

# A REVIEW ON RESEARCH DESIGN AND ITS IMPORTANT PARAMETERS

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## ABSTRACT

A research design is a framework or blueprint for conducting the marketing research project. It details the procedures necessary for obtaining the information needed to structure or solve marketing research problems. Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design. 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. The purpose of this paper is to study important parameters related with research design.

**Keywords:** Components of Research Design, Classification, Differences in Research Design, Methods, Uses and Errors in research design

## I INTRODUCTION

“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.” In fact, the research design is the conceptual structure and usually helpful to 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”<sup>1</sup>. Research design stands for advance planning of the methods to be Adopted for collecting the relevant data and the techniques to be used in their analysis, keeping in View the objective of the research and the availability of staff, time and 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.<sup>2</sup>

## II TYPES OF RESEARCH DESIGN

- (a) **The sampling design:** which deals with the method of selecting items to be observed for the Given study
- (b) **The observational design:** which relates to the conditions under which the observations are to be made?
- (c) **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 analysed

(d) **The operational design:** which deals with the techniques by which the procedures specified? In the sampling, statistical and observational designs can be carried out.<sup>3</sup>

### III COMPONENTS OF A RESEARCH DESIGN

- Define the information needed
- Design the exploratory, descriptive, and/or causal phases of the research
- Specify the measurement and scaling procedures
- Construct and pretest a questionnaire (interviewing form) or an appropriate form for data collection
- Specify the sampling process and sample size
- Develop a plan of data analysis

#### 3.1 A Classification of Marketing Research Designs

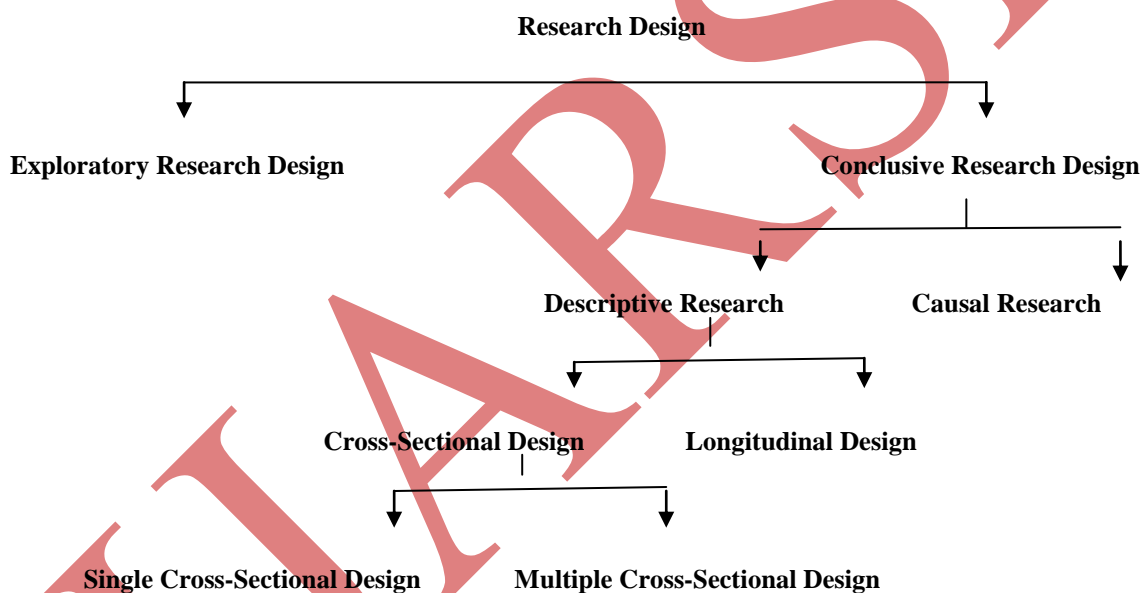


FIG: By Naresh k. Malhotra Ch-3 Marketing Research in 2007

#### 3.2 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,
- (3) Research design in case of hypothesis-testing research studies.

##### 3.2.1 Research design in case of exploratory research 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<sup>2</sup>

### 3.2.2 Research design in case of descriptive and diagnostic research studies

Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group, whereas diagnostic research studies determine the frequency with which something occur or its association with something else. The studies concerning whether certain variables are associated are examples of diagnostic research studies.

*The design in such studies must be rigid and not flexible and must focus attention on the following:*

- (a) Formulating the objective of the study (what the study is about and why is it being made?)
- (b) Designing the methods of data collection (what techniques of gathering data will be adopted?)
- (c) Selecting the sample (how much material will be needed?)
- (d) Collecting the data (where can the required data be found and with what time period should the data be related?)
- (e) Processing and analysing the data.
- (f) Reporting the findings.

### 3.2.3 Research design in case of hypothesis-testing research studies

Hypothesis-testing research studies (generally known as experimental studies) are those where the researcher tests the hypotheses of causal relationships between variables. Such studies require procedures that will not only reduce bias and increase reliability, but will permit drawing inferences about causality. Usually experiments meet this requirement.<sup>2</sup>

#### *Other Research Designs:*

- Cross-sectional Designs: **Involve the collection of information from any given sample of population elements only once.**
- In **single cross-sectional designs**, there is only one sample of respondents and information is obtained from this sample only once.<sup>4</sup>
- In **multiple cross-sectional designs**, there are two or more samples of respondents, and information from each sample is obtained only once. Often, information from different samples is obtained at different times<sup>4</sup>

#### *Longitudinal Designs:*

- A fixed sample (or samples) of population elements is measured repeatedly on the same variables
- A longitudinal design differs from a cross-sectional design in that the sample or samples remain the same over time<sup>4</sup>

### 3.3 Research Design Differences

### 3.3.1 Exploratory & Conclusive Research Differences

	<i>Exploratory</i>	<i>Conclusive</i>
<b>Objective:</b>	To provide insights and understanding.	To test specific hypotheses and examine relationships.
<b>Character-istics:</b>	Information needed is defined only loosely. Research process is flexible and unstructured. Sample is small and non-representative. Analysis of primary data is qualitative.	Information needed is clearly defined. Research process is formal and structured. Sample is large and representative. Data analysis is quantitative.
<b>Findings/ Results:</b>	Tentative.	Conclusive.
<b>Outcome:</b>	Generally followed by further exploratory or conclusive research.	Findings used as input into decision making.

