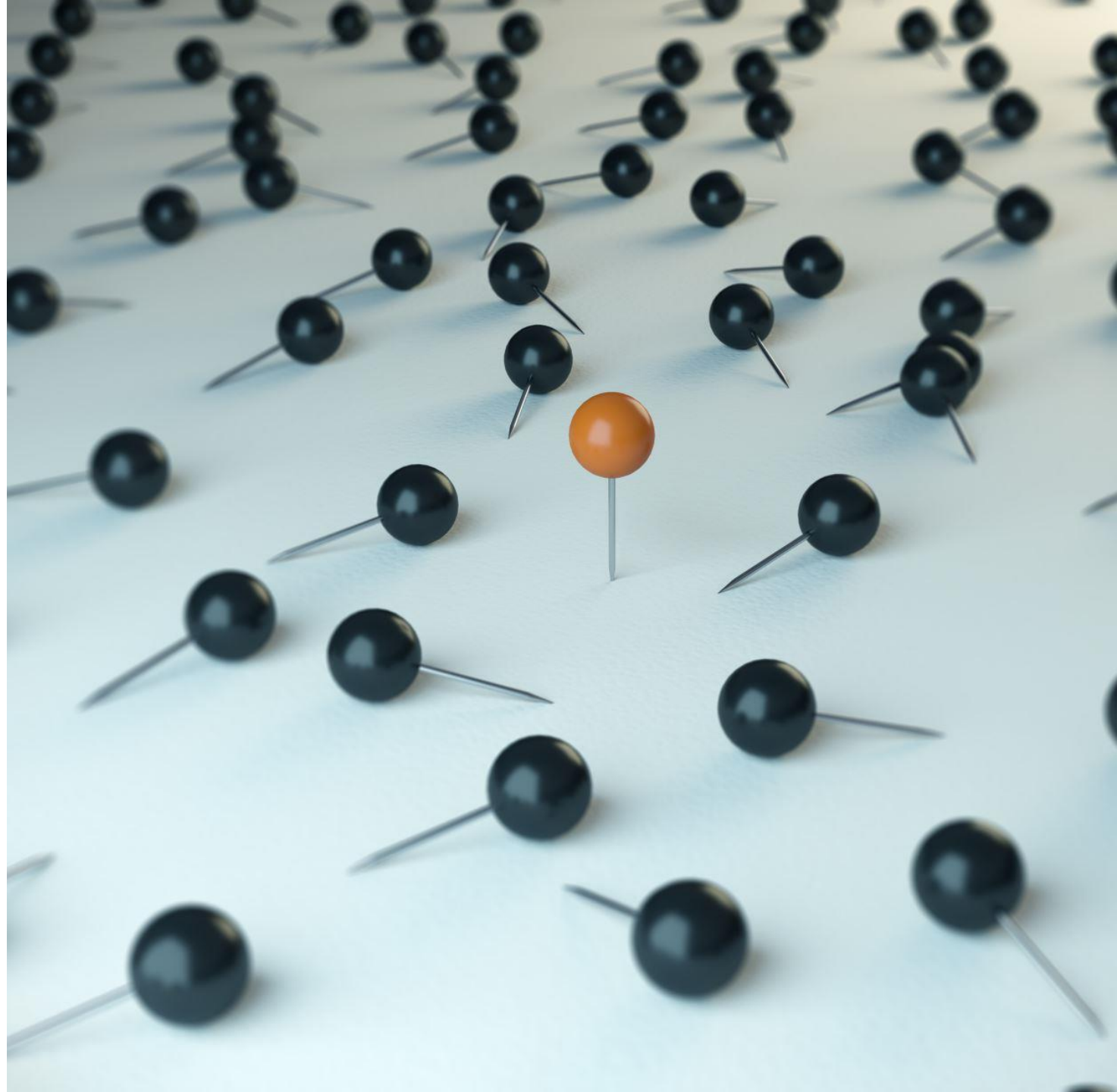
# Tonight's Session

- \*Tell us about the rationale for your sampling strategy.
- \*Are there any limitations related to your sample?
- \*Are there any ethical issues that relate to your sample?



