LECTURE SIX: Triangulation & Sampling

6.1. Triangulation

"Triangulation refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings." (Bryman, 2004).

Cohen and Manion (1986) define triangulation as an "attempt to map out, or explain more fully, the richness and complexity of human behavior by studying it from more than one standpoint".

6.1.3. Types of triangulation

    a) *Data triangulation* involves using different information *sources* to increase the study's validity.

    b) *Investigator triangulation* involves using several different investigators in the collection and analysis, and interpretation of data.

    c) *Theory triangulation* refers to the use of more than one theoretical position (framework) in interpreting data.

    d) *Environmental triangulation* involves the use of different locations, settings, and other key factors related to the environment in which the study took place like time, day, or season.

    e) *Methodological triangulation* refers to the use of more than one method for gathering data.

**6.1.4. Why use triangulation in research?**

- The main purpose of triangulation in research is to increase the credibility and validity of the results.
- Triangulation is used to make up for the shortcomings of the different data collection tools.
- Triangulation provides a clearer understanding of the research problem.
- By providing multiple sources of data, triangulation helps the researcher avoid bias.

6.1.5. Challenges of using triangulation

- Triangulation generates large quantities of data and therefore analysis can be time consuming.
- Triangulation can be costly.
- If not planned carefully, triangulation can generate conflicting results.
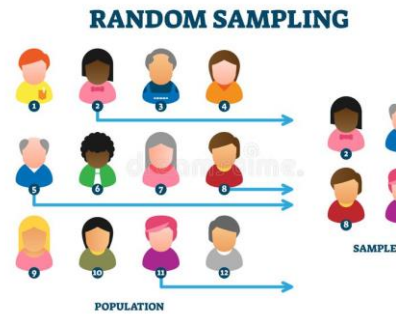
6.2. Sampling in research

A *population* is the entire group that the researcher wants to draw conclusions about. A *sample* is the specific group that the researcher will collect data from. The size of the sample is always less than the total size of the population.
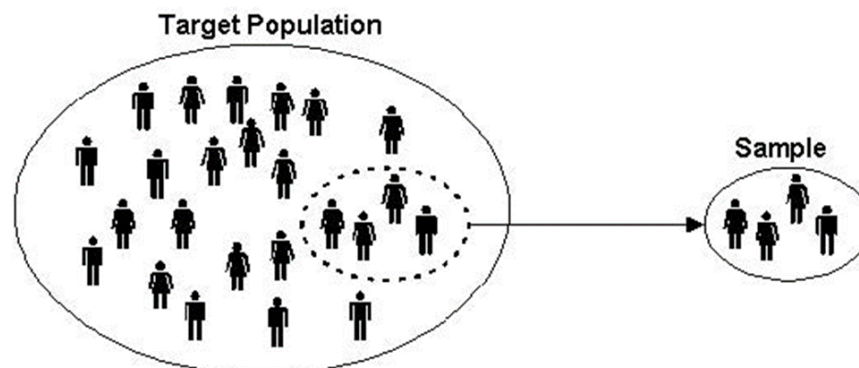
I. **PROBABILITY SAMPLING (REPRESENTATIVE):** a type of sampling where all of the participants of the population have an equal chance (probability) of being selected in the sample. Probability sampling includes random sampling, systematic sampling, stratified random sampling, and cluster sampling.

1. **Random sampling:** the key to random sampling is that each unit in the population has an equal probability of being selected in the sample. Using random sampling protects against bias being introduced in the sampling process, and hence, it helps in obtaining a representative sample.
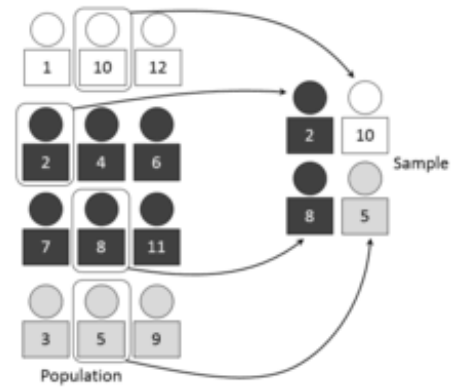
***Example*:** Researcher goes to an English school and randomly selects 60 participants to take part in a study.

