

RESEARCH METHODOLOGY

LECTURE-14

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.

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 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. Inbuilt flexibility in research design is needed because the research problem, broadly defined initially, is transformed into one with more precise meaning in exploratory studies, which fact may necessitate changes in the research procedure for gathering relevant data. Generally, the following three methods in the context of research design for such studies are talked about:

- (a) the survey of concerning literature;
- (b) the experience survey and
- (c) the analysis of 'insight-stimulating' examples.

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 occurs or its association with something else. The studies concerning whether certain variables are associated are examples of diagnostic research studies. As against this, studies concerned with specific predictions, with narration of facts and characteristics concerning individual, group or situation are all examples of descriptive research studies. Most of the social research comes under this category. From the point of view of the research design, the descriptive as well as diagnostic studies share common requirements and as such we may group together these two types of research studies. 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. Since the aim is to obtain complete and accurate information in the said studies, the procedure to be used must be carefully planned. 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 notflexible 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. 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. Hence, when we talk of research design in such studies, we often mean the design of experiments. Professor R.A. Fisher's name is associated with experimental designs. Beginning of such designs was made by him when he was working at Rothamsted Experimental Station (Centre for Agricultural Research in England). As such the study of experimental designs has its origin in agricultural research.

Professor Fisher found that by dividing agricultural fields or plots into different blocks and then by conducting experiments in each of these blocks, whatever information is collected and inferences drawn from them, happens to be more reliable. This fact inspired him to develop certain experimental designs for testing hypotheses concerning scientific investigations. Today, the experimental designs are being used in researches relating to phenomena of several disciplines. Since experimental designs originated in the context of agricultural operations, we still use, though in a technical sense, several terms of agriculture (such as treatment, yield, plot, block etc.) in experimental designs.