



IIT ROORKEE



NPTEL ONLINE
CERTIFICATION COURSE

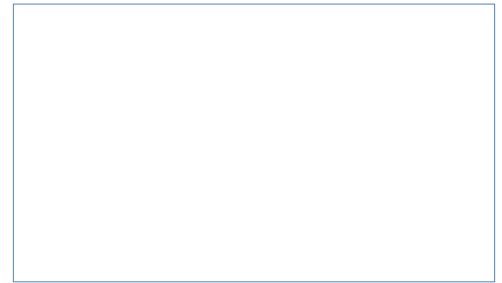
INTRODUCTION TO INTERACTION DESIGN

Lecture 11 Data Gathering

Prof. Sonal Atreya
DEPARTMENT OF DESIGN

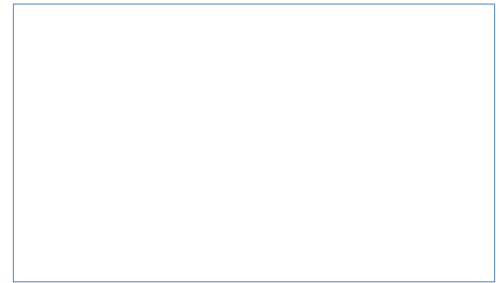


Data Gathering



What is data?

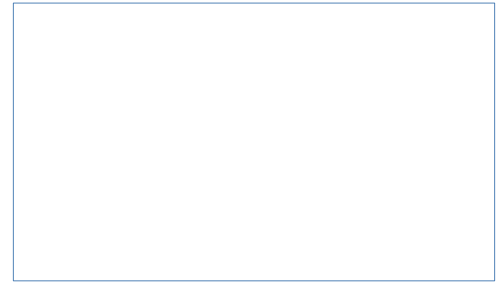
- Numbers
- Measurements
- Description
- Text
- Images
- Audio
- Video



Goal:

To understand

- **Needs**
- **Behaviour**
- **Preferences**



Quantitative

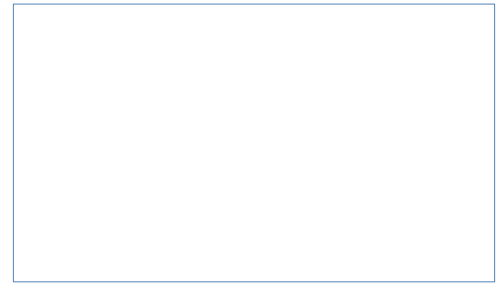
Quantitative research focuses on gathering and analyzing numerical data and involves statistical analysis.

E.g., Clicks to reach customer support

Qualitative

Qualitative research seeks to understand complex phenomena by exploring subjective experiences, meanings, and perspectives.

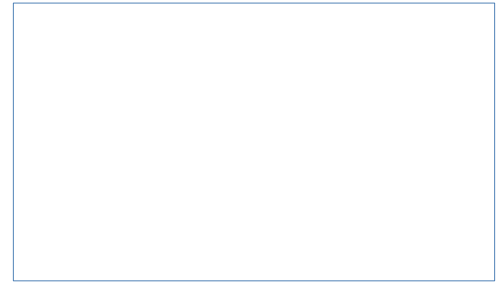
E.g., Feedback of customer support



Techniques:

- **Interviews**
- **Questionnaires**
- **Observation**

*****Background Requirements/
key issues

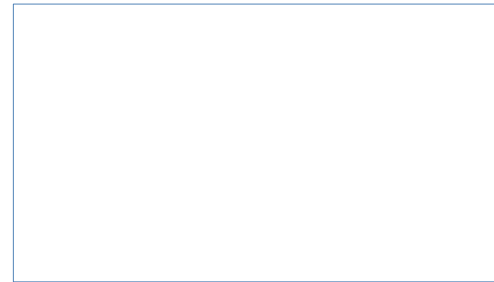


1

Requirements / Goals

The screenshot shows the Yahoo! sign-in interface. At the top is the 'yahoo!' logo. Below it, the text reads 'Sign in to Yahoo Mail' and 'Sign in using your Yahoo account'. A text input field is labeled 'Username, email address or mobile number'. Below the input field is a blue 'Next' button. Underneath the button are two links: 'Stay signed in' (with a checked checkbox) and 'Forgotten username?'. At the bottom of the form is a blue 'Create an account' button.

