Unit-3

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Observation Studies -

- Systematic process of recording the behavioral pattern of people, objects & occurrences is called Observation.
- Observational studies are Qualitative in natyse,
- It is a way of collecting data through observing.
- Observation studies gather the information about behavior.

⇨ Various kinds ~~Various types~~ of observable phenomena -

1. physical action - (such as shopping patterns)
2. verbal behaviour - (conversations, ideas exchange)
3. Expressive behaviour - (tone of voice, facial expressions)
4. Spatial relations & locations - (such as traffic pattern)
5. Temporal patterns - (time spent, driving, business decision)

→ Observation method often generates data without a subject's knowledge.

→ Observation studies allow for the systematic recording of non-verbal behavior.

Mechanical Observation -

- In mechanical observations, use various types of machines to collect the data -
- It includes :

Video cameras, Traffic counters, Television monitoring, Monitoring website traffic, Audiometer, Supermarket scanner, etc.

→ Mechanical device observe the situation & behaviours accurately that are routine, repeatative or programmatic.
→ These mechanical devices installed at that places where very difficult to observe by the person.

➡ Some advance mechanical devices are -
- Measuring physiological Reactions
- ① Eye tracking monitors - observe eye movement
- ② Pupil-meters - record changes in pupils diameter.
- ③ Psychogalvanometers - measure galvanic skin response
- ④ Voice-pitch analyzer - record abnormal frecuencies in voice

Experimental Research - & its types -
- Experimental Research is used to gather the necessary data that helps to make better decision.

- Experimental Research is a scientific & Systematic method of research.
- Researcher manipulates Independent variable on Dependent variable to see its effect.

⇨ Characteristics of E.R :-
- ① Control - Researcher try to control the factor that affects.
- ② Manipulate - Apply Independent variable on Dependent variable.
- ③ Observation - Observe the behavior of the cause/factor.
- ④ Replication - Researcher repeate the research & overcome to the factor.

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⇨ 3 types of Experimental Research -

① Pre-experimental Research -
→ It is the simplest form of experimental research.
→ A group or various groups kept under the observation ~~of~~ after factors are considered & see the cause and effect.

② True-Experimental Research -
→ This research is based on statistical analysis.
→ It is the most accurate form of exper. research. (Gives accurate result.)

③ Quasi-Experimental Research -
- It is similar to experimental, but not the same.
- In this experiment, control group is assigned.
- Independent variable is manipulated, but the participant group are not randomly assigned.
- It is used where random assignment is not required.

Demand Characteristics -
→ Dem. chara. indicate the study aims to the participants.
→ This indication indicate the participant to change their behavior & response based on research.
→ Researcher act & support the aim of the research, that comes under demand characteristics.
→ Researcher can't reveal their research hypothesis, until he reached some valid decision.

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⇨ 3 basic characteristics of Demand characteristics -

(1) Position
(2) Slop
(3) Shift

} showing by graph.

⇨ How to avoid Demand Characteristics -

(1) Hide the purpose of research from participants
(2) Give only one independent variable to each participant.
(3) Assignment of groups hide from participant & yourself.

Unit-4

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Measurement Scale → (4 types)
- ① Nominal scale
- ② Ordinal "
- ③ Interval "
- ④ Ratio "

⇒ **Measurement** →
Assigning numbers to to the objects or observations.
(Assiring number in meaningful way to understand measurement scale to people, events & object.)

① Nominal Scale -
→ A system of assigning numbers, symbols to events in order to label them.

e.g → - Product serial number
- Number given on shirt of cricket players.

② Ordinal Scale -
→ Ordinal scale basically works on rank.

e.g → - Examination result showing the rank of students.

③ Interval Scale - (group/category)
→ Assigning the number or symbol to the events in an order.
→ Difference b/w two groups/events/category is equal.

e.g → Assign the number to group A from 1 to 10.
& group B from 11 to 20.
So, difference b/w group A & B is same.

④ Ratio Scale –

→ Ratio scale is same as the Interval scale, but in which addition of zero point.

e.g → - weight - speed
- Area - Velocity.

Questionnaire Design & its steps –

➡ Questionnaire Design –

→ It is a systematic data collection technique.

→ It consists a series of questions required to be answer by the participants / respondents.

→ Using this technique, identifying the respondent's attitude, experience & behavior towards the subject of research.

➡ Steps of Questionnaire design process –

① Specify the information needed

8B.4 Questionnaire Design

Questionnaire is a systematic, data collection technique consists of a series of questions required to be answered by the respondents to identify their attitude, experience, and behavior towards the subject of research.

The following steps are involved in the questionnaire design process:

1. **Specify the Information Needed:** The first and the foremost step in designing the questionnaire is to specify the information needed from the respondents such that the objective of the survey is fulfilled. The researcher must completely review the components of the problem, particularly the hypothesis, research questions, and the information needed.

2. **Define the Target Respondent:** At the very outset, the researcher must identify the target respondent from whom the information is to be collected. The questions must be designed keeping in mind the type of respondents under study. Such as, the questions that are appropriate for serviceman might not be appropriate for a businessman. The less diversified respondent group shall be selected because the more diversified the group is, the more difficult it will be to design a single questionnaire that is appropriate for the entire group.

3. **Specify the type of Interviewing Method:** The next step is to identify the way in which the respondents are reached. In personal interviews, the respondent is presented with a questionnaire and interacts face-to-face with the interviewer. Thus, lengthy, complex and varied questions can be asked using the personal interview method. In telephone interviews, the respondent is required to give answers to the questions over the telephone. Here the

8B.3.2 Likert Scale

A Likert scale is a psychometric scale commonly used in questionnaires, and is the most widely used scale in survey research. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. The scale is named after its inventor, psychologist Rensis Likert. The Likert scale can also be used to measure attitudes of people. When responding to a Likert questionnaire item, respondents specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements. Thus, the range captures the intensity of their feelings for a given item.

Definition:

A measure of attitudes designed to allow respondents to rate how strongly they agree or disagree with carefully constructed statements, ranging from very positive to very negative attitudes toward some object.

	Disagree	Disagree	Neutral	Agree	Agree
I believe face-to-face learning is more effective than online learning.	○	○	○	○	◉
I am comfortable with self-directed learning.	○	○	◉	○	○
I do not resist having my lessons online.	○	◉	○	○	○
I like online learning as it provides richer instructional content.	○	○	○	◉	○
I would like lecture time in the classroom to be reduced.	◉	○	○	○	○