



# Research Methodology

Lesson - 1

IGNITED  
UNIVERSE

# Content

- **Research – Meaning**
- **Research Methodology and Research Methods**
- **Objectives of Research**
- **Motivation for Research Study**
- **Types of Research – Basic and Applied**
- **Types of Research - Quantitative and Qualitative**
- **Types of Research – Longitudinal and Cross Sectional**
- **Types of Research – Structure and Unstructured**
- **Types of Research – Others**
- **Research Process**

# Content

- **Criteria of Good Research**
- **Criteria of Good Research – This One or Earlier One**
- **Significance of Research**
- **Importance of Research**

**IGNITED**  
UNIVERSE

# Research - Meaning

- Research may be very broadly defined as systematic gathering of data and information and its analysis for advancement of knowledge in any subject. Research attempts to find answer intellectual and practical questions through application of systematic methods. Webster's Collegiate Dictionary defines research as "studious inquiry or examination; esp: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws".

IGNITED  
UNIVERSE

# Research Methodology and Research Methods

- Research methodology is the way in which research problems are solved systematically. It is a science of studying how research is conducted scientifically. It is a procedure by which the researchers go about their work of describing, evaluating and predicting phenomenon. It aims to provide a plan to conduct research.
- Research methods include all those techniques/methods that are adopted for conducting research. Thus, research techniques or methods are the methods that the researchers adopt for conducting the research studies.

IGNITED  
UNIVERSE

# Objectives of Research

- To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as exploratory or formulative research studies);
- To portray accurately the characteristics of a particular individual, situation or a group (studies with this object in view are known as descriptive research studies);
- To determine the frequency with which something occurs or with which it is associated with something else (studies with this object in view are known as diagnostic research studies);
- To test a hypothesis of a causal relationship between variables (such studies are known as hypothesis-testing research studies).

IGNITED  
UNIVERSE

# Motivation for Research Study

- Desire to get a research degree along with its consequential benefits;
- Desire to face the challenge in solving the unsolved problems, i.e., concern over practical problems initiates research;
- Desire to get intellectual joy of doing some creative work;
- Desire to be of service to society;
- Desire to get respectability.

IGNITED  
UNIVERSE

# Types of Research – Basic and Applied

## 1. Fundamental or basic research:

Basic research is an investigation on basic principles and reasons for occurrence of a particular event or process or phenomenon. It is also called theoretical research. Study or investigation of some natural phenomenon or relating to pure science are termed as basic research. It provides a systematic and deep insight into a problem and facilitates extraction of scientific and logical explanation and conclusion on it. The outcomes of basic research form the basis for many applied research.

### *Basic research*

- Seeks generalization
- Aims at basic processes
- Attempts to explain why things happen
- Tries to get all the facts
- Reports in technical language of the topic



# Types of Research – Basic and Applied

## 2. Applied research:

In an applied research one solves certain problems employing well known and accepted theories and principles. Most of the experimental research, case studies and inter-disciplinary research are essentially applied research. Applied research is helpful for basic research. A research, the outcome of which has immediate application is also termed as applied research. Such a research is of practical use to current activity.

### *Applied research*

- Studies individual or specific cases without the objective to generalize
- Aims at any variable which makes the desired difference
- Tries to say how things can be changed
- Tries to correct the facts which are problematic
- Reports in common language

# Types of Research - Quantitative and Qualitative

## Quantitative Research

- It is numerical, non-descriptive, applies statistics or mathematics and uses numbers.
- It is an iterative process whereby evidence is evaluated.
- The results are often presented in tables and graphs.
- It is conclusive.
- It investigates the what, where and when of decision making.

## Qualitative Research

- It is non-numerical, descriptive, applies reasoning and uses words.
- Its aim is to get the meaning, feeling and describe the situation.
- Qualitative data cannot be graphed.
- It is exploratory.
- It investigates the why and how of decision making

# Types of Research – Exploratory, Descriptive and Explanatory

- ***Exploratory Research***

Exploratory research might involve a literature search or conducting focus group interviews. The exploration of new phenomena in this way may help the researcher's need for better understanding, may test the feasibility of a more extensive study, or determine the best methods to be used in a subsequent study. For these reasons, exploratory research is broad in focus and rarely provides definite answers to specific research issues.

The objective of exploratory research is to identify key issues and key variables.

- ***Descriptive Research***

The descriptive research is directed toward studying “what” and how many off this “what”. Thus, it is directed toward answering questions such as, “What is this?”.

