

INTRODUCTION TO RESEARCH METHODOLOGY

Learning Objectives

The chapter will provide an understanding of the following :

- Definition, Meaning, Characteristics and Objectives of Research
- Types of Research
- Attributes of a good Research
- Research Method and Research Methodology
- Research Methodology in Social Services
- Significance of Research
- Research Status in India

INTRODUCTION

Research has some basic standard operating procedures which remain the same across all fields.

The quest for knowledge is a never ending process and in its simplest form this process has been called as 'research'. The world has evolved as a result of consistent efforts to discover new things. In the current times research has become an organized and specialized field. Newer methods to conduct research have come up. However, whatever be the field in which research is being carried out, the research methodology parameters remain the same, even if the objectives and the population to which the problem is being addressed is different. Certain basic rules, often referred to as standard operating procedures, are common to all fields, although they can be easily developed for scientific research and are fuzzy for social science research. Differences exist between one subject and other, but there is also interdependence. It has been seen that there are inputs of theoretical considerations in empirical studies and in a theoretical study we look for empirical evidences to support our theory. Understanding research concepts and the methods used in it is important before any researcher picks up the initiative of undertaking research. The current chapter provides an insight into the basic research concepts.

■ DEFINITION AND MEANING

Research is an organized and systematic study of materials and sources in order to discover new things and establish facts and reach new conclusion.

Research can be defined as an organized and systematic study of materials and sources in order to discover new things and establish facts and reach new conclusions. Essentially speaking research involves a well developed plan, a systematic approach to developing new theories or finding solutions to various problems.

Zina O' Leary¹ has defined research as a 'creative and strategic thinking process that involves constantly assessing, reassessing and making decisions about the best possible means for obtaining trustworthy information, carrying out appropriate analysis and tracing credible solutions.'

Thus research is actually a journey of discovery. Humans since aeons have been trying to discover better methods of doing routine things, a better explanation for why things happen in a particular manner and better answers to recurring problems. The technique which is employed in the search of this knowledge is termed as research.

Research provides us with right kind of information that helps us in successfully dealing with problems.

Clifford Woody² has very comprehensively defined research as 'A method for the discovery of truth which is really a method of critical thinking. It comprises of defining and redefining problems, formulating hypothesis or suggested solutions ; collecting and organising and evaluating data; making deductions and reaching conclusions; and at last, carefully testing the conclusions to determine whether they fit the formulating hypothesis.'

It can be concluded that research involves

- (i) A clear definition of the problem
- (ii) Formulation of hypothesis
- (iii) Collection and analysis of data and
- (iv) Relating the findings to existing theories and earlier formulated hypothesis.

Thus research is re-search, i.e. a revisit on the earlier findings with the intention of correlating them with newly discovered facts. The Encyclopedia of Social Sciences³ has described research as a "critical and exhaustive investigation or experimentation having as its aim the revision of accepted conclusions in the light of newly discovered facts."

■ CHARACTERISTICS OF RESEARCH

An understanding of the meaning of research puts us in a position to list the characteristics of research.

1. A research aims at solving a problem.

2. Research is purposive i.e. it deals with a well defined significant problem.
3. A research gathers new knowledge and brings to the forefront hitherto unexplored and unexplained phenomenon.
4. Research involves collection of primary data from first hand sources or involves use of existing data for a new purpose.
5. Research activities are carefully detailed and clearly outlined through a research design. These activities are defined by carefully designed procedures and analysis tools.
6. Research requires a degree of expertise and skill. A research worker is expected to be knowledgeable about the intricacies involved in carrying out a research.
7. Research should be objective and logical. The findings should be free from bias and the results should be carefully verified.
8. Every process, term and tool used in the research should be carefully documented and reported.
9. The research should target towards the discovery of general principles or theories which can find application to a wide range of problems in the present and future context.

■ OBJECTIVES OF RESEARCH

Research is primarily concerned with production of knowledge. It is the process of discovering the unknown and rediscovering the known. Although every research has its own set of objectives, yet research can be conducted with any of the following four broad objectives in mind :

Research can be carried out with the objective to
(i) explore (ii) describe
(iii) diagnose (iv) determine
causal relationship.

