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Sneha Singh
Assistant Professor
PG DEPARTMENT OF
SOCIOLOGY

[RESEARCH DESIGN]

The research design is considered to be the blueprint of any research process. The paper will well explain the need of research design, the importance and the types of research design

Research Design

The formidable problem that follows the task of defining the research problem is the preparation of the design of the research project, popularly known as the “research design”.

Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design.

“A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to- combine relevance to the research purpose with economy in procedure.”

Kumar (1999) stated that a research design is a procedural plan that is adopted by researchers to answer questions objectively, accurately, economically and with validity.

A traditional research design is a blueprint or detailed plan of how a research study is to be completed; operating variables for measurement, selecting a sample, collecting data and analysing the results of interest to the study, and testing the hypotheses (**Thyer, 1993**).

In the most elementary sense, the design is the logical sequence that connects the empirical data, research questions and conclusions (**Yin, 2002**).

Bryman & Bell (2007) stressed that research design should provide the overall structure and orientation of an investigation as well as a framework within which data can be collected and analyzed.

- In fact, **the research design is the conceptual structure** within which research is conducted;
- **it constitutes the blueprint for the collection, measurement and analysis of data.**

As such the design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of data.

More explicitly, **the design decisions** happen to be in respect of:

(i) *What is the study about?*

(ii) *Why is the study being made?*

(iii) *Where will the study be carried out?*

(iv) *What type of data is required?*

(v) *Where can the required data be found?*

(vi) *What periods of time will the study include?*

(vii) What will be the sample design? ,

(viii) What techniques of data collection will be used?

(ix) How will the data be analyzed?

(x) In what style will the report be prepared?

Keeping in view the above stated design decisions; one **may split the overall research design into the following parts:**

(a) **the sampling design**

Which deals with the method of selecting items to be observed for the given study; the observational design which relates to the conditions under which the observations are to be made?

(b) **the statistical design**

Which concerns with the question of how many items are to be observed and how the information and data gathered are to be analyzed; and

(c) **The operational design**

Which deals with the techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out?

Important features of a research design as under:

(i) It is a **plan** that specifies the sources and types of information relevant to the research problem.

(ii) It is a **strategy** specifying which approach will be used for gathering and analyzing the data.

(iii) It also **includes the time and cost budgets**, since most studies are done under these two constraints.

In brief, research design must, at least, contain –

(a) A clear statement of the research problem;

(b) Procedures and techniques to be used for gathering information;

(c) The population to be studied; and

(d) Methods to be used in processing and analyzing data.

Need for Research Design

Research design is needed because it facilitates the

- smooth sailing of the various research operations,
- Thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money.
- Just as for better, economical and attractive construction of a house, we need a blueprint (What is commonly called the map of the house) well thought out and prepared by an expert architect, similarly we need a research design or a plan in advance of data collection and analysis for our research project.
- Research design stands for advance planning of the methods to be adopted for collecting the relevant data and the techniques to be used in, keeping in view the objective of the research and the availability of staff, time and their analysis money.
- Preparation of the research design should be done with great care as any error in it may upset the entire project.
- Research design, in fact, has a great bearing on the reliability of the results arrived at and as such constitutes the firm foundation of the entire edifice of the research work.

Features of a Good Design

A good design is often characterized by adjectives like flexible, appropriate, efficient, and economical and so on. Generally, the design which minimizes bias and maximizes the reliability of the data collected and analyzed is considered a good design. One single design cannot serve the purpose of all types of research problems.

A research design appropriate for a particular research problem, usually involves the consideration of the following factors:

- (i) The means of obtaining information:
- (ii) The availability and skills of the researcher and his staff, if any;
- (iii) The objective of the problem to be studied;
- (iv) The nature of the problem to be studied; and
- (v) The availability of time and money for the research work.

Different Research Designs

Different research designs can be conveniently described if we categorize them as:

- (1) Research design in case of exploratory research studies;
- (2) Research design in case of descriptive and diagnostic research studies, and
- (3) research design in case of hypothesis-testing research studies.

The difference between research designs in respect of the above two types of research studies can be conveniently summarized in tabular form as under:

Research Design	Types of Study	
	Exploratory or Formulative	Descriptive / Diagnostic
Overall design	Flexible design (design must provide opportunity for considering different aspects of the problem)	Rigid design (design must make enough provision for protection against bias and must maximise reliability)
(i) Sample Design	Non-probability sampling design (purposive or judgement sampling)	Probability sampling design (random sampling)
(ii) Statistical Design	No pre-planned design for analysis	Pre-planned design for analysis
(iii) Observational design	Unstructured instruments for collection of data	Structured or well thought out instruments for collection of data
(iv) Operational design	No fixed decisions about the operational procedures	Advanced decisions about operational procedures.

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John .w. creswell