The screenshot shows the Google sign-in interface. At the top is the 'Google' logo. Below it, the text reads 'Sign in' and 'to continue to Gmail'. A text input field is labeled 'Email or phone'. Below the input field is a blue link 'Forgot email?'. Further down, there is a note: 'Not your computer? Use a Private Window to sign in.' followed by a blue link 'Learn more'. At the bottom left is a blue link 'Create account', and at the bottom right is a blue 'Next' button.



2 Participants

Study Population: People from whom specific data is required

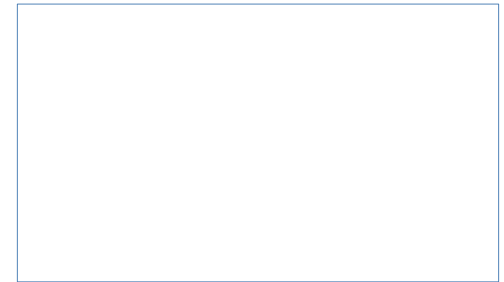
Sampling: choosing participants

Probability sampling

- Random sampling
- Stratified sampling

Nonprobability sampling

- Convenience sampling
- Volunteer sampling
- Purposive sampling
- Snowball sampling

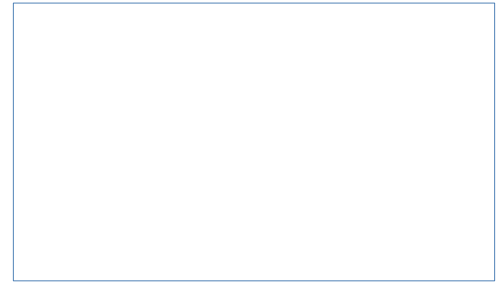


Probability sampling

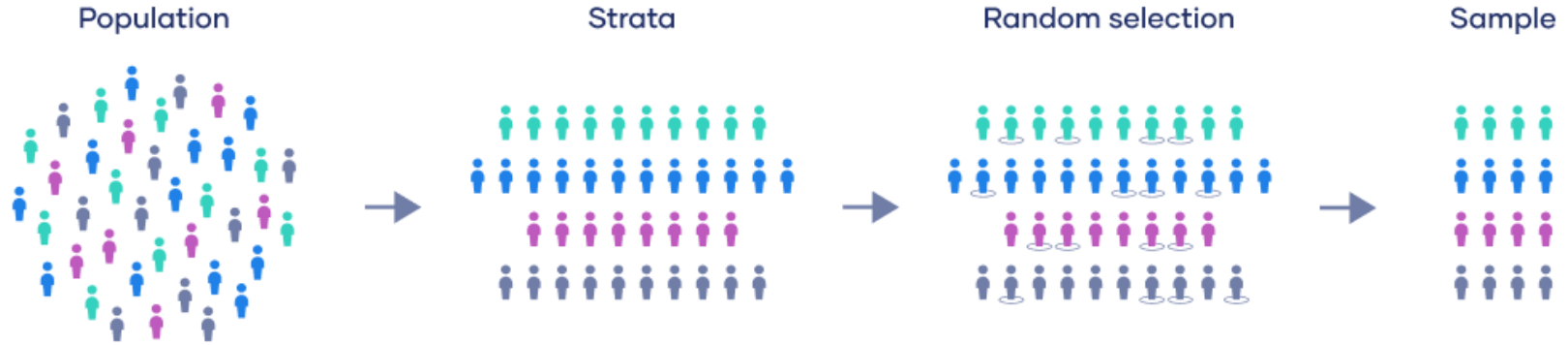
Random sampling



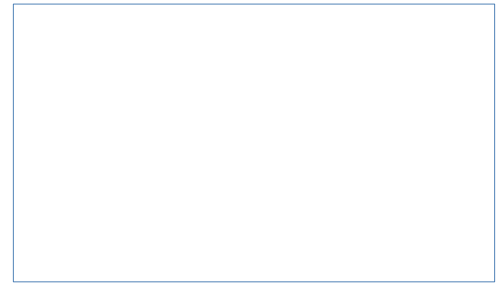
<https://www.scribbr.com/methodology/random-assignment/>