- I. **To Explore.** Research can be carried out with the purpose of gaining familiarity with a particular topic or to gain insight into unexplored areas. Such a research is termed as **exploratory research** and is often carried out before formulating a hypothesis e.g. a domestic company may think of setting up its manufacturing operations abroad. This kind of investment is new to the company and the initial research conducted to explore the possibility of this new idea can be termed as exploratory research.
- II. **To Describe.** Quite often a research can be carried out with the objective of describing a particular situation, event or an individual e.g. a study can be carried out to study the voting pattern in a particular state on the basis of gender, economic status, religion etc. as observed in the previous election. Such researches are termed as **descriptive studies**. Since these studies are about events that have already taken place, these studies are also called as **ex-post facto studies**.

- III. **To Diagnose.** When a study is carried out with the objective of finding out how frequently a particular event is associated with another event, it is termed as **diagnostic study** e.g. a fast food chain has conducted a research to find out the feasibility of setting up an outlet in a multiplex. The chief objective of this study is to find out that how often people eat their meal outside when planning to watch a movie. Doctors frequently employ diagnostic methods to discover what it is that ails the patient. Numerous questions are asked from the patient and through symptomatic and clinical investigation the doctors can then give a diagnosis. Such studies are called as diagnostic studies.
- IV. **To establish Causal Relationship.** A research can be done with the objective of finding out the causal relationship between the dependent variables with independent variables. Such research are called as **hypothesis testing research** e.g. a research carried out to establish the relationship between polio vaccine (independent variable) and its effectiveness in controlling the occurrence of polio (dependent variable) is a hypothesis testing research.

■ TYPES OF RESEARCH

Research can be classified on the basis of purpose, time, methodology, setting etc. However one can broadly classify research as Basic or Applied research.

Research for the sake of enhancing knowledge is termed as basic research

I. Basic Research. Research for the sake of enhancing knowledge is termed as basic research. Basic or Pure research is done with the intention of overpowering the unknown. It is an intellectual exploration and the outcome of such research may or may not have any practical relevance. It is primarily concerned with developing and formulating theories and generalisations.

According to **Travers'**, "Basic Research is designed to add to an organized body of scientific knowledge and does not necessarily produce results of immediate practical value." Such a research is time and cost intensive. However the relevance of basic research cannot be undermined. A research, which may not appear to have future utility, may come up with the most startling and unexpected results of high value.

Applied Research is termed as 'need based' research having high practical relevance.

II. Applied Research. Applied or practical research is termed as 'need based' research having high practical relevance. The goal of applied research in terms of adding to scientific knowledge base acquires a secondary position. The basic aim of such research is to find solutions to problems being faced by the society, government or the business. Since it is specific in nature, is result oriented and is driven by a clear aim, the

time and cost factors are well planned and budgeted. Another form of applied research is **action research**. The difference between the applied and action research is that the former may be taken by a research to find results for a problem being faced by a third party. However action researcher has a condition attached that the researcher is also the practitioner. Hence action research is being undertaken by a researcher to improve upon his own practices.

Data based research in which primary data is collected and the data is analysed and subject to hypothesis testing is called empirical research.

III. Empirical Research. This is a data based research in which primary (first hand) data is collected and the data is analysed and subject to hypothesis testing. Often referred to as **experimental research**, the researcher tries to manipulate the independent variables within the research design set by him and then study its effect on the variables under study. The findings from such a research are extrapolated to hold true for the world at large e.g. we may study the effect of a depreciating dollar on Indian export industry. For this purpose we would first establish a relationship between the dollar and export earnings using the available theoretical concepts. Thereafter a sample of export units might be selected and the study is systematically conducted. The findings derived from sample export units would hold true for the whole population i.e. for the entire export sector. Such a research is called as an empirical research.

Qualitative research is concerned with qualitative phenomena generally involving study of human behaviour.

IV. Qualitative Research. As the name suggests, this research is concerned with qualitative phenomena generally involving study of human behaviour. Such a research tries to measure the attitudes and opinions of the people using the technique of interview and observation. Various projective techniques like thematic apperception test, word association test, sentence completion test are used. Such a research is also called as **motivation research**. An example of this kind is the opinion surveys being carried out by a firm to find out the response of the customers to its product and advertisement using any of the above mentioned techniques. Qualitative research is needed in situations where it is not possible to quantify the phenomena and the responses are going to be of subjective nature.

Quantitative research involves the measurement of a phenomena in quantitative terms.