2. **Systematic sampling** is similar to random sampling, but it is usually slightly easier to conduct. Every member of the population is listed with a number, but instead of randomly selecting participants, individuals are chosen according to some systematic rule – e.g. every fourth unit/student, etc.
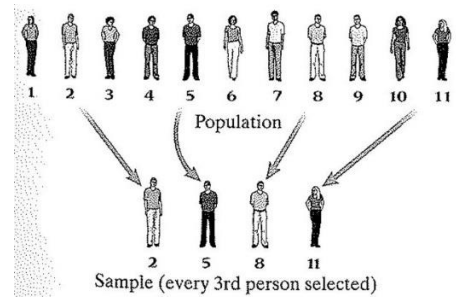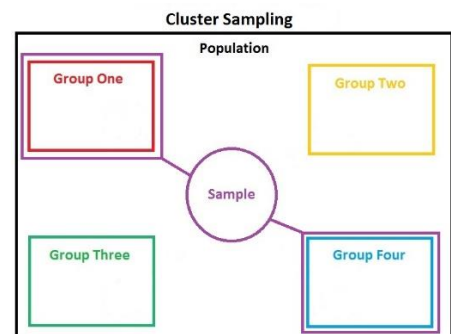
***Example*:** Researcher goes to a classroom at an English school and selects every 3rd student.

3. **Stratified random sampling:** used when the population has different groups (strata) and the researcher needs to ensure that those groups are fairly represented in the sample. In stratified random sampling, independent samples are randomly drawn from each group.

Example: Researcher goes to an international English school with students from Arabic, French, Italian, and Chinese L1 backgrounds. In stratified sampling, the researcher has to randomly select participants from each L1 subgroup in the English school.

4. **Cluster sampling** is a probability sampling method in which you divide a population into clusters, such as districts, schools or classrooms, and then randomly select some of these clusters (groups) as your sample.

Example: Researcher goes to an English school with eight classrooms. In cluster sampling, the research can randomly select two classrooms to do the study.

II. **NON-PROBABILITY SAMPLING (NON- REPRESENTATIVE):** a type of sampling where the participants do not have an equal chance (probability) of being selected in the sample. Non-probability sampling includes convenience sampling, voluntary sampling, snowball sampling, quota sampling, and purposive sampling.

1. Convenience sampling (also known as availability sampling) relies on data collection from population members who are conveniently available to participate in study. In other words, this sampling method involves getting participants who are *not very far* from the researcher wherever *convenient*.
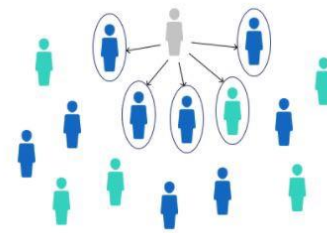
Example: An MA student investigating students' opinions on university support services. After each class, the student asks one of their classmates to complete a survey. This is a convenient way to gather data, but as the student only surveyed their classmates, the sample is not representative of all university students.

5. Voluntary response sampling, similar to a convenience sample, a voluntary response sample is mainly based on ease of access. However, instead of the researcher choosing participants and directly contacting them, people volunteer themselves. Voluntary response samples are always at least somewhat biased, as some people will inherently be more likely to volunteer than others.
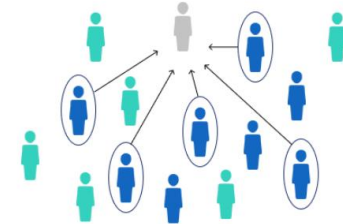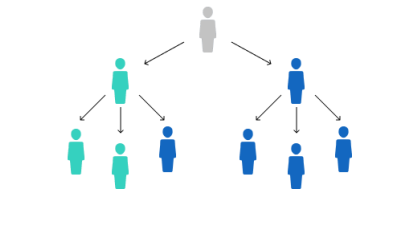
*Example***:** A researcher posts an advertisement for an experiment at an English school. Only motivated students join the study.

2. Snowball sampling is usually done when there is a very small population size. In this type of sampling, the researcher asks the initial participant to identify another potential participant who also meets the criteria of the research.

Example: A researcher doing a study on disabled EFL teachers in Algerian high schools. After interviewing one participant, and due to the limited number of potential participants, the researcher asks the first participant to identify other disabled EFL teachers who work in high schools.

3. Quota sampling is defined as a non-probability sampling method in which researchers create a sample involving individuals that represent a population with its various subgroups (e.g. age, gender, education, race, or religion). However, unlike *Stratified Random Sampling,* participants are chosen through a non-random sample selection (i.e. only available/ volunteering participants).
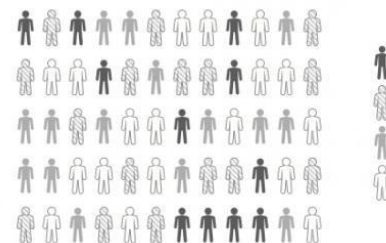
Example: In an English school where students are 20% male and 80% female, the researcher chooses to interview a quota of 20 male students and 80 female students to get a proportional balance. However, unlike Stratified Random Sampling, the researcher interviews only the participants who are *conveniently* available.

4. Purposive sampling (judgement sampling): subjects are chosen to be part of the sample with specific purpose in mind. The researcher believes that some subjects are more fit for the research compared to other individuals.

Example: A researcher at an English school chooses only students with fluent English to do interviews.

Purposive sample