# Probability and non-probability sampling techniques (or random and non-random)

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



# Probability/Random Sampling Methods

Probability / random 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/Random 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;
- \*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/Random Sampling Methods

simple random sampling

systematic sampling

stratified sampling

cluster sampling



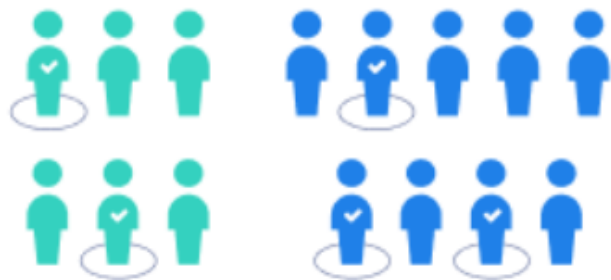
Simple random sample



Systematic sample

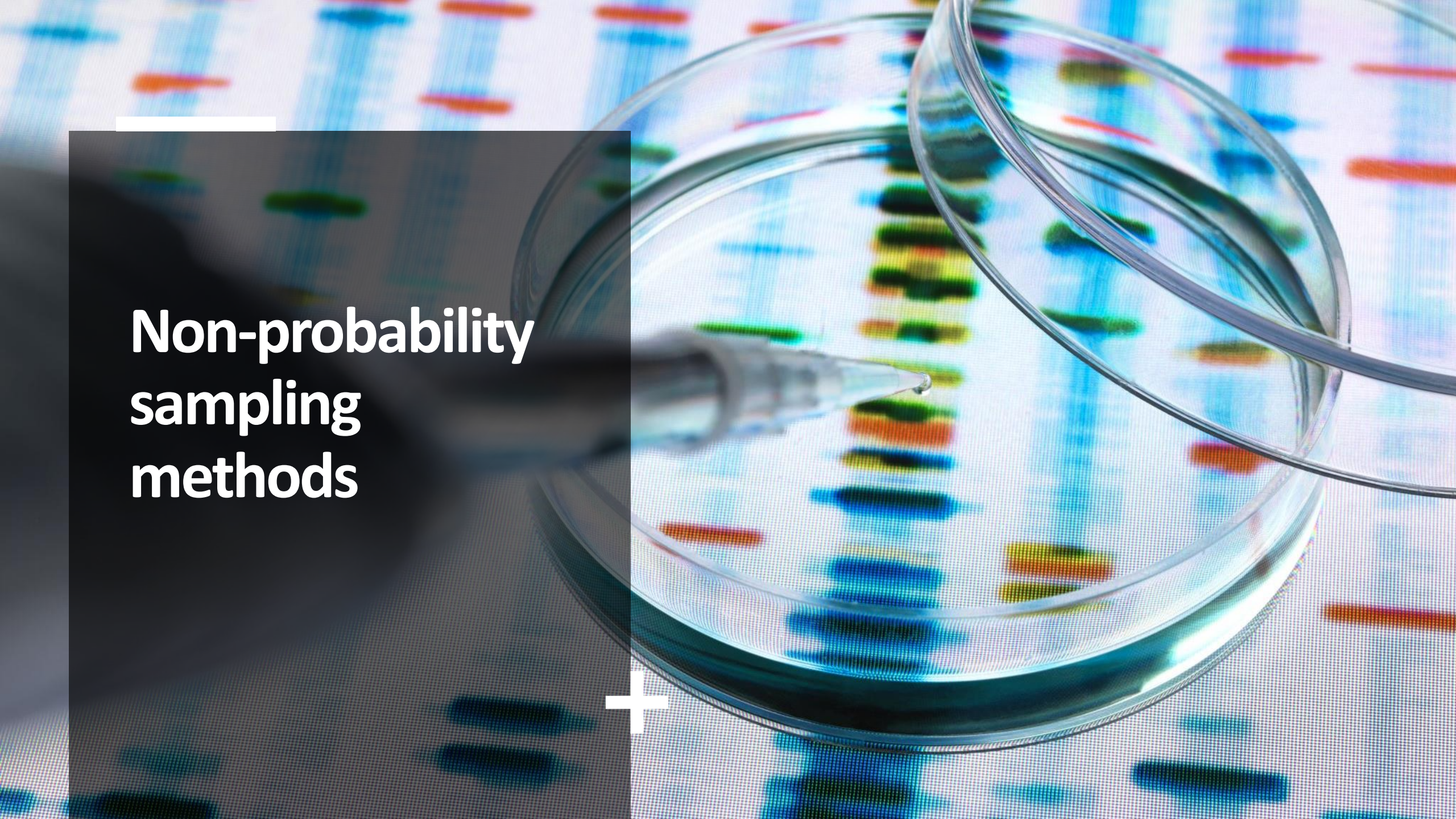


Stratified sample



Cluster sample





# 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

Voluntary response sampling

Convenience sampling

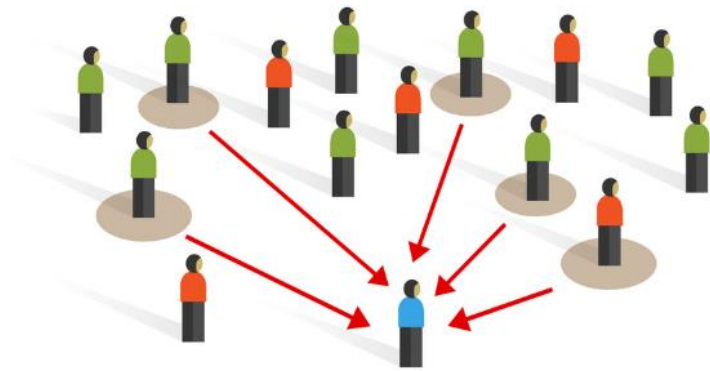
Purposive sampling

Snowball sampling

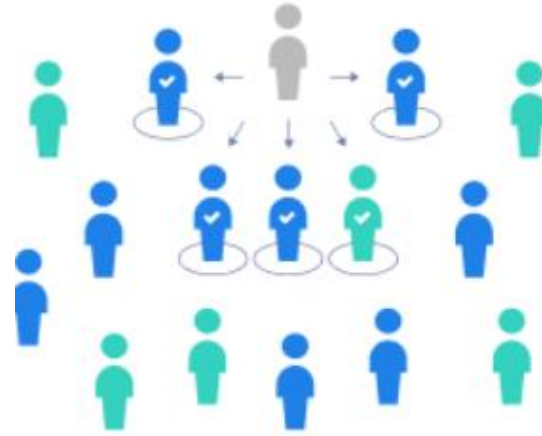
Quota sampling



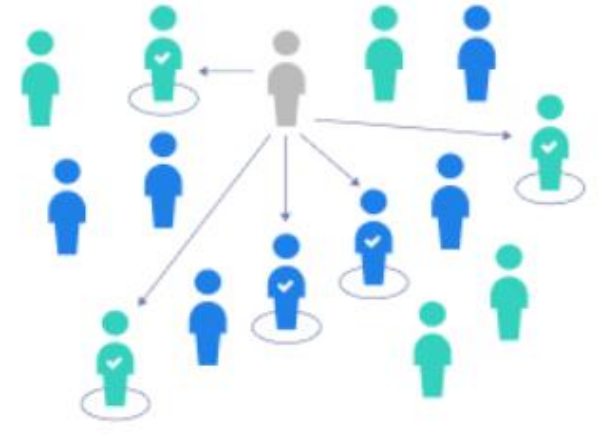
**Voluntary response sampling**



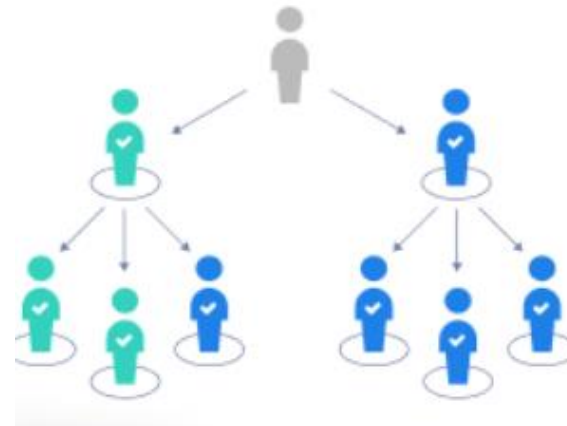