Stratified sampling

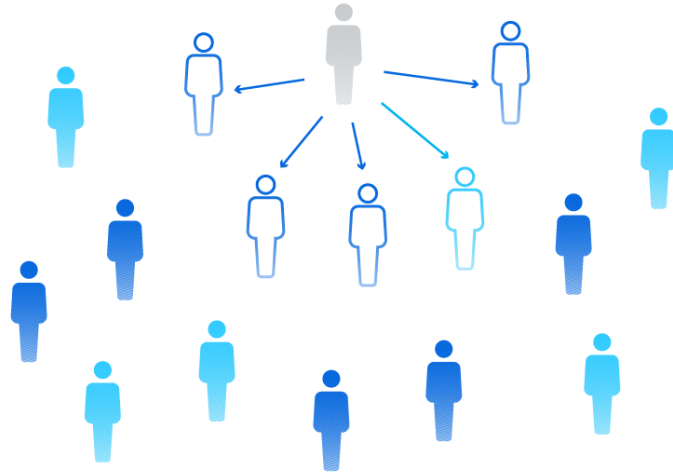


<https://www.scribbr.com/methodology/stratified-sampling/>

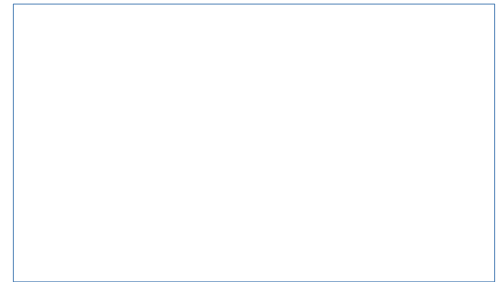


Nonprobability sampling

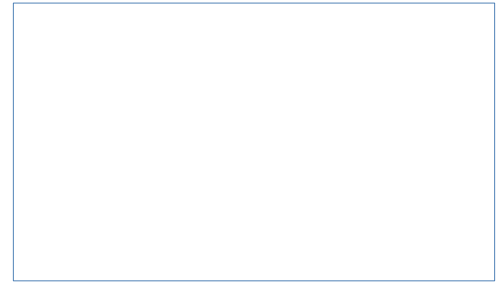
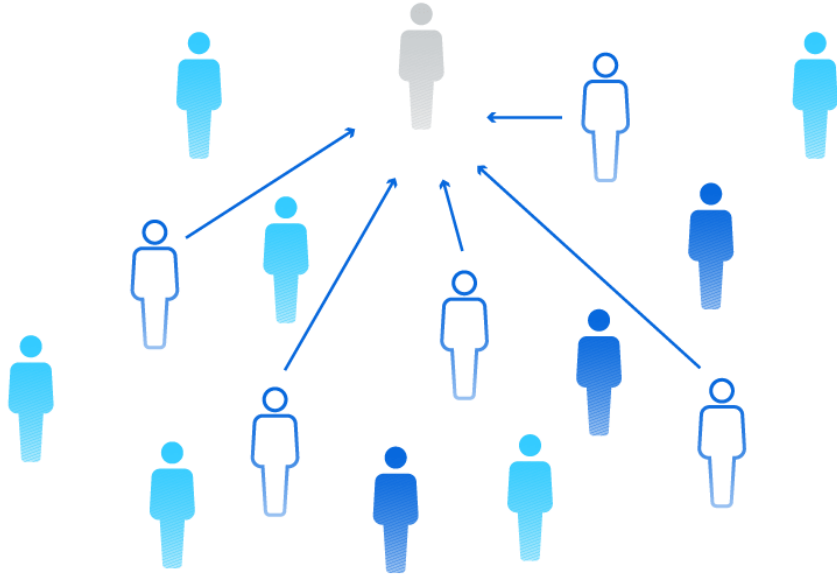
Convenience sampling



