Business Research Methodology

Chapter- Research Design
(M. Com - IV Semester)

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What is Research Design?

Design, at a basic level, means planning. Generally, some decisions are to be taken before the actual action. 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.

Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design. It is a process of deliberate anticipation directed towards bringing an expected situation under control. Thus, Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The plan is the overall scheme or program of the research. It includes an outline of what the investigator will do from the selection of research problem to the conclusion of the research study. More precisely, the design decisions happen to be in respect of:

- What is the study about?
- Why is the study being made?
- Where will the study be carried out?
- What type of data is required?
- Where can the required data be found?
- What periods of time will the study include?
- What will be the sample size?
- What techniques of data collection will be used?
- What statistical techniques will be used for data analysis.
- In what style will the report be prepared?
- And how the research purpose can be achieved with minimum expenditure of money, time and energy.

Contents of Research Design:

The most common aspects involved in research design include at least followings:

1. Statement of research objectives, i.e., why the research project is to be conducted
2. Type of data required for research
3. Constitution of sample size and its procedure out of total population
4. Time, costs, and responsibility specification
5. Methods and procedures used for collection of data
6. Data analysis: tools and techniques used to analyse data
7. Probable output or research outcomes and expected actions to be taken based on those outcomes.

Research design can be split into four phases:

In order to understand the research design concept, we can go through following four phases-

1. **The sampling design:** It deals with the method of selecting items to be observed for the given study;
2. **The observational design:** It relates to the conditions under which the observations are to be made;
3. **The statistical design:** It deals with the question of how many subjects are to be observed and how the observations are to be analysed; and
4. **The operational design:** It deals with the specific techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out.

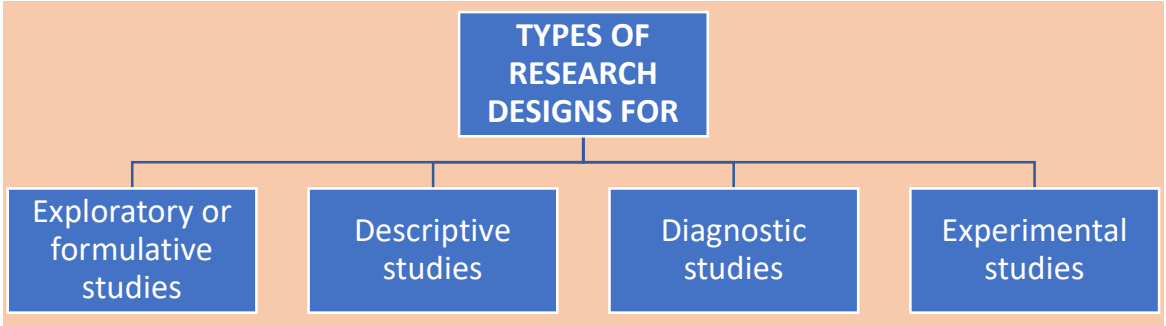
Advantage / Need of Research Design:

A research design is the set of methods and procedures used in collecting and analysing measures of the variables specified in the research problem. Research design is needed because it facilitates the smooth and effective sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money. Following are the key advantages of formulating research design-

1. Proper utilization of research time.
2. Ensures research time schedule.
3. Helps researcher to prepare himself to carry out research in a proper and a systematic manner.
4. Better documentation of the various activities while the research work is going on.
5. Helps in proper planning of the resources and their procurement in right time.
6. Provides satisfaction and confidence, accompanied with a sense of success from the beginning of the work of the research activity.

TYPES OF RESEARCH DESIGNS

As per the need of the study, research design may be categorised as follows-



1. **Research Design in case of Exploratory or formulative studies:** Exploratory research studies are also termed as formulative research studies. The main purpose of such studies is that of formulating a problem for more precise investigation or of developing the working hypotheses from an operational point of view. The major emphasis in such studies is on the discovery of ideas and insights. As such the research design appropriate for such studies must be flexible enough to provide opportunity for considering different

aspects of a problem under study. Exploratory designs are often used to establish an understanding of how best to proceed in studying an issue or what methodology would effectively apply to gathering information about the issue.

This design is followed to discover ideas and insights to generate possible explanations. It helps in exploring the problem or situation. It is, particularly, emphasized to break a broad vague problem statement into smaller pieces or sub-problem statements that help forming specific hypothesis. The exploratory research design is used to increase familiarity of the analyst with problem under investigation. This is particularly true when researcher is new in area, or when problem is of different types.

The major property of exploratory research design:

- Clarifying concepts and defining problem
- Formulating problem for more precise investigation
- Increasing researcher's familiarity with problem
- Developing hypotheses
- Establishing priorities for further investigation

Exploratory research design is characterized by flexibility to gain insights and develop hypotheses. It does not follow a planned questionnaire or sampling. It is based on literature survey, experimental survey, and analysis of selected cases. Unstructured interviews are used to offer respondents a great deal of freedom.

2. **Research Design in case of Descriptive studies:** Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group. Descriptive research designs help in providing answers to the questions of who, what, when, where, and how associated with a particular research problem. A descriptive study cannot conclusively ascertain answers to why. Descriptive research is used to obtain information concerning the current status of the phenomena and to describe "what exists" with respect to variables or conditions in a situation.

   Thus, descriptive research design is more specific and purposive study. Before rigorous attempts are made for descriptive study, the well-defined problem must be on hand. It is important to notice that in descriptive study the researcher must have a deep knowledge on the issues and problems. Descriptive study rests on one or more hypotheses.
3. **Research Design in case of Diagnostic studies:** Diagnostic research studies determine the frequency with which something occurs or its association with something else. The studies concerning whether certain variables are associated are examples of diagnostic research studies. From the point of view of the research design, the descriptive as well as diagnostic studies share common requirements. In descriptive as well as in diagnostic studies, the researcher must be able to define clearly, what he wants to measure and must find adequate methods for measuring it along with a clear-cut definition of 'population' he wants to study. The research design must make enough provision for protection against bias and must maximise reliability, with due concern for the economical completion of the research study. The design in such studies must be rigid and not flexible.

The above discussion on different types of research design may summarize in the following chart-

Research Design	*Type of study*	
	Exploratory of 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) Sampling 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.

4. **Research Design in case of Casual or Experimental studies:** Causal research design deals with determining cause and effect relationship. It is typically in form of experiment. In causal research design, attempt is made to measure impact of manipulation on independent variables (like price, products, advertising and selling efforts or marketing strategies in general) on dependent variables (like sales volume, profits, brand image and brand loyalty). It has more practical value in resolving marketing problems. We can set and test hypotheses by conducting experiments.
   Experimental design refers to the framework or structure of an experiment and as such there are several experimental designs. We can classify experimental designs into two broad categories, viz., **Informal experimental designs** and **Formal experimental designs**. Informal experimental designs are those designs that normally use a less sophisticated form of analysis based on differences in magnitudes, whereas formal experimental designs offer relatively more control and use precise statistical procedures for analysis.

CONCLUSION

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

Research design is needed because it facilitates the smooth and effective sailing of the various research operations, thereby making research as efficient as possible yielding maximal

information with minimal expenditure of mind, money and time. There are several research designs and the researcher must decide in advance of collection and analysis of data as to which design would prove to be more appropriate for his research project. Researcher must give due weight to various points such as the type of universe and its nature, the objective of his/her study, the resource list or the sampling frame, desired standard of accuracy and the like when taking a decision in respect of the design for his/her research project.