**Convenience sample**



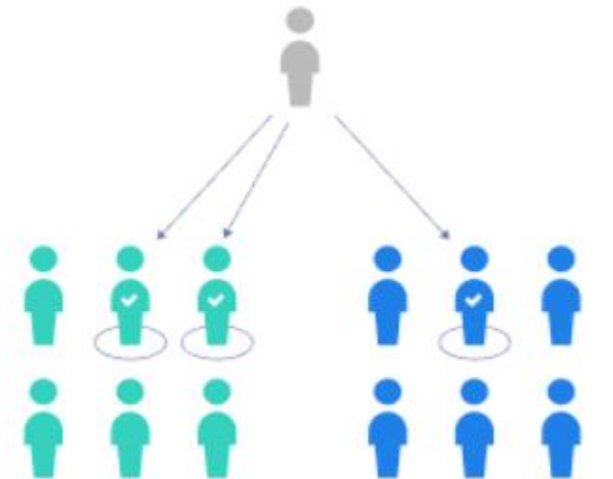
**Purposive sample**

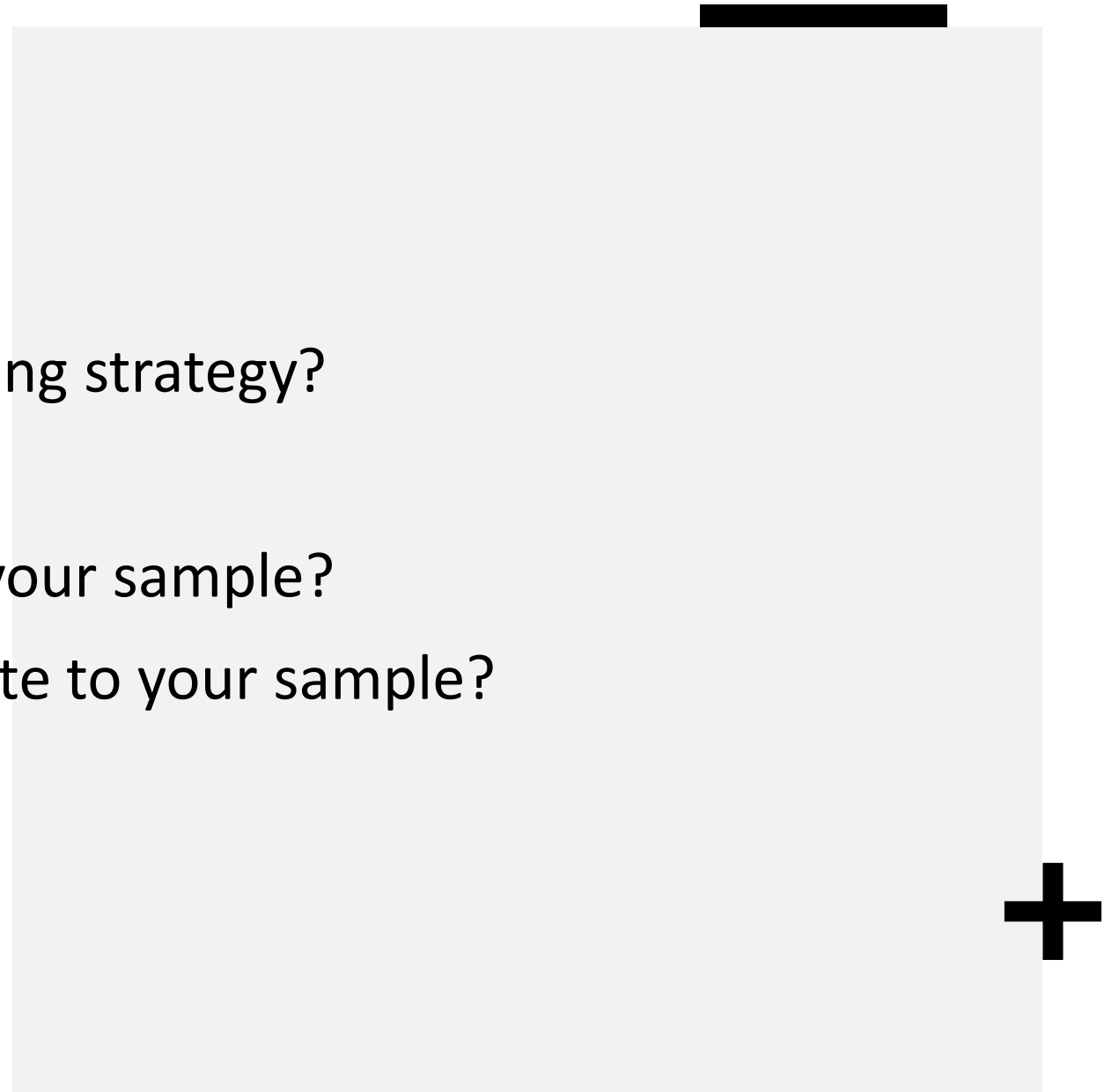


**Snowball sample**



**Quota sample**





# So...

- \*What is the rationale for your sampling strategy?

- \*Are there any limitations related to your sample?

- \*Are there any ethical issues that relate to your sample?



# Presenting Sampling Information

(in a thesis)



# In which section of the thesis should a discussion about sampling go?



## Thesis 1

**Understanding the impact of school inspection: An analysis of how school leaders in Wales interpret and respond to inspection outcomes**

## Thesis 2

**An exploration of the perceptions of undergraduate trainee teachers regarding the factors that impacted upon their use of incidental Welsh in the primary classroom.**



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# Sampling - Thesis 1

The four school leaders were selected using purposive sampling. A number of contributing factors relating to both the school leaders and myself were considered. With