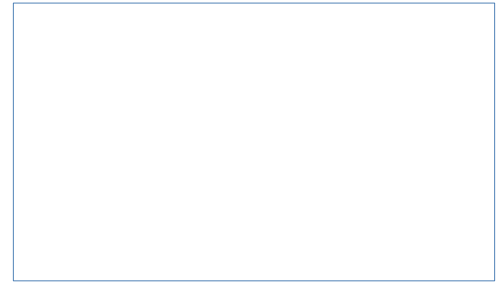
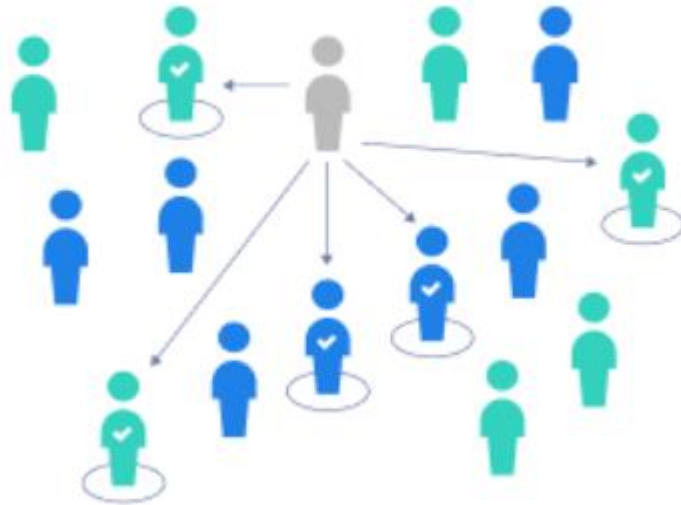
<https://www.qualtrics.com/experience-management/research/convenience-sampling/>



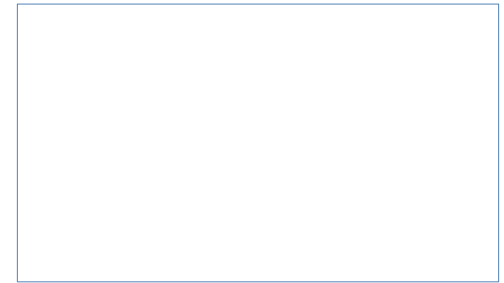
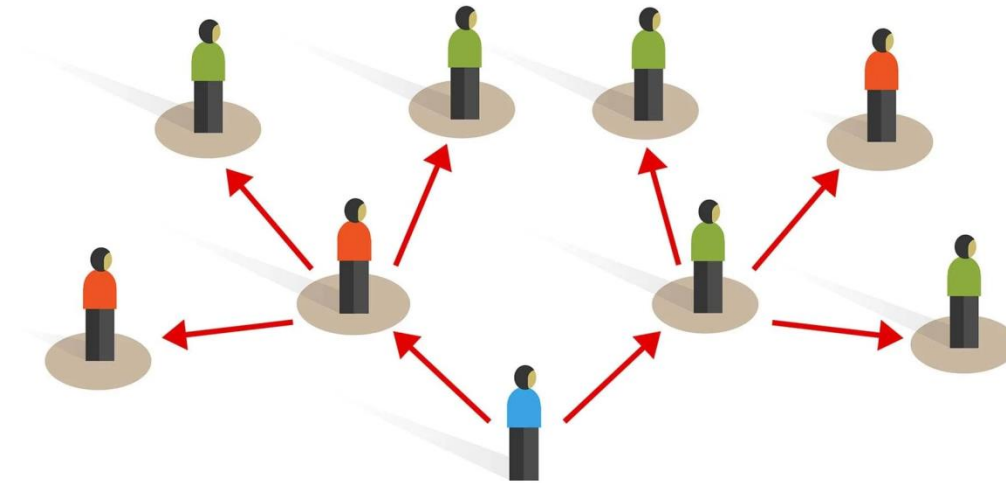
volunteer response sampling



Purposive sampling



Snowball sampling

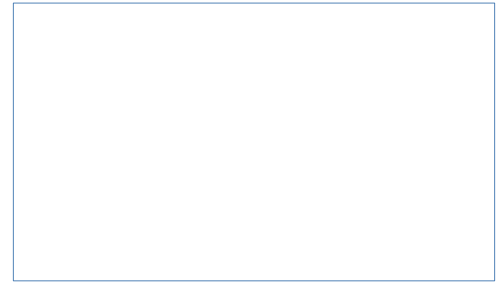


Difference between **probability** and **nonprobability** methods

probability: The researcher can apply statistical tests and generalize to the whole population

Nonprobability: such generalizations are not robust.