### 3.3.2 A Comparison of Basic Research Designs

	<i>Exploratory</i>	<i>Descriptive</i>	<i>Causal</i>
<b>Objective:</b>	Discovery of ideas and insights	Describe market characteristics or functions	Determine cause and effect relationships
<b>Characteristics:</b>	Flexible, versatile	Marked by the prior formulation of specific hypotheses	Manipulation of one or more independent variables
<b>Methods:</b>	Expert surveys Pilot surveys Secondary data: qualitative analysis Qualitative research	Secondary data: quantitative analysis Surveys Panels Observation and other data	Experiments

**Methods of Exploratory Research**

- Survey of experts Pilot surveys)
- Secondary data analyzed in a qualitative way
- Qualitative research <sup>4</sup>

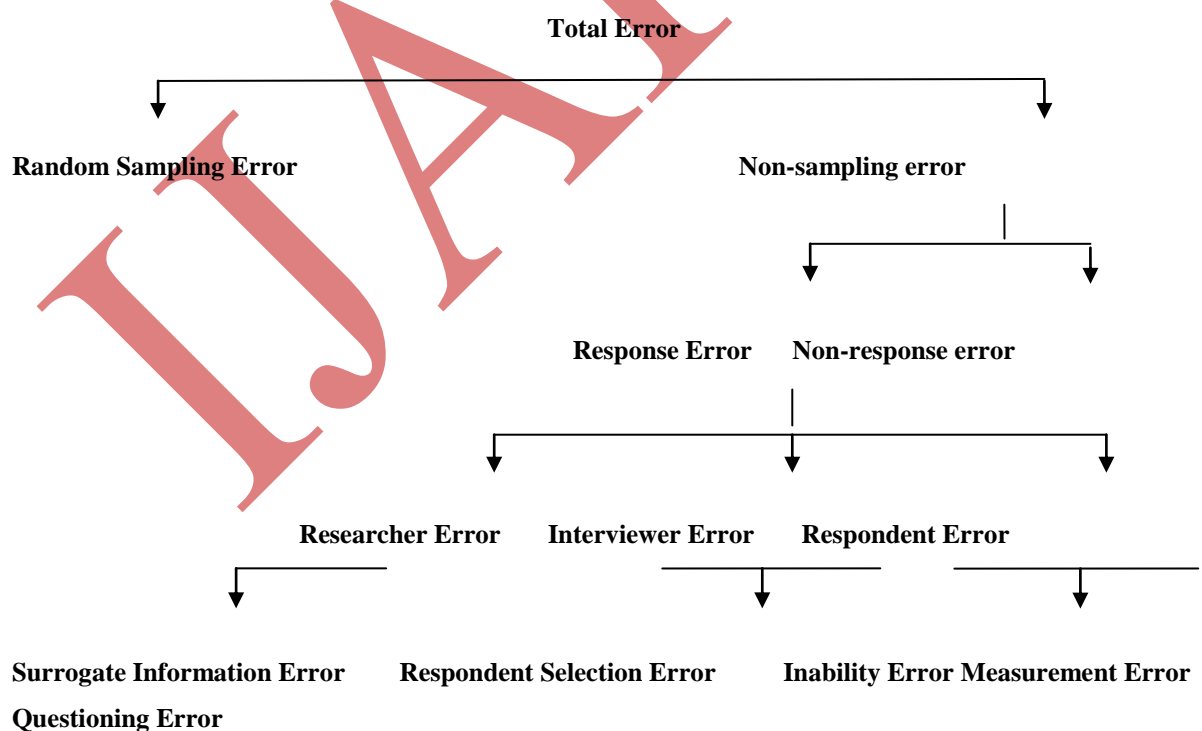
**Methods of Descriptive Research**

- Secondary data analyzed in a quantitative as opposed to a qualitative manner
- Surveys
- Panels
- Observational and other data <sup>4</sup>

**Uses of Causal Research:**

- To understand which variables are the cause (independent variables) and which variables are the effect (dependent variables) of a phenomenon
- To determine the nature of the relationship between the causal variables and the effect to be predicted
- METHOD: Experiments <sup>4</sup>

**IV ERROR IN RESEARCH DESIGNS**



#### 4.1 Errors in Marketing Research

- The **total error** is the variation between the true mean value in the population of the variable of interest and the observed mean value obtained in the marketing research project.
- **Random sampling error** is the variation between the true mean value for the population and the true mean value for the original sample.
- **Non-sampling errors** can be attributed to sources other than sampling, and they may be random or nonrandom: including errors in problem definition, approach, scales, questionnaire design, interviewing methods, and data preparation and analysis. Non-sampling errors consist of non-response errors and response errors.<sup>5</sup>

#### *Errors in Marketing Research*

- **Non-response error** arises when some of the respondents included in the sample do not respond.
- **Response error** arises when respondents give inaccurate answers or their answers are misrecorded or misanalyzed<sup>5</sup>

#### V CONCLUSION

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 any research project. Research design must give due weight to various points such as the type of universe and its nature, the objective of his 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 research project.

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