

The Research Process: An Eight step Model

2. Conceptualizing a research design

1. The Research Design

2. Selecting a study design

2.1 The Research Design

❖ A traditional research design is a blue print or a detailed plan for how a research study is to be completed. It includes:

1. Operationalizing variables so that they can be measured
2. Selecting a sample of interest to study
3. Collecting data to be used as a basis for testing hypothesis
4. Analyzing the results

2.2 Selecting a study design

A study design can be classified into 3 major categories.

1. Study design based on the number of contacts with the study population
 1. The cross-sectional study design
 2. The before-and-after study design
 3. The longitudinal study design
2. Study design based on the reference period
 1. The retrospective study design
 2. The prospective study design
 3. The retrospective-prospective study design
3. Study design based on the nature of investigation
 1. The experimental study design
 2. The non-experimental study design
 3. Quasi or semi-experimental study design

2.2 Selecting a study design

Study design based on the number of contacts with the study population

1. The cross-sectional study design

1. Best suited to studies aimed at finding out the prevalence of a phenomenon
2. You decide what you want to find out
3. Identify the study population
4. Select a sample and contact the respondents to find out the required information.

Examples:

1. The extent of unemployment in a city
2. The attitudes of students towards the facilities available in their labs
3. The health needs of flood affectees

2.2 Selecting a study design

Study design based on the number of contacts with the study population

2. The before-and-after study design

1. Also known as pre-test/post-test design
2. It can measure change in a situation, phenomenon, issue, problem or an attitude
3. it can be described as two sets of cross-sectional data collection points on the same population to find out the change in a phenomenon between two points in time (i.e. “before” and “after”)
4. The change is measured by comparing the difference in the phenomenon or variables before and after the intervention.

Examples:

1. The impact of increased funding on the quality of teaching in universities
2. The impact of incentives on the productivity of employees in an organization

2.2 Selecting a study design

Study design based on the number of contacts with the study population

3. The longitudinal study design

1. The before-and-after study design is appropriate for measuring the extent of change in a phenomenon, but is less helpful for studying the pattern of change.
2. To determine the pattern of change in relation to time, a longitudinal design is used.
3. Is used when you need to collect factual information on a continuing basis
4. The study population is visited a number of times at regular intervals to collect the required information

Examples:

1. Proportion of people adopting a program with respect to time. Like, people registering for digital CNICs by NADRA over a period of time etc.

2.2 Selecting a study design

Study design based on the reference period

1. Retrospective study design

1. Retrospective studies investigate a phenomenon, situation, problem, or issue that has happened in the past.
2. E.g. utilization of land before World War II in Germany, condition of forests in AJK before earthquake etc.

2. Prospective study design

1. Prospective study design refer to the likely prevalence of a phenomenon, situation, problem, attitude or outcome in the future.
2. Such studies attempt to establish the outcome of an event or what is likely to happen
3. E.g. to measure the effects of a change in labor laws in Pakistani industry, to measure the effects of eradication of school uniform etc.

2.2 Selecting a study design

Study design based on the reference period

1. Retrospective –prospective study design
 1. Retrospective-prospective study design focus on past trends in a phenomenon and study it into the future.
 2. E.g. customer churn prediction, forecasting stock markets, machine intelligence etc.

2.2 Selecting a study design

Study design based on the nature of investigation

1. Experimental

1. If a relationship is studied by starting from the cause to establish the effects, it is called experimental study
2. The independent variables can be observed, introduced, manipulated, or controlled by the researcher or someone else.

2. Non-experimental

1. If a study focuses on starting from the effects to trace the cause, it is classified as a non-experimental study.
2. Variables can not be introduced/manipulated etc. As the assumed cause has already occurred. Instead, the researcher retrospectively links the cause to the outcome

3. Quasi or semi-experimental

1. A mixture of traits of both experimental and non-experimental study designs.

3. Constructing an instrument for data collection

Data can be collected from the following two sources:

- **Primary Sources**
 - Observation and Experimentation
 - Interview
 - Questionnaire
- **Secondary Sources**
 - Publications
 - Earlier Research
 - Mass Media

3. Constructing an instrument for data collection contd..

- Observation and Experimentation

Types of Observations

1. Participant Observation

- » When a researcher participate in the activities of the group being observed in the same manner as its members.
- » E.g when you want to study the life of a prisoner, and become prisoner yourself etc.

2. Non-participant Observation

- » When a researcher does not gets involved in the activities of the group but remains a passive observer.
- » E.g. monitoring stock market behavior, scientific experiments etc.

3. Constructing an instrument for data collection contd..

- **Interviews**

Any person-to-person interaction between two or more individuals with a specific purpose in mind is called an interview.

Types of interviews

- 1. Structured Interviews**

- When a researcher asks a predetermined set of questions using the same wording and order of questions as specified in the interview schedule.
- E.g interviewing some important personality on television.

- 2. Unstructured Interviews**

- The strength of unstructured interviews is the complete freedom they provide in terms of content and structure.
- You are free to arrange it in whatever sequence you wish.
- You have complete freedom in terms of wordings and raising issues.
- It has four types:
 1. In-depth interviews
 2. Focus group interviews
 3. Narratives
 4. Oral histories

3. Constructing an instrument for data collection contd..

1. In-depth interviews

- Involves face-to-face, repeated interaction between the researcher and his/her informant.
- The purpose is to understand the informant's perspectives.

2. Focus group interviews

- You explore the perceptions, experiences and understanding of a group of people who have some experience in common. Everything else is the same as in in-depth interview.

3. Narratives

- Has no predetermined contents except that the researcher seeks to hear the personal experience of a person with an incident or happening in his/her life.
- You let the person talk freely without interrupting.
- Best method of data collection for situations which are sensitive in nature.

3. Constructing an instrument for data collection contd..

4. Oral histories

- Oral histories are almost like the narratives except that they are more commonly used for learning about a historical event or episode that took place in the past;
- or for gaining information about a cultural custom or story that has been passed from generation to generation.
- Narratives are more about a person's personal experiences whereas, historical, social or cultural events are the subjects of oral histories.

3. Constructing an instrument for data collection contd..

- Questionnaire
 - A questionnaire is a written list of questions, the answers to which are recorded by respondents.
 - The only difference between an interview schedule and a questionnaire is that in the former it is the interviewer who asks the questions and records the respondents replies , and in the latter replies are recorded by the respondents themselves.
 - Which type of interview does a questionnaire closely resemble ?

4. Writing a Research proposal

5. Sampling