

RESEARCH METHODOLOGY

Quantitative methods:

- Data in quantitative research comprises of numbers
- operates with variables.
- There are 3 types of Quantitative research.

Qualitative methods: - Idiographic approach

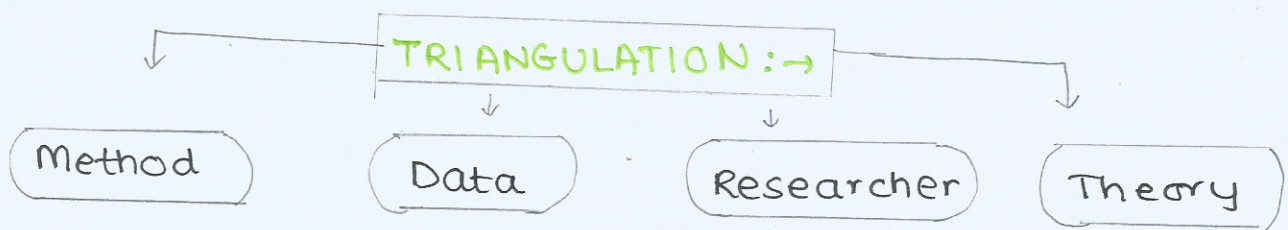
- main focus is an in-depth study of a particular phenomenon.
- cannot be quantified - human experiences, meanings and interpretations.
- data collection methods → interviews or observations
- data comes in the form of interview transcripts, observational notes etc.
- interpretation involves a degree of subjectivity but analysis requires quantitative methods.

Credibility in qualitative research

The term trustworthiness is used to denote credibility in qualitative research.

TRIANGULATION:

This refers to a combination of different approaches of collecting and interpreting data.



► Method triangulation

The use of different methods to collect data. If the same results are obtained using various methods, the source is credible.

► Data triangulation

The use of data from a variety of accessible sources to see whether they have the same results and if they do, the source is credible. Observations may be supported by studying documented biographical data.

► Researcher triangulation

The researcher triangulation refers to combining observations or interpretations of different researchers. If two or more researchers have the same findings, this increases their credibility.

► Theory triangulation

This refers to using multiple perspectives or theories to interpret data and check whether it is credible or not.

ESTABLISHING A RAPPORT:

- Researchers should ensure that the participants are being honest.
- It should be made clear to the participants that there are no right or wrong answers.
- A good rapport should be made in general so that the participants do not alter their behaviour in front of the researcher.

ITERATIVE QUESTIONING:

- In research projects, generally involving sensitive data, there is a risk that the participant may lie or distort data intentionally or unintentionally to create a certain impression on the researcher.
- Spotting the distorted answers and asking them the same thing later by reframing the question might help.

REFLEXIVITY

- Researchers should reflect back on their own biases that might have resulted in a change in the observations or interpretations.
- They also need to reflect on how it might have affected their observations as some biases in qualitative research are unavoidable.

► Epistemological reflexivity:

- It is linked to the strengths and limitations of the data collecting methods.

► Personal reflexivity:

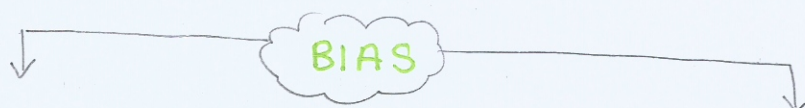
- It is linked to the personal beliefs of the researcher that might have caused a bias in the research.

CREDIBILITY CHECKS

This refers to the checking of data by asking participants to read the transcript or the notes taken during the interview to see whether the data is accurate or not.

THICK DESCRIPTIONS

- Explaining the observations and the context in which it occurred so that an outsider can understand what the research was about.
- It should be detailed and explained completely.
- Even the personal interpretations should be taken into consideration while writing the description.



PARTICIPANT BIAS

- Acquiescence bias
- Social desirability bias
- Dominant respondent bias
- Sensitivity bias

RESEARCHER BIAS

- Confirmation bias
- Leading questions bias
- Question order bias
- Sampling bias
- Biased reporting

BIAS IN QUALITATIVE RESEARCH

- Bias in qualitative research is an integral part of the research as the researcher is a tool through which data is collected.
- The biases that are inevitable need to be reflected on and accounted for.

► Participant bias

• Acquiescence bias

- the tendency to give positive answers to any question
- it might be unintentionally or may be induced by the nature of questions or the researcher's behaviour.

• Social desirability bias

- the tendency to respond or behave in a way that they think will make them accepted.
- the participant may try to look better than what they are.
- Research into sensitive topics is vulnerable to social desirability.
- the questions should be framed in a non-judgemental way where any answer can be correct.