regards to the former, it is important to note that all participants were known to me, and I already had a working, professional relationship with them, which brought with it strengths and weaknesses. On the one hand, this familiarity with participants myself I was more prone to researcher bias (Skovholt, 2000). However, by my careful structuring of interview questions, detailed coding scheme and a defined approach to data analysis. I also recognise that having

Given the nature of my role in education, and my many years' experience of working with school leaders on a variety of projects, it was not difficult to source from my existing network a diverse group of possible participants from a range of schools across Wales. Participants were purposively sampled and chosen on the basis that they and their school met the following criteria:

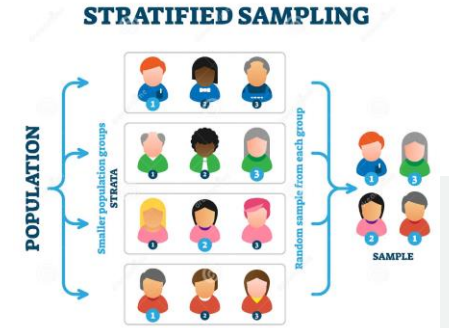
- The school was last inspected within the last complete inspection cycle (2016-2022);
- The participating school leader was in post at the time of the last inspection;
- The participating school leader holds a senior position within the school's staffing structure, and thus forms part of the school's senior management team. They must hold one of the following posts:
  - Headteacher;
  - Deputy headteacher;
  - Assistant headteacher;
  - A role similar to those identified above;
- There has been no significant structural change to the school (e.g. merger/federation) since the last inspection.

# Sampling - Thesis 1

- Two primary and two secondary schools, all English-medium in type (Welsh-medium schools were available and met the criteria, but I am not a Welsh speaker);
- Schools of different sizes (e.g. fewer/more than 500 pupils; fewer/more than 1,000 pupils);
- Schools in different geographical locations (e.g. north, south, east, west and in areas of high deprivation/low deprivation);
- Schools with contrasting performance in their last inspection (e.g. range of 'Excellent' and/or 'Good'; 'Adequate and needs improvement' and/or 'Unsatisfactory and needs urgent improvement').