V. Quantitative Research. It involves the measurement of a phenomenon in quantitative terms. The results of such research are subject to intensive quantitative and statistical analysis. An example of this kind of research is a study conducted to find out the proportion of school students using self driven vehicles for commuting to school for a given area. Another example of quantitative research is the survey conducted to document the demographic profile of an area and establish patterns between various factors like income and residential area, education and job profile etc. Many a times a debate is carried out about the utility of qualitative research vis-a-vis the quantitative research.

Social scientists have often debated upon the correct approach for social research. However it has been seen that there is an inter-dependence between the two. Qualitative research often looks towards quantitative data to support their theories and quantitative research often looks for support in existing theories.

Longitudinal research is spread over a long period of time.

VI. Longitudinal Research. Longitudinal research is generally spread over a long period of time. In this kind of study the problem or the phenomena is studied over a consecutive stretch of time e.g. in marketing research a panel of potential consumers can be chosen. They are subject to variations in the advertisement to judge the most effective advertisement campaign and their purchasing behaviour is recorded after exposure to each advertisement. Conclusive results are obtained after observing their behaviour over a considerable stretch of time.

Research involving creation of an artificial environment which is very similar to real environment is called simulation research.

VII. Simulation Research. As the word 'simulation' suggests, this research involves the creation of an artificial environment which is very similar to the real environment. Thereafter, within this artificial environment the variables are manipulated and studied. e.g. in order to study the consumer's spending behaviour, he can be given Rs. 1000 and his buying behaviour can be recorded in an outlet very similar to an actual retail environment. Simulation research thus permits us to observe the dynamic behaviour of the consumer under controlled conditions.

Apart from the above classifications research can be classified as *historical research* where old historical matter like documentaries, autobiographies, articles is researched. It can be *conclusion oriented* where the researcher is free to choose a problem of his choice. It can be *decision oriented* where the problem is given to the researcher and he has to work on it to provide the solutions.

■ ATTRIBUTES OF A GOOD RESEARCH

A good research should be logical, verifiable and contribute to the existing knowledge bank.

A good research alone is of relevance in solving the problem under consideration. Hence it becomes imperative that we understand the attributes that define a good research.

Some of the essential features of a good research are :

1. A good research has a *well defined* goal. It should have a clear statement of objectives.
2. It should also have a *systematic* plan of work. A specific programme helps in monitoring and carrying out the research within a budgeted time and cost framework and at the same time yields conclusive results.
3. A good research contributes towards the existing *knowledge bank*. It aims at increasing the understanding of existing and new facts and ideas.

4. Good research is *logical*. A clear logical argument is required to communicate an ordered sequence of ideas and activities and hence support research conclusions.
5. The results of a good research should be *verifiable*. The research if replicated should yield same conclusions. A research that relies on concrete data collected from a real life situation would have good chances of yielding valid results.
6. A good research is *frank*. In other words it lists the flaws in the research and also explains the impact of such flaws on research results.

However it is a fact that a good researcher alone can conduct a good research. Hence a research can give fruitful results only if the person conducting the research is true to it.

■ RESEARCH METHOD AND RESEARCH METHODOLOGY

Research methods refer to all the techniques that have been used to conduct the research. The science of method is termed as research methodology.

Before proceeding ahead it is pertinent that a distinction is drawn between research methods and research methodology. Research methods refer to all the techniques that have been used for conducting the research. What is the meaning of research techniques? It refers to all the instruments like questionnaire and behaviours like attitude measurement that are used in research. The distinction between research techniques and methods is very thin and can be better illustrated with the help of an example. For instance, in a survey research a researcher may use the method of interview to collect data and to conduct this interview the researcher will probably develop an interview schedule which would be called as a research technique. Similarly, the method of data collection may be observation and the researcher may use the technique of score cards or close circuit TV cameras as instruments to collect data.

The science of methods is termed as research methodology. It refers to the process of conducting the research. Research methodology not only describes the steps involved in conducting the research, but also justifies the choice of various methods, states the limitations of research and also brings out the presuppositions and consequences and conducting the research. Research methodology answers questions like the why, what, how when of conducting the research e.g. why has the research been undertaken, how was the problem formulated, what were the methods employed to collect the data, when was the data collected, which techniques of analysis were adopted and so on and so forth. The distinction between the three has been highlighted in table 1.1 in terms of the definition, purpose and an example of each of the three i.e. research methodology, research methods and research techniques.