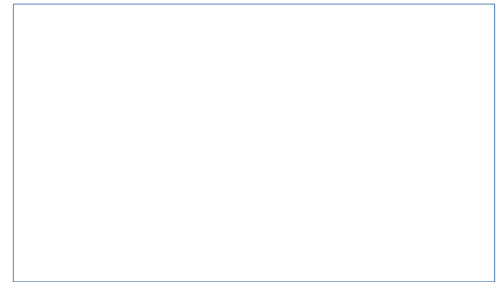
Using statistics also requires a sufficient number of participants.



3 Relationship with Participants

- Professional
- Respectful
- Informed consent
- Purpose of the data gathering
- How the data will be used

The informed consent form is intended to protect the interests of both the data gatherer and the data provider

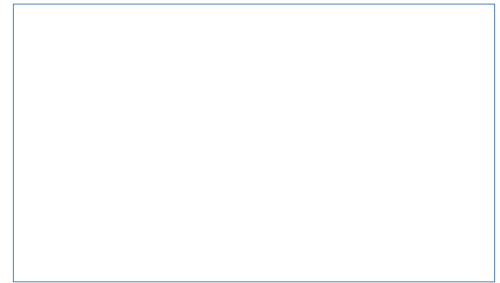


4

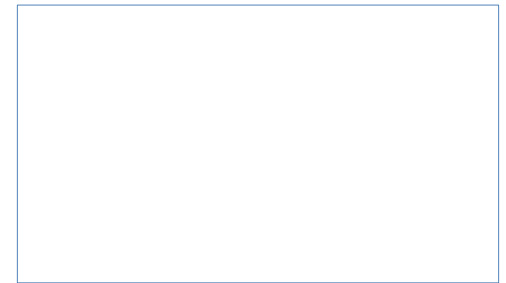
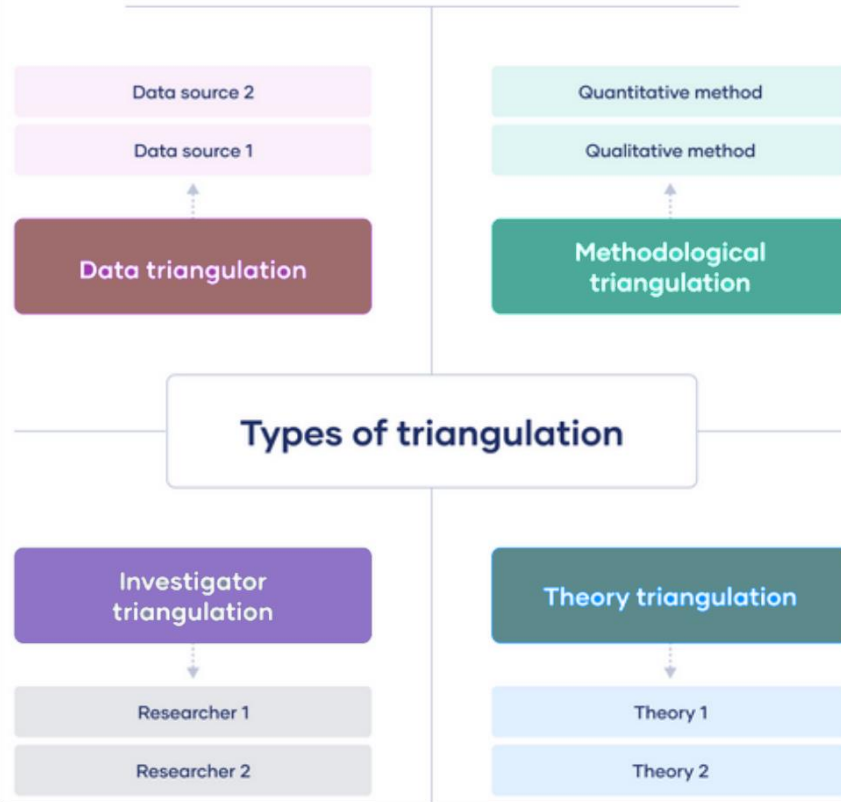
Triangulation

