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## CONCEPTS AND TYPE OF RESEARCH DESIGN

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**Abstract-** A research is valid when a conclusion is accurate or true and research design is the conceptual blueprint within which research is conducted. A scholar for his research, prepare an action plan, it constitutes the outline of collection, measurement and analysis of data. Research design is not associated to any particular technique of data collection or any particular type of data. When designing research it is necessary that we recognize the type of evidence required to answer the research question in a reasonable way.<sup>1</sup>

Research design refers to the framework of market research methods and techniques that are chosen by the researcher. The design that is chosen by the researchers allow them to utilize the methods that are suitable for the study and to set up their studies successfully in the future as well.

**Keywords** – Research design, Concepts of Research design and Types of Research design

### Introduction

#### Meaning of Research Design

A research design is a controlling plan for a research study in which the methods and procedures for collecting and analyzing the information to be collected is specified. It is a framework or plan for study that guides the collection and analysis of data.

The word ‘design’ means to work out the structure of form’, as by making a sketch or plan. Thus, ‘Research Design’ is planning a strategy or drawing a blue print of conducting research. It is a guideline for collecting and utilizing data so that desired information can be obtained with sufficient precision and hypothesis can be tested properly. A research is designed for the purpose of producing results that may be applied to real world situations. It not only enables a researcher to anticipate potential problems that can occur during the actual operation of the research, but also to limit boundaries of research study.

## **Definitions of Research Design**

Some of the popular definitions of research design are:

1. “Research design is the planned sequence of the entire process involved in conducting a research study.” By Miller.
2. “Research design is a catalogue of the various phases and facts relating to the formulation of a research effort. It is an arrangement of the essential conditions for collection and analysis of data in a form that aims to combine relevance to research purpose with economy in the procedure”. By Selltitz and others.
3. “A research designates the logical manner in which individuals or other units are compared and analyzed, it is the basis of making interpretations from the data”. By Anonymous.
4. “Also known as a market research briefing, this is a basic plan which guides the data collection and analysis phased of the research project. It acts a frame work which details the type of information to be collected, the data sources and the data collection procedure”. By Market Intelligence Group, India

In short, research design is a plan of what data to gather, from whom, how and when to collect the data, and how to analyze the data obtained.

## **Important Concepts Relating To Research Design**

### **1. Dependent and independent variables:**

A concept which can take on different quantitative values is called a variable. Example: weight, height, income, etc A continuous variable is that which can assume any numerical value within a specific range. A variable for which the individual values fall on the scale only with distinct gaps is called a non-continuous or discrete variable. Age is an example of continuous variable, but the number of children is an example of non-continuous variable. If one variable depends upon or is a consequence of the other variable, it is termed as a dependent variable. The variable which is independent of other variables but on which other variables depend is termed as an independent variable. Example: if we say that height depends upon age, then height is a dependent variable and age is an independent variable.

### **2. Extraneous variables:**

Independent variables that are not related to the purpose of the study, but may affect the dependent variable are termed as extraneous variables. Suppose the researcher wants to test the hypothesis that there is a relationship between children`s gains in social studies achievements and their self-concepts. A study must always be so designed that the effect upon the dependent variable is attributed entirely to the independent variable(s), and not to some extraneous variable or variables.

### **3. Control:**

One important characteristic of good research design is to minimise the influence or effect of extraneous variable's. The technical terms 'control' is used when we design the study minimising the effects to extraneous independent variables. In experimental researches, the term 'control' is used to refer to restrain experimental conditions.

### **4. Confounded Relationship:**

When the dependent variable is not free from the influence of extraneous variable(s), the relationship between the dependent and independent variables is said to be confounded by an extraneous variable(s).

### **5. Research Hypothesis:**

When a prediction or a hypothesised relationship is to be tested by scientific methods, it is termed as research hypothesis. Predictive statements which are not to be objectively verified or the relationships that are assumed but not be tested, are not termed research hypothesis.