• Dominant respondent bias

- It occurs in a group interview when one of the participants influences the behaviour and response of the other people present there.
- Dominant responders may dominate or "hijack" the interview by demonstrating their prior knowledge of the subject.
- Researcher should keep the dominant responder in check and should make sure that everyone gets an equal opportunity to answer.
- Participants should feel as if it is a safe and comfortable environment to voice their opinions without others judging them.

• sensitivity bias

- tendency of participants to answer regular questions honestly but distort their responses to questions on sensitive subjects.

► Researcher bias

• Confirmation bias

- the researcher has a prior belief and uses the research in an unintentional attempt to confirm that belief.
- it may influence the wording of questions, selectivity of attention while observing the data or the behaviour.
- Reflexivity is the solution to confirmation bias.
- It is unavoidable in qualitative research as the data is obtained by humans.

• Leading question bias

- Respondents in an interview are inclined to answer in a certain way because the wording of the question encourages them to do so.
- Interviewers should ask open-ended and neutral questions that do not suggest a particular answer.
- Questions should be worded in the participant's own language.

• Question order bias

- when responses to one question influences the participant's response to the following question.
- To avoid this, generic questions should be asked first and then the specific ones, positive before negative ones, behaviour questions before attitude questions.

• Sampling bias

- the sample isn't adequate for the aims of the research.
- the selection of people who are not "the best-fit" in terms of the research purposes may be the result of convenience sampling.

• Biased Reporting

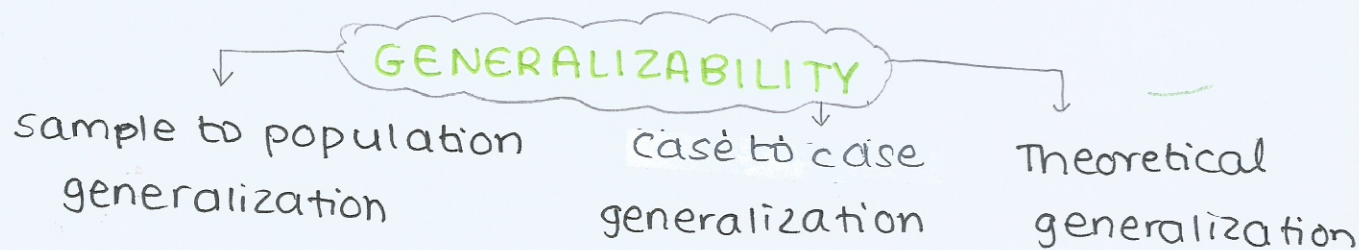
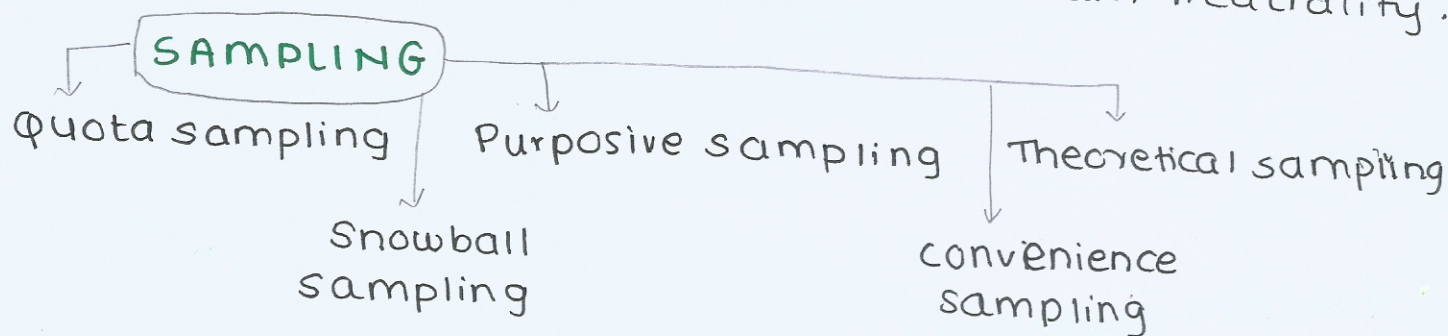
- When some findings of the study are not equally shown/ represented in the research report.
- Reflexivity, integrity and training of researchers are the means to avoid biased reporting.

• Reflexivity and triangulation are the two most important instruments that allow the researcher to reduce the influence of bias in qualitative research.

• Researcher bias - special attention should be paid to including the entire data and the limitations of the study in the research report.

↳ Individual researchers should be asked to review the experiment and check the results.

• Participant bias - it is important to ask indirect and open-ended questions and maintain neutrality.



SAMPLING AND GENERALIZATION IN QUALITATIVE RESEARCH

Generalization

It is a broad inference from particular observations.

