

# M.Com. Programme

SEM-III

**Subject:** Research Methodology (RM)

**Subject Code:** PB03CCOM21

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## MEANING OF RESEARCH

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry especially through search for new facts in any branch of knowledge."

Redman and Mory define research as a "systematized effort to gain new knowledge."

Some people consider research as a movement, a movement from the known to the unknown. It is actually a voyage of discovery.

Research is, thus, an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison and experiment.

## OBJECTIVES OF RESEARCH

The purpose of research is to discover answers to questions through the application of scientific procedures. The main 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 insights into it (studies with this object in view are termed as *exploratory* or *formulative* research studies);
2. 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);

3. 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);
4. To **test a hypothesis** of a causal relationship between variables (such studies are known as *hypothesis-testing* research studies).

## MOTIVATION IN RESEARCH

What makes people to undertake research? This is a question of fundamental importance.

The possible motives for doing research may be either one or more of the following:

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

However, this is not an exhaustive list of factors motivating people to undertake research studies. Many more factors such as:

- ) directives of government,
  - ) employment conditions,
  - ) curiosity about new things,
  - ) desire to understand causal relationships,
  - ) Social thinking and awakening, and
- the like may as well motivate (or at times compel) people to perform research operations.

## TYPES OF RESEARCH

The basic types of research are as follows:

1. **Descriptive vs. Analytical:** *Descriptive research* includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use the term *Ex post facto research* for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most *ex post facto research* projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, **frequency of shopping, preferences of people, or similar data**. *Ex post facto studies* also include attempts by researchers to discover causes even when they cannot control the variables. The methods of research utilized in

descriptive research are survey methods of all kinds, including comparative and correlation methods. In *analytical research*, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

2. ***Applied vs. Fundamental:*** Research can either be applied (or action) research or fundamental (to basic or pure) research. *Applied research* aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, whereas *fundamental research* is mainly concerned with generalizations and with the formulation of a theory. "Gathering knowledge for knowledge's sake is termed 'pure' or 'basic' research." Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. Similarly, research studies, concerning human behaviour carried on with a view to make generalizations about human behaviour, are also examples of fundamental research, but research aimed at certain conclusions (say, a solution) facing a concrete social or business problem is an example of applied research. Research to identify social, economic or political trends that may affect a particular institution or the copy research (research to find out whether certain communications will be read and understood) or the marketing research or evaluation research are examples of applied research. Thus, the central aim of applied research is to discover a solution for some pressing practical problem, whereas basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge.
3. ***Quantitative vs. Qualitative:*** Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind. For instance, when we are interested in investigating the reasons for human behaviour (i.e., why people think or do certain things), we quite often talk of 'Motivation Research', an important type of qualitative research. This type of research aims at discovering the underlying motives and desires, using in depth interviews for the purpose. Other techniques of such research are word association tests, sentence completion tests, story completion tests and similar other projective techniques. Attitude or opinion research i.e., research designed to find out how people feel or what they think about a particular subject or institution is also qualitative research. Qualitative research is especially important in the behavioral sciences where the aim is to discover the underlying motives of human behaviour. Through such research we can analyze the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing. It

difficult job and therefore, while doing such research, one should seek guidance from experimental psychologists.

4. **Conceptual vs. Empirical:** Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones. On the other hand, empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. In such a research it is necessary to get at facts firsthand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such a research, the researcher must first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information. Such research is thus characterized by the experimenter's control over the variables under study and his deliberate manipulation of one of them to study its effects. Empirical research is appropriate when proof is sought that certain variables affect other variables in some way. Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis.
5. **Some Other Types of Research:** All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factor.
  1. From the point of view of time, we can think of research either as **one-time research or longitudinal research**. In the former case the research is confined to a single time-period, whereas in the latter case the research is carried on over several time-periods.
  2. Research can be **field-setting research or laboratory research or simulation research**, depending upon the environment in which it is to be carried out.
  3. Research can as well be understood as **clinical or diagnostic research**. Such research follow case-study methods or in-depth approaches to reach the basic causal relations. Such studies usually go deep into the causes of things or events that interest us, using very small samples and very deep probing data gathering devices.
  4. The research may be **exploratory or it may be formalized**. The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypotheses to be tested.

5. **Historical research** is that which utilizes historical sources like documents, remains, etc. to study events or ideas of the past, including the philosophy of persons and groups at any remote point of time.
6. Research can also be classified as **conclusion-oriented and decision-oriented**. While doing conclusion-oriented research, a researcher is free to pick up a problem, redesign the enquiry as he proceeds and is prepared to conceptualize as he wishes. Decision-oriented research is always for the need of a decision maker and the researcher in this case is not free to embark upon research according to his own inclination. Operations research is an example of decision oriented research since it is a scientific method of providing executive departments with a quantitative basis for decisions regarding operations under their control.

<b>Significance of research:</b>
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According to a famous Hudson Maxim, "All progress is born of inquiry. Doubt is often better than overconfidence, for it leads to inquiry, and inquiry leads to invention". It brings out the significance of research, increased amount of which makes the progress possible.

- ) Research **encourages scientific and inductive thinking**, besides promoting the development of logical habits of thinking and organisation.
- ) The role of research in applied economics in the context of an economy or business is greatly increasing in modern times. The increasingly complex nature of government and business has raised the use of research in **solving operational problems**.
- ) Research assumes significant role in the **formulation of economic policy** for both, the government and business. It provides the basis for almost all government policies of an economic system. Government budget formulation, for example, depends particularly on the analysis of needs and desires of people, and the availability of revenues, which requires research. Research helps to formulate alternative policies, in addition to examining the consequences of these alternatives. Thus, research also facilitates the decision-making of policy-makers, although in itself is not a part of research.
- ) In the process, research also helps in the **proper allocation of a country's scarce resources**.
- ) Research is also necessary for **collecting information on the social and economic structure of an economy to understand the process of change occurring in the country**. Collection of statistical information, though not a routine task, involves various research problems. Therefore, large staff of research technicians or experts is

engaged by the government these days to undertake this work. Research also assumes significance in solving various operational and