# Sampling - Thesis 2



In order to ensure a representative sample, a process of random stratified sampling was carried out where trainees were divided “into homogenous groups, each group containing subjects with similar characteristics” (Cohen, Manion & Morrison, 2011:154). It was decided that there should be three elements that would determine the sample:

1. Prior achievement in Welsh language
2. Male: Female ratio
3. Geographical area

There were 61 Trainee Teachers at this point.

1. Trainees with no prior knowledge of Welsh;
2. Trainees who had studied Welsh up to Year 9;
3. Trainees who had studied GCSE W2L Short Course;
4. Trainees who had studied GCSE W2L Full Course;
5. Trainees who had studied AS level W2L;
6. Trainees who had studied A level W2L;
7. Trainees who had studied GCSE Welsh First Language.

# Sampling - Thesis 2

The proportions of trainees within each category can be seen in Figure 2.

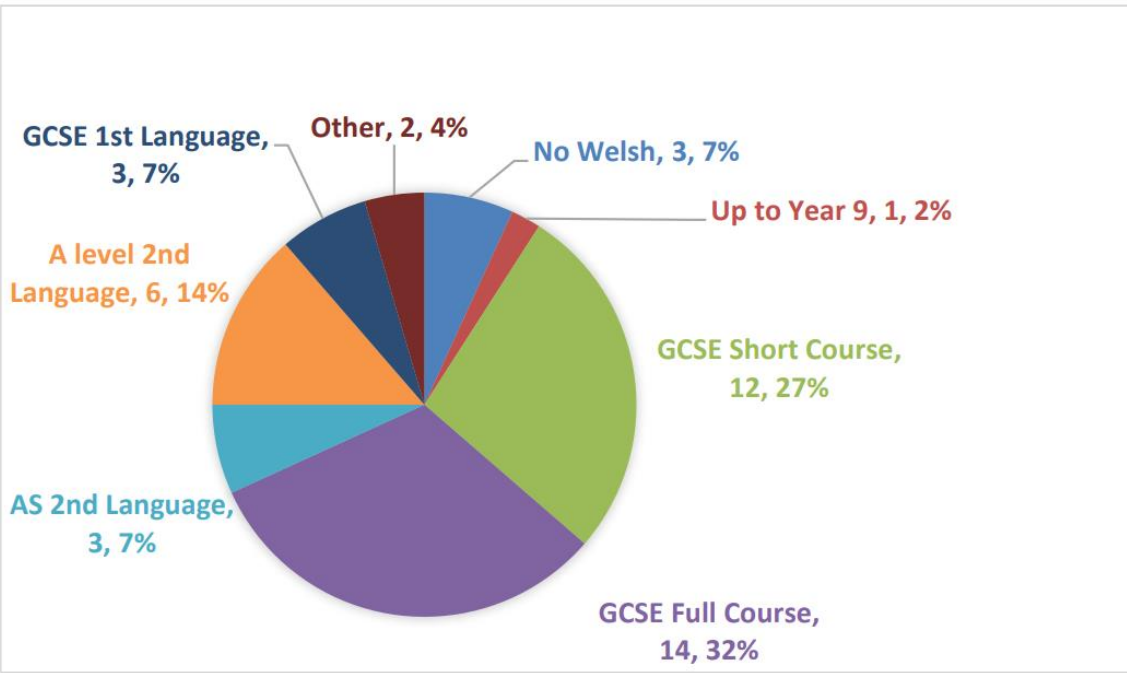


Figure 2: Welsh Previously Studied

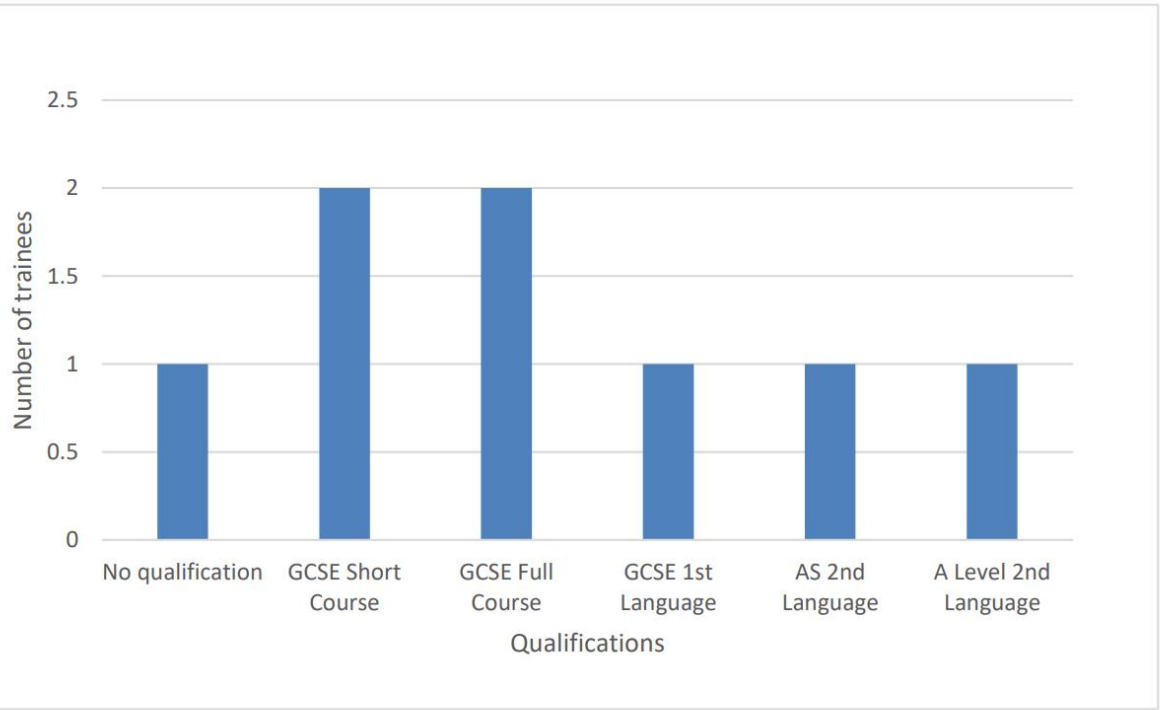


Figure 3: Welsh Language Qualifications of Case Study Trainees

n=61

# Sampling - Thesis 2



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Secondly, it was considered that the numbers of male and female trainees within the sample to be observed should be representative of the whole cohort. The total number in the cohort being placed in a school for PTE2 was 61, with 48 female trainees and 13 male trainees. Therefore, it was decided that six female trainees and two male trainees would be chosen as a representative sample of the whole cohort.



# Sampling - Thesis 2

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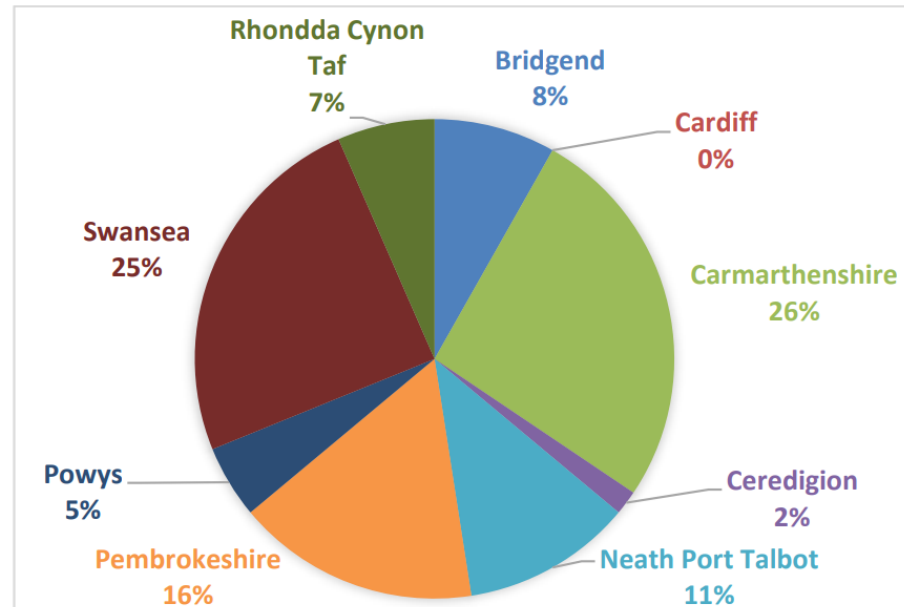