In qualitative research, the argument against generalizability is that samples are not statistically representative of the target population.

Counter argument

Qualitative methods do not aim to apply research findings to a wider population. The purpose of these methods is to study a particular example but not the population that it represents.

Sampling in qualitative research

• Quota sampling

- It is decided prior to the start of the research how many people to include in the sample and what characteristics they should have.
- This decision is driven by the research question.
- Similar to stratified sampling as the sample proportions are pre-defined.

• Purposive sampling

- Similar to quota sampling because the main characteristics of the participants are defined in advance.
- The proportions and the sample size is not defined.

• Theoretical sampling

- It is a type of purposive sampling that stops when the point of Data Saturation is reached.
- Data saturation means that no new information is obtained from the new participants added to the sample.
- Generalisation in this case is made from the data to the theory.

• Snowball sampling

- A small number of participants are invited and asked to invite other people they know who are of interest for the purposes of the research.
- used in research with groups of people who are difficult to reach.

• Convenience Sampling

- usage of a sample that is easily available or accessible.

Studies using quota, purposive or theoretical sampling are more generalizable.

Types of Generalizability

• Sample to population generalization:

- The researcher identifies the target population and then selects the sample that is representative of that population.
- The best type of sampling for this is random sampling.

• Theoretical generalization:

- Generalization is made from particular observations to a broader theory.
- In quantitative research, theoretical generalization takes the form of construct validity.
- In qualitative research, it is obtained through analysis and interpretation of research findings.
- It can be applied to a larger population only if thick descriptions were provided, data saturation was achieved, it was free of biases and so on.

• case to case generalization

- Also known as transferability.
- Generalization is made to a different group of people or a different setting or context.
- In qualitative research, transferability is the responsibility of the researcher and the reader of the research report.

Researcher's responsibility to provide thick descriptions of the study so that the reader has sufficient information and context.

OBSERVATION

Reasons for choosing the method of observation:-

- The focus of the study is on how people interact, interpret each other's behaviour and act upon these interpretations in a natural setting.
- The researcher believes that meaningful knowledge in the research area cannot be generated without observation.
- Observation allows the researcher to become immersed deeply into the studied phenomenon, sometimes even becoming a part of it.

Types of observations

• Laboratory v/s naturalistic observation

- Naturalistic observation is carried out in naturally occurring settings.
- No place is arranged for the purpose of the study.

Advantage

- In some situations, arranging such settings for the behaviour of the interest to occur, it might be unethical.

Drawback

- Time-consuming because the behaviour of interest occurs at certain times only.

• Overt v/s covert observation

- Overt observation occurs when participants are aware of the fact that they are being observed.
- Participants give their informed consent which makes this ethical.
- Down side of this is that the participants might change their behaviour to meet the expectations of the researcher.
- Covert observation occurs when the researcher doesn't inform the members of the group about the reasons for his/her presence.
- It helps in gaining access to groups that would usually disagree to participate in the research.
- There is no participant bias as they aren't informed about the research but it is unethical to not take informed consent.
- Participants should be debriefed after the study.

• Participant observation

- In this method, the observer becomes part of the observed group.

Advantage

- It allows the researcher to gain first hand experiences with the phenomenon of interest, gaining valuable insights.

Disadvantage

- If the participants do not realise that one of the members in their group is an observer, it may be ethically questionable especially in sensitive topics.

• Structured v/s unstructured observation

- In structured observation, information is recorded systematically and in a standardized way.
- In an unstructured observation, there is no pre-defined structure and the observer simply registers the behaviours that he/she finds noteworthy.

Interview - interviewer is the main research instrument.

→ Why?

- may be the only way to get an insight into the nature of subjective experiences and interpretations.
- Used to understand the meanings participants attach to certain values, events or point of views.
- the topic is too sensitive to be discussed in a group.

→ What is an interview?

- personal form of research as there is direct contact between the interviewer and the interviewee.

→ When is it used? → sensitive topics

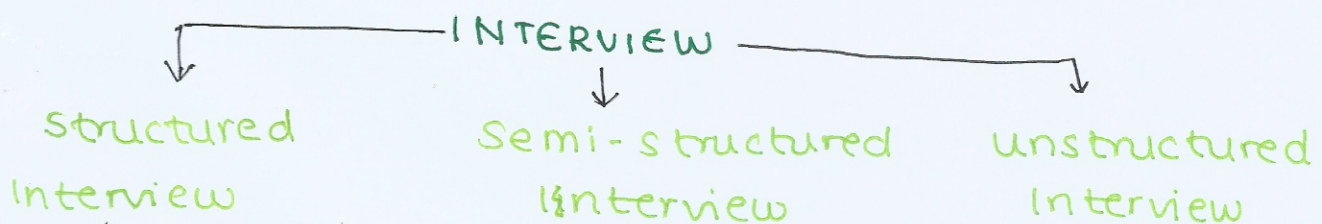
- coping with terminal illness, experiencing phobias, daily routines related to drug use or internet addiction.