### **6. Experimental and Not-Experimental Hypothesis-Testing Research:**

When the purpose of research is to test a research hypothesis, it is termed as hypothesis-testing research. It can be of the experimental design or of the non-experimental design. Research in which the independent variable is manipulated is termed 'experimental hypothesis-testing research' and a research in which an important independent variable is not manipulated is called 'non-experimental hypothesis-testing research'.

### **7. Experimental and Control Groups:**

In an experimental hypothesis-testing research when a group is exposed to usual conditions, it is termed a 'control group', but when the group is exposed to sum novel or special condition, it is termed as 'experimental group'.

### **8. Treatments:**

The different conditions under which experimental and control groups are put are usually referred to as 'treatments'.

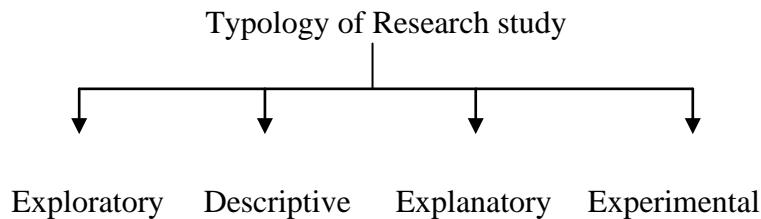
### **9. Experiment:**

The process of examining the truth of a statistical hypothesis, relating to som research problem, is known as an experiment.

## 10. Experimental Units(s):

The pre-determined plots or the blocks, where different treatments are used, are known as experimental units. Such experimental units must be selected (defined) very carefully.

### Types of Research Design



#### Exploratory Research

It is the primary stage of research and the purpose of this research is to achieve new insights into a phenomenon. This research is one which has the purposes of formulating a problem for more accurate investigating a problem for more accurate investigation or for developing a hypothesis. This is applied when there are few or no earlier research/studies to which references can be made for information. The focus of this research is on gaining insights and familiarity with the subject area for more rigorous investigation later. Exploratory studies are usually more appropriate in case of problem about which little research knowledge is available, for instance, there is little knowledge available about social interaction pattern of members of a most monastery an enterprising researcher may be interested in such a problem to obtain insights in the face of little knowledge available about it.<sup>18</sup>

#### Descriptive Research

It is also known as statistical research, this describes phenomena as they exist. It is used to identify and obtain information on characteristic of a particular issue like community, group or people. In other words, we can say that this type of research describes social events, social structure, social situations, etc. The observer observe and describe what did he find? Descriptive research answers the questions, what, who, where, how and when. It is used to study the current situation. It is widely used in the physical and natural science. But it is used more common in the social sciences, as in socioeconomic survey and job and activity analysis.<sup>23</sup>

#### Explanatory Research Design

When the purpose of the study is to explore a new universe, one that has not been studied earlier, the research design is called explanatory. The research is mainly concerned with causes or „why“ factor about some phenomenon. It does not involve comparison and factors of change.<sup>28</sup> For instance, research on „violence against bloomed“ conducted by this author described not only varieties of violence like criminal assault, lettering, kidnapping, murder, dourly death, etc. but also explain why men commit violence because of personality traits like dominance, suspicion, possession, etc. and situational factors like resourcefulness, alcoholism, maladjustment strains, and stresses, and so on.

## Experimental Research Design

The Research design that is used to test a Research Design of causal relationship under controlled situation is called experimental design. We should remember that an experiment is an observation under controlled conditions or in other words, we can say that it is a design in which some of the variables being studied are manipulated or which seek to control the condition within which persons are observed. Controlling of conditions means that the phenomenon or the condition should not be allowed to change while the experimentation is going on. In experimentation, various types of evidence have to be, controlled so that the alternative hypothesis can be tested, and causal relationship may be found out.

## Conclusion

From the above defined notes we can say that design means “drawing an outline” or arranging or planning details. It is the method of building decisions before a situation arises in which the decision has to be carried out.<sup>37</sup> Research design is the preparation of a strategy of conducting research these are the important points to be considered in formulating any research. All these steps are to be put on paper to avoid ambiguity at a later stage. The work in research design, thus starts after the selection of problem and ends before collection of data. The gap between two should be bridged carefully with a well planned research design.

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