

# Moduel\_7

## Measurements, Data Collection, and Analysis

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# Data Collection

## Observation Methods and Technologies

### Naturalistic observation refers to

- participants in their most natural setting(Cherry, K. 2019, June 29).
  - create **qualitative and quantitative data**, or data that is very meaningful to the research at hand.
- help validate certain types of research. It is one thing to hypothesize a finding.

*A major downside* is that people may behave differently when they know they are being watched, which may or may not be known to the researcher at hand.

# Data Collection

## Observation Methods and Technologies

- The second method of observational research is participant observation. In this method, the observer intervenes on the environment of the participants in some way.

The observer can intervene in **two ways**:

1. **overt**, the observer reveals himself to the participants and explains the observer is there to collect data for research. This can be a great way to collect research that is otherwise rare to reproduce
2. **covert**, the observer is disguised as a participant of the study, which allows the observer to gain hands-on experience for their research. Covert participation is obviously the better method of study, however it is usually far more difficult to execute correctly compared to overt participation.

# Data Collection

## Questionnaires Design and Implementation

Survey Questionnaires are a series of questions that are prepared beforehand given to the participant.

### Advantages using questionnaires:

- being able to have several participants at once taking the survey. This allows the researcher to gather data much quicker than other observation methods such as interviews.
- An interview can be placed online, and participants from all parts of the world can complete the survey all at once.
- flexible time frames to gather data. The researcher can prepare the questions beforehand, and the questions can be answered by the participant in any given time frame.

# Data Collection

## Questionnaires Design and Implementation

Survey Questionnaires are a series of questions that are prepared beforehand given to the participant.

### Disadvantages using questionnaires:

- The integrity of the participants. A participant may not take a questionnaire as seriously as an interview. And lastly, a participant may have someone take the questionnaire for them, which will only skew the data for the researcher. It can also be difficult for some participants to answer the questionnaire questions because the researcher is not there to clarify any ambiguities (Preece, J. (2015)).

# Questionnaires Design and Implementation

**Questionnaires should be implemented in a way that produces meaningful data for the researcher.** These questions are then given to the participant (*either physical or online*) for them to answer.

Before any questions are made for the questionnaire, it is important for the researcher to understand the audience he is questioning. For instance, if the researcher wanted to know how many miles people drive on a daily basis, then questioning individuals under the age of sixteen would be a fruitless endeavor.

# Data Collection – Web-Based Questionnaires

- **Web-based questionnaires should include the following steps:**
  - The questionnaire needs to be error free, and be able to assist the participant in the event that they need it.
  - Information from each participant needs to be captured and stored confidentially, away from the view of anyone except the researcher.
  - Be sure to keep track of the data as it is being sent back to the researcher. This will help the researcher keep track of data trends within the research. Also there is a chance that the data will be lost or corrupted, so it would be in the best interest of the researcher to keep track of data progression.



# Data Collections

## Interview Techniques and Practices

- Interviews are more commonly thought of as “a conversation with a purpose.” (Becker, H. (2019).
- *Observational Method - Center for Innovation in Research and Teaching. )*  
Interviews can be conducted in a variety of different ways, but the flow of the interview and how the interview is conducted depends on the purpose of the interview.
- **There are three main types of interviews:** structured, unstructured, and group interviews.
- The type of interview can all depend on the situation and how often the interviewer is imposing on the situation.



# Data Collections

## Interview Techniques and Practices

### Structured Data

- In a structured interview, questions are standardized and the same across all participants in the study.
- This is to ensure consistent interview length and to ensure consistent interview data across all participants.
- Structured interviews often include definite answers to questions, and the questions are usually not open ended. If the answer is not available for a participant in the interview, then the “none” or “not applicable” option is usually available.



# Data Collections

## Interview Techniques and Practices

### Unstructured Data

- Unstructured interviews are the most common type of interviews, and usually involve the least amount of control by the interviewer.
- In this method of interviews, the interviewer asks questions and the answers are generally open ended and can lead to a different set of undetermined questions.



# Data Collections

## Interview Techniques and Practices

### Group Interview Data

- Group interviews are meant to involve a large amount of people and have the least amount of interaction from the interviewer.
- A group interview is a form of screening multiple participants at the same time.
- In a group interview the interviewer can observe how participants choose to stand out amongst other participants in the group interview



# Efficiency of Structured Data

- The best way to analyze consistent data amongst a wide variety of participants is to use structured interviews. In a structured interview, questions are standardized and the same across all participants in the study.
- This is to ensure consistent interview length and to ensure consistent interview data across all participants. Structured interviews often include definite answers to questions, and the questions are usually not open ended.



# Degree of Measurement

- One of the main factors that must be considered to **ensure quality results is the degree of measurement uncertainty is looking at measurement for estimates**,
- A measurement will still continue to be uncertain and will require some sort of estimation, with the implementation of the mixed measurement approach these erroneous results may be reduced. This particular measurement model approach data from the perspective of commitment to the differences among assets and liabilities.



# Quantitative & Qualitative Research

- **Quantitative Data** is defined as data that deals with quantities, values or numbers, making them measurable. generally not measurable and are usually gained through observation (Anastasia, *Overview of Qualitative And Quantitative Data Collection Methods*).
  - *Pre & Post Experimental Questioners.*
- **Qualitative data** is defined as data that is more so related to deals with quality and thus more descriptive rather than numerical in nature.
  - A one-on-one interview with a set of predetermined questions would serve as a structured way of acquiring quantitative data. This set up would also allow for the researcher to make any needed clarifications.



# Results and Findings Presentation

- The results and findings sections is where the findings of the study are reported based on the research gathered in prior sections.
- It is necessary to lay out the results in a logical order, usually chronological, so that it makes sense to the reader on how these findings came about.
  - *First approach is to present a synopsis of the results followed by key findings;*
  - *Second approach to presenting results is to present a result and then explain before moving onto another result;*
  - *Visual aids are best for complex results where the visual aids will help the reader grasp the findings. Although there simple findings where a visual aid is crucial to understanding the result*