Triangulation is a term used to refer to the investigation of a phenomenon from (at least) two different perspectives

- Triangulation of data means that data is drawn from different sources at different times, in different places, or from different people (possibly by using a different sampling technique).
- Investigator triangulation means that different researchers (observers, interviewers, and so on) have been involved in collecting and interpreting the data.
- Triangulation of theories means the use of different theoretical frameworks through which to view the data or findings.
- Methodological triangulation means employing different data gathering techniques.



Triangulation in research

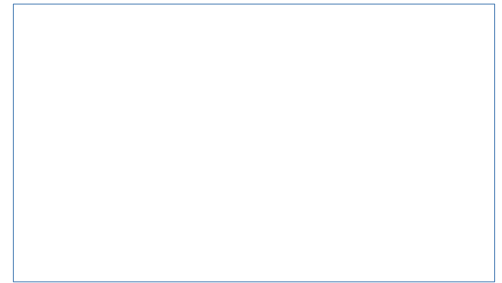


5

Pilot Studies

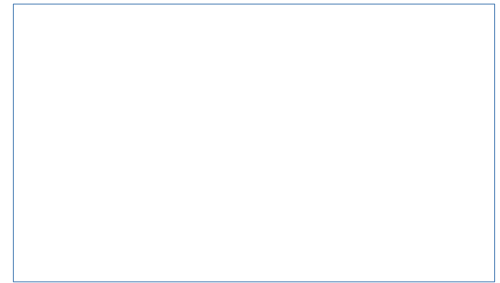
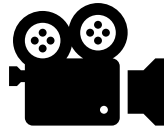
A pilot study is a small trial run of the main study.

Its purpose is to test and refine research methods, procedures, and instruments to ensure their effectiveness and feasibility. Pilot studies are often conducted with a limited sample size, which may or may not be representative of the target population.



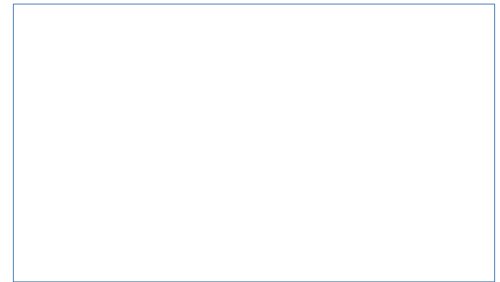
Data Documentation

- Notes + Photographs
- Audio + Photographs
- Video



Interviews

- Unstructured Interviews
- Structured Interviews
- Semi-structured Interview

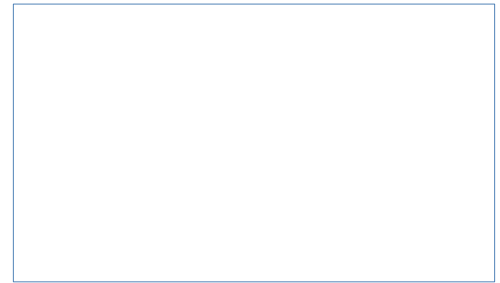


Focus Groups

A focus group is a qualitative research method that involves a small group of individuals, typically 6-10 participants, who come together to discuss a specific topic or research question under the guidance of a moderator or facilitator.

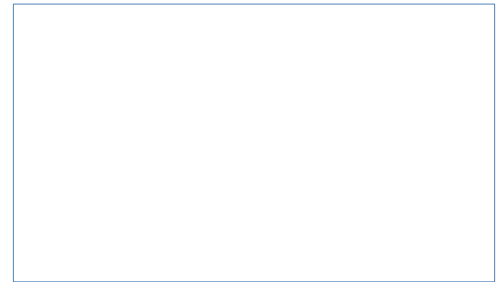
Some key points about focus groups:

- Purpose
- Group Dynamics
- Moderator/Facilitator
- Sampling Data
- Collection Analysis



