

RESEARCH - CONCEPTS AND OBJECTIVES

“Research is a careful and scientific inquiry into every subject, subject matter or area, which is an endeavour to discover valuable information which would be useful for further application. Thus, research is a process of systematic and in-depth study or search of any specific topic, subject or area investigation.”

Research may involve a scientific study or experimentation and result in discovery or invention, which would increase in scientific development or decision making.

The research would result in the formulation of new theories, discovery of new techniques an improvement in old concept or knocking off of an existing theory, concept method or technique. With the help of research we may develop a hypothesis and test it. There cannot be any research which does not increase the knowledge or improve scientific know-how in any branch of science, arts or commerce. Research means search attain and again.

Need of Research

1. Refinement of technology of search to achieve the sharpness, speediness, effectiveness and problem free process.
2. Moves to unfold the curiosities of the unknown.
3. Search for cause-effecting an action, or every cause with one action.
4. Speedy stimulation of unusual happening (e.g. AIDS and its mince)

Objectives of Research

The main purpose of research is to discover answer to question through the application of scientific procedures. The important aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose, we may think of research objectives as falling into a number of following broad groupings.

1. To gain familiarity with a phenomenon or to achieve new insight into it. This type of research studies are termed as exploratory or formualarize research studies.
2. To portray accurately the characteristics of a particular individual, situation or a group such studies are known as descriptive research studies.
3. To determine the frequency with which something occurs or with which is associated with Something occurs or with which is associated with something else the studies with this object are known as diagnostic research studies.

To test a hypothesis of a casual relationship between variables such studies are known as hypothesis testing research studies.

Scope and Function of Research

1. The purpose and function of research are to acquire knowledge (for academic reason) and to utilize the knowledge to social phenomenon, planning, social good will understanding, social growth, prediction, modernization of tool and techniques, and social welfare.
2. Mythology or research admits are being learnt.
3. Research makes use of scientific method to find out the truth.
4. Research admits research organization.
5. Research helps in continuous development of disciplines.
6. Research endows a discipline with an ability to use the knowledge generated in other disciplines.

Types of Research

- I. Fundamental, pure or Theoretical Research
- II. Applied Research

1. Fundamental, pure or Theoretical Research

This type of research is original or basic in character. An imaginative and painstaking research worker, with his qualities of honesty and integrity and his lust for the search of truth. Makes persistent and patient efforts to discover something new to enrich the human knowledge in a fundamental fashion. Such research is known as fundamental or pure. Fundamental research can take shape in two different ways.

- (a) Discovery of a new theory.
- (b) Development of the existing theory.

2. Applied Research

This type of research is based on the application of known theories and models to the actual operational fields or populations. The applied research is conducted to test the empirical content or the basic assumption or the very validity of a theory under given condition.

The research can be categorized as under:

1. Ex-post Facto Research
2. Field investigation
3. Laboratory or experimental research
4. Survey Research
5. Evaluation Research
6. Action Research

Characteristics of Research

1. Research is directed towards the solution of a problem
2. Research emphasizes the development of generalization principles, theories that will be helpful in predicting future occurrences.
3. Research is based upon observable experience or empirical evidence.
4. Research demands accurate observation and description. Research uses quantitative measuring devices as the most precise form of description.
5. Research involves gathering of new data from primary or first hand sources or using existing data for a new purpose.
6. Research requires expertise.
7. Research is characterized by patient and calm and steady activity.
8. Research is carefully recorded and reported each important term is defined limiting factors recognized.
9. Research strives to be objective and logical applying every possible test to validate and procedure employed the data collected and conclusion reached.
10. Research involves the quest for answers to unsolved problems.
11. Research requires rigorous standards of scientific spirit and integrity.
12. Research is never mysterious and can be carried out in by thousands of quiet normal individuals, in terms, libraries, laboratories, factories, schools, colleges, universities, the communities and so on and should not be misconceived as ill fated.

Research Methods

The scope of the research process is to produce some new knowledge. This in principle can take three main forms.

- (a) Exploratory Research: a new problem can be structured and identified.
- (b) Constructive Research: a (new) solution to a problem can be developed.
- (c) Empirical Research: Empirical evidence on the feasibility of an existing solution to a problem can be provided.

Research Approaches:

1. Historical Approach: In the approach historical data is given importance to undertake analysis and interpret the results.
2. Descriptive Approach: This approach is one of the most popular approaches in these days. In this approach a problem is described by the researcher to explore new areas of investigation.
3. Case study approach: Case study approach to research the focus is on a single organization of unit or an institution or a district or a community. As the focus is on a single unit, it is possible to undertake an in-depth analysis of the single unit. It is basically a problem solving approach.
4. Experimental approach: This is a very scientific approach. In this approach the researcher first of all determines the problem to be explored or studies. Then he identifies the factors that cause the problem.

Research Process:

Generally, research is understood to follow a certain structural process. Though step order may vary depending on the subject matter and researches, the following steps are usually part of the most formal research both basic and applied.

1. Formation of the topic
2. Hypothesis
3. Conceptual definition
4. Operational definition
5. Gathering of data
6. Analysis of data
7. Conclusion, revising of hypothesis

Prof. Dr. S. SUYAMBAZHAHAN, M.E.,Ph.D.,(IIT)

PRINCIPAL