Figure 4: PTE2 Locations

n=61

# Sampling - Thesis 2

|             | Trainee 1<br>Group 6,<br>Female |       | Trainee 2<br>Group 4,<br>Female |       | Trainee 3<br>Group 1,<br>Female |       | Trainee 4<br>Group 7,<br>Female |       | Trainee 5<br>Group 3,<br>Female |       | Trainee 6<br>Group 4,<br>Male |       | Trainee 7<br>Group 5,<br>Male |       | Trainee 8<br>Group 3,<br>Female |       |
|-------------|---------------------------------|-------|---------------------------------|-------|---------------------------------|-------|---------------------------------|-------|---------------------------------|-------|-------------------------------|-------|-------------------------------|-------|---------------------------------|-------|
|             | Year2                           | Year3 | Year2                           | Year3 | Year2                           | Year3 | Year2                           | Year3 | Year2                           | Year3 | Year2                         | Year3 | Year2                         | Year3 | Year2                           | Year3 |
| Bridgend    |                                 |       |                                 |       |                                 |       |                                 |       |                                 |       |                               | X     | X                             | X     |                                 |       |
| Cardiff     |                                 | X     |                                 |       |                                 |       |                                 |       |                                 |       |                               |       |                               |       |                                 |       |
| Carms.      | X                               |       |                                 | X     |                                 |       |                                 |       |                                 |       |                               |       |                               |       |                                 |       |
| Ceredigion  |                                 |       | X                               |       |                                 |       |                                 |       |                                 |       |                               |       |                               |       |                                 |       |
| NPT         |                                 |       |                                 |       |                                 |       |                                 |       | X                               | X     |                               |       |                               |       |                                 |       |
| Pembs.      |                                 |       |                                 |       | X                               | X     |                                 |       |                                 |       |                               |       |                               |       |                                 |       |
| Powys       |                                 |       |                                 |       |                                 |       |                                 |       |                                 |       |                               |       |                               |       |                                 |       |
| RCT         |                                 |       |                                 |       |                                 |       |                                 |       |                                 |       | X                             |       |                               |       |                                 |       |
| Swansea     |                                 |       |                                 |       |                                 |       | X                               | X     |                                 |       |                               |       |                               |       | X                               | X     |
| V. of Glam. |                                 |       |                                 |       |                                 |       |                                 |       |                                 |       |                               |       |                               |       |                                 |       |

Carms. = Carmarthenshire  
 Pembs. = Pembrokeshire  
 V. of Glam. = Vale of Glamorgan

NPT = Neath Port Talbot  
 RCT = Rhondda Cynon Taf

Figure 5: Characteristics of case study trainees

# ECAD7013 Day 2 Preparatory Task

- Draft a diagrammatic outline of your research design.
- This might take the form of a flow diagram, a timeline or a table.
- It should show the research activity of the project and, where needed, indicate where there are dependencies (for example, when the outcomes of a survey will inform the question design for an interview).
- Try to show this on a PP slide in order to present to colleagues.
- Start thinking about your theoretical frame – what understandings are framing /guiding your project design and intentions?
- Can you respond to Flick's questions (next slide)?



# Flick's questions (from page 92, 5<sup>th</sup> edition)

- On which epistemological and theoretical frameworks will you base your study?
- How do you take these backgrounds into account in your study?
- How do you take the participants' viewpoints into account and how do you incorporate them in the research and in their analysis?
- Which methodological consequences follow for your study if you start from a constructivist epistemology and how do you put these consequences into concrete terms?
- How do the methods you chose fit the epistemological assumptions the study is based on?