- ***Explanatory Research***

- Its primary goal is to understand or to explain relationships.
- It uses correlations to study relationships between dimensions or characteristics off individuals, groups, situations, or events.
- Explanatory research explains (How the parts of a phenomenon are related to each other).
- Explanatory research asks the “Why” question

# Types of Research – Longitudinal and Cross Sectional

## Longitudinal Research

Research carried out longitudinally involves data collection at multiple points in time. Longitudinal studies may take the form of:

- *Trend study*- looks at population characteristics over time, e.g. organizational absenteeism rates during the course of a year
- *Cohort study*- traces a sub-population over time, e.g. absenteeism rates for the sales department;
- *Panel study*- traces the same sample over time, e.g. graduate career tracks over the period 1990 – 2000 for the same starting cohort.
- While longitudinal studies will often be more time consuming and expensive than cross-sectional studies, they are more likely to identify causal relationships between variables.

## Cross-sectional Research

One-shot or cross-sectional studies are those in which data is gathered once, during a period of days, weeks or months. Many cross-sectional studies are exploratory or descriptive in purpose. They are designed to look at how things are now, without any sense of whether there is a history or trend at work.

# Types of Research - Structure and Unstructured

- In the structured approach everything that forms the research process – objectives, design, sample, and the questions that you plan to ask of respondents – is predetermined.
- The unstructured approach, by contrast, allows flexibility in all these aspects of the process.

IGNITED  
UNIVERSE

# Types of Research – Others

## ***Action research***

- Fact findings to improve the quality of action in the social world

## ***Policy-Oriented Research***

- Reports employing this type of research focus on the question 'How can problem 'X' be solved or prevented?'

## ***Classification research***

It aims at categorization of units in to groups

- To demonstrate differences
- To explain relationships

## ***Comparative research***

- To identify similarities and differences between units at all levels

## ***Causal research***

- It aims at establishing cause and effect relationship among variable

## ***Theory-Testing Research***

- It aims at testing validity of a unit

## ***Theory-Building Research***

- To establish and formulate the theory

# Research Process

- Research process consists of a series of steps or actions required for effectively conducting research. The following are the steps that provide useful procedural guidelines regarding the conduct of research:
  - (1) Formulating the research problem;
  - (2) Extensive literature survey;
  - (3) Developing hypothesis;
  - (4) Preparing the research design;
  - (5) Determining sample design;
  - (6) Collecting data;
  - (7) Execution of the project;
  - (8) Analysis of data;
  - (9) Hypothesis testing;
  - (10) Generalization and interpretation, and
  - (11) Preparation of the report or presentation of the results. In other words, it involves the formal write-up of conclusions.

# Criteria of Good Research

- The purpose of the research should be clearly defined and common concepts bemused.
- The research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement, keeping the continuity of what has already been attained.
- The procedural design of the research should be carefully planned to yield results that areas objective as possible.
- The researcher should report with complete frankness, flaws in procedural design and estimate their effects upon the findings.
- The analysis of data should be sufficiently adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked carefully.
- Conclusions should be confined to those justified by the data of the research and limited to those for which the data provide an adequate basis.
- Greater confidence in research is warranted if the researcher is experienced, has a good reputation in research and is a person of integrity.



# Criteria of Good Research – This One or Earlier One

- Good research is systematic: It means that research is structured with specified steps to be taken in a specified sequence in accordance with the well defined set of rules. Systematic characteristic of the research does not rule out creative thinking but it certainly does reject the use of guessing and intuition in arriving at conclusions.
- Good research is logical: This implies that research is guided by the rules of logical reasoning and the logical process of induction and deduction are of great value in carrying out research. Induction is the process of reasoning from a part to the whole whereas deduction is the process of reasoning from some premise to a conclusion which follows from that very premise. In fact, logical reasoning makes research more meaningful in the context of decision making.
- Good research is empirical: It implies that research is related basically to one or more aspects of a real situation and deals with concrete data that provides a basis for external validity to research results.
- Good research is replicable: This characteristic allows research results to be verified by replicating the study and thereby building a sound basis for decisions.

# Significance of Research

- Research inculcates scientific and inductive thinking and it promotes the development of logical habits of thinking and organization.
- The increasingly complex nature of business and government has focused attention on the use of research in solving operational problems.
- Research, as an aid to economic policy, has gained added importance, both for government and business.
- Decision-making may not be a part of research, but research certainly facilitates the decisions of the policy maker.
- The plight of cultivators, the problems of big and small business and industry, working conditions, trade union activities, the problems of distribution, even the size and nature of defence services are matters requiring research. Thus, research is considered necessary with regard to the allocation of nation's resources.

# Importance of Research

- To those students who are to write a master's or Ph.D. thesis, research may mean a careerism or a way to attain a high position in the social structure;
- To professionals in research methodology, research may mean a source of livelihood;
- To philosophers and thinkers, research may mean the outlet for new ideas and insights;
- To literary men and women, research may mean the development of new styles and creative work;
- To analysts and intellectuals, research may mean the generalizations of new theories.



**End of Lesson - 1**

IGNITED  
UNIVERSE