

Lecture 7 RESEARCH DESIGN

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MEANING

Research is the study of materials, sources and data in order to get conclusions. Getting the research design right is the first step towards organized research, which is more likely to be good research. A research design is the program that guides the investigator in the process of collecting, analyzing and interpreting observations. It provides a systematic plan of procedure for the researcher to follow.

DEFINITION

- “It constitutes the blue print for the collection, measurement and analysis of data” - **Philips Bernard S**
- It “provides a systematic plan of procedure for the researcher to follow” - **Best John N**
- “The design research from controlling general scientific model into varied research procedure”- **P.V. Young**
- “A research design is “the programme that guides the investigator in the process of collecting, analysis and interpreting observations”. – **David and Shava**
- “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.”- **Eltiz, Jahoda and Destsch and Cook**

CONCEPT OF RESEARCH DESIGN

The most important step after defining the research problem is preparing the design of the research project, which is popularly known as the 'research design'. A research design helps to decide upon issues like what, when, where, how much, by what means etc. with regard to an enquiry or a research study. 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, research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Selltiz et al, 1962). Thus, research design provides an outline of what the researcher is going to do in terms of framing the hypothesis, its operational implications and the final data analysis. Specifically, the research design highlights decisions which include:

1. The nature of the study
2. The purpose of the study
3. The location where the study would be conducted
4. The nature of data required
5. From where the required data can be collected
6. What time period the study would cover
7. The type of sample design that would be used
8. The techniques of data collection that would be used
9. The methods of data analysis that would be adopted and
10. The manner in which the report would be prepared

In view of the stated research design decisions, the overall research design may be divided into the following (Kothari 1988):

- (a). The sampling design that deals with the method of selecting items to be observed for the selected study;
- (b). The observational design that relates to the conditions under which the observations are to be made;
- (c). The statistical design that concerns with the question of how many items are to be observed, and how the information and data gathered are to be analysed; and
- (d). The operational design that deals with the techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out.

FEATURES OF RESEARCH DESIGN

When a researcher has formulated a research problem, he/she has to focus on developing a good design for solving the problem. A good design is one that minimizes bias and maximizes the reliability of the data. It also yields maximum information, gives minimum experimental error, and provides different aspects of a single problem. A research design depends on the purpose and nature of the research problem. Thus, one single design cannot be used to solve all types of research problem, i.e., a particular design is suitable for a particular problem. Some of the important features are as follows:

1. It is a plan that specifies the objectives of study and the hypothesis to be tested.
2. It is an outline that specifies the sources and types of information relevant to the research question.
3. It is a blueprint specifying the methods to be adopted for gathering and analysis of data.
4. It is a scheme defining the procedure involved in a research process.
5. It is a series of guide posts to keep one going in the right direction.
6. It reduces wastage of time and cost.

7. It encourages co-ordination and effective organization.
8. It is a tentative plan which undergoes modifications, as circumstances demand, when the study progresses, new aspects, new conditions and new relationships come to light and insight into the study deepens.
9. It has to be geared to the availability of data and the cooperation of the informants.
10. It has also to be kept within the manageable limits

If a research study is an exploratory or formulative one, i.e., it focuses on discovery of ideas and insights, the research design should be flexible enough to consider different aspects of the study. Similarly, if the study focuses on accurate description or association between variables, the design should be accurate with minimum bias and maximum reliability. However, in practice, it is difficult to categorize a particular study into a particular group. A study can be categorized only on the basis of its primary function and accordingly, its design can be developed. Moreover, the above mentioned factors must be given due weightage while working on the details of the research design.

CLASSIFICATION OF RESEARCH DESIGN

What are the different major types of research designs? We can classify designs into a simple threefold classification by asking some key questions. First, does the design use random assignment to groups? [Don't forget that random assignment is not the same thing as random selection of a sample from a population!] If random assignment is used, we call the design a **randomized experiment** or **true experiment**. If random assignment is not used, then we have to ask a second question: Does the design use **either** multiple groups or multiple waves of measurement? If the answer is yes, we would label it a **quasi-experimental design**. If no, we would call it a **non-experimental design**. This threefold classification is especially useful for describing the design with respect to internal validity. A randomized experiment generally

is the strongest of the three designs when your interest is in establishing a cause-effect relationship. A non-experiment is generally the weakest in this respect. I have to hasten to add here; that I don't mean that a non-experiment is the weakest of the three designs overall, but only with respect to internal validity or causal assessment. In fact, the simplest form of non-experiment is a one-shot survey design that consists of nothing but a single observation

There are a number of crucial research choices, various writers advance different classification schemes, some of which are:

1. Experimental, historical and inferential designs (American Marketing Association).
2. Exploratory, descriptive and causal designs (Selltitz, Jahoda, Deutsch and Cook).
3. Experimental and expose fact (Kerlinger)
4. Historical method, and case and clinical studies (Goode and Scates)
5. Sample surveys, field studies, experiments in field settings, and laboratory experiments (Festinger and Katz)
6. Exploratory, descriptive and experimental studies (Body and Westfall)
7. Exploratory, descriptive and casual (Green and Tull)
8. Experimental, „quasi-experimental designs“ (Nachmias and Nachmias)
9. True experimental, quasi-experimental and non-experimental designs (Smith).
10. Experimental, pre-experimental, quasi-experimental designs and Survey Research (Kidder and Judd).

These different categorizations exist, because „research design“ is a complex concept. In fact, there are different perspectives from which any given study can be viewed. They are:

1. The degree of formulation of the problem (the study may be exploratory or formalized)
2. The topical scope-breadth and depth-of the study(a case or a statistical study)

3. The research environment: field setting or laboratory (survey, laboratory experiment)
4. The time dimension (one-time or longitudinal)
5. The mode of data collection (observational or survey)
6. The manipulation of the variables under study (experimental or expose facto)
7. The nature of the relationship among variables (descriptive or causal)

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