Planning and Conducting an Interview

- Define your objectives
- Select your participants
- Develop an interview guide
- Consider ethical considerations
- Establish the format of the interview
- Create a comfortable environment
- Active listening and probing
- Record and document
- Reflect and analyze
- Maintain communication and gratitude



Questionnaires

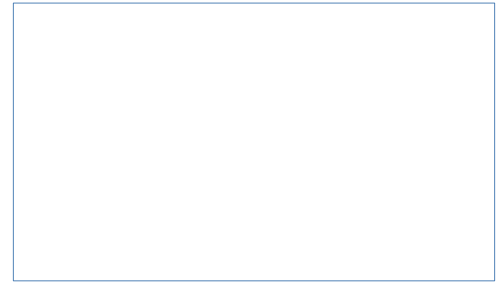
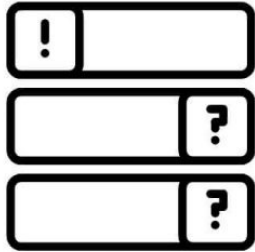
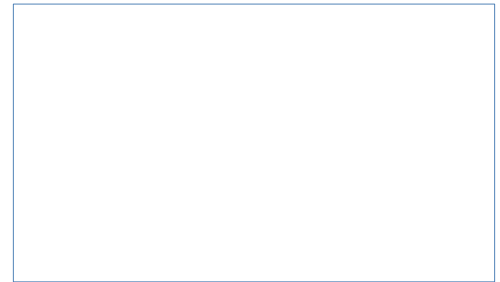


Image source: Google

Observation

Examples of **direct observation**:

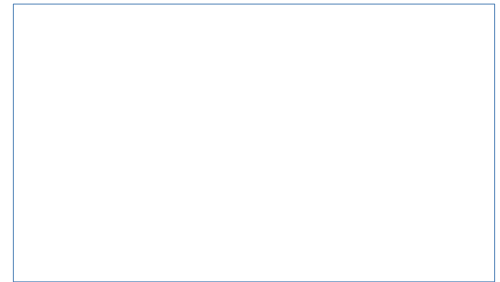
- A researcher observing children's play behaviour in a playground, noting their interactions, activities, and social dynamics.
- An ethnographer observes and documents the daily routines and rituals of a specific cultural community by actively participating in their activities.
- A usability expert observing users interacting with a website prototype in a usability testing session, noting their navigation patterns, feedback, and difficulties encountered.
- A wildlife biologist observing animal behaviour in their natural habitat, noting feeding patterns, social interactions, and territorial behaviours.



Observation

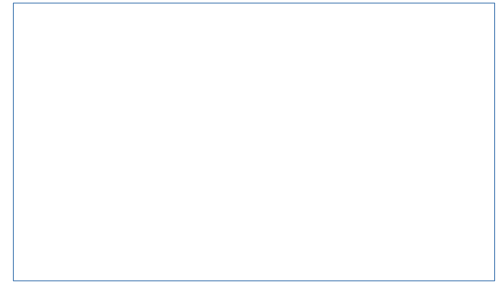
Examples of **indirect observation**:

- Tracking Users' Activities.
- Analysing surveillance camera footage to study customer flow and behaviour in a retail store.
- Review medical records and patient charts to examine the treatment outcomes and patterns of a specific medical condition.
- Analysing historical documents, such as diaries, letters, or newspapers, to understand social or cultural trends in a particular time period.
- Studying archival footage or photographs to examine historical events or social phenomena.



Other Forms of Interview

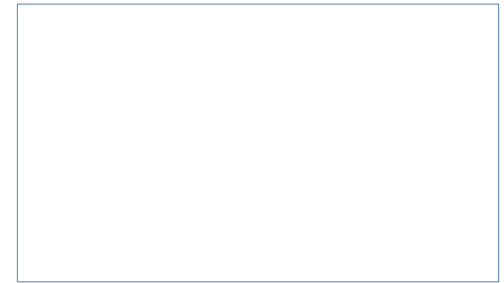
- Telephonic Interviews
- Video Interviews
- Online Surveys
- Email Interviews
- Instant Messaging and Chat Interviews



Choosing and Combining Techniques



Image source: Freepik



Thank You