→ While interviewing, it is necessary to:

- build a rapport
- ask neutral and carefully phrased questions
- listening carefully and asking follow-up questions.

→ Data comes in forms of

- audio or video recording
- ↓
- converted to interview transcripts
- interview notes



1. Structured interviews

- fixed list of questions
- fixed set of order.
- all sessions are conducted in a similar manner
- useful when multiple interviewers are required.
- easy to make comparisons based on the answers

2. Semi-structured interviews

- no specific order of questions
- no specific set of questions
- can ask follow up questions to get clarification
- smaller research projects
- there is a checklist - researcher knows what to ask

3. Unstructured interviews

- participant driven
- the next question is determined by the answer given for the previous one.
- two different interviewees may end up getting different questions.
- overall purpose is kept in mind

FOCUS GROUP

- special type of semi-structured interview
- conducted with a group of 6-10 people simultaneously.
- participants are encouraged to interact with each other
- interviewer serves as a facilitator
- participants discuss the responses and react to each other's statements.
- the researcher gets to know other people's perspectives & opinions.
- can observe group dynamics and makes sure that the participants stay focused on the research topic.

Advantages of a focus group

- Quick way of getting information from a large no. of participants at one time.
- creates a natural and comfortable environment that ensures less participant bias.
- easier to answer sensitive topics in a group
- multiple perspectives are seen for a better overall understanding of the topic.

Limitations of a focus group

- Some participants may be dominant and the other participants might feel uncomfortable and give distorted answers.
- difficult to maintain confidentiality and anonymity.
- demanding in terms of sampling and creating interview transcripts.

CONTENT ANALYSIS

Inductive content analysis: Widely used approach to analyse texts produced by participants is known as inductive content analysis.

- **main goal is to derive a set of recurring themes.**
- A balance between description and interpretation should be maintained.
- The interpretations should be backed up evidence from the text.

Steps followed while doing inductive content analysis :-

Writing the transcript Reading the raw material

Themes are grouped Summary conclusions based on summary.

1. Writing the transcript: 2 types

VERBATIM

- word to word transcripts that the participants say.

POST-MODERN

- includes notes about gestures, intonation and non-verbal behaviour.

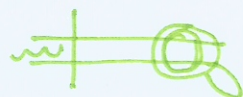
2. Reading the raw material and identifying the theme. Done multiple times

Researchers start with low level themes, try staying as close to the text as possible



CONTENT

First reading → Initial themes are identified and are written on the margins.



Second reading → themes are conformed and revised. New themes can be added. • + • + • - themes

3. Low level themes are grouped into high level themes that are smaller in number.

The grouping involves an element of interpretation on the part of the researcher.

A
XYZ

B
123

C
△ ○ □



For credibility check the other researchers can be involved so that the results of the groupings can be checked by many researchers.

4. A summary table of themes is prepared.

The high-level emergent themes are listed with the lower-level themes under them and the evidence from the raw transcript.

HIGH LEVEL THEMES

low level themes


evidence

Data saturation is reached when no new themes can be identified after reading the content.

5. conclusions are formed based on summary tables.

The conclusions link the emergent themes to the theory. For credibility checks, the participants are shown the results and asked to confirm whether the themes & interpretations are accurate or not.

→ These results can be accompanied by memos that explain how and why the decisions were made.

↳ Increases "thickness" of the description. 

Grounded Theory:

If a theory emerges from the data, it is referred to as a grounded theory.

CASE STUDY

It is an in-depth investigation of an individual or a group.

- The individual or a group that is studied is unique in some or the other way.
- Sampling isn't an issue as you are interested in a particular case.
- Less focus on generalizability. There is an in-depth investigation and explanation of a particular case therefore only case to case generalization & theoretical generalization can be done till some extent.
- Studied thoroughly using a combination of different methods.

Why choose case studies?

1. useful to investigate a phenomena that could not be studied otherwise.

2. case studies can contradict established theories and can help develop new ones.

Falsification in science

- The proper way to test a theory is to find one case that contradicts it.
- If there is no contradiction, the theory stands, but if there is one then the theory needs to be rejected or modified.

Limitations of case studies

- Researcher bias - too involved in the study
- Participant bias - social desirability, acquiescence bias etc.
- Generalization is difficult.
- Difficult to preserve anonymity and confidentiality in unique cases.

In case of a person suffering with brain damage, the informed consent should be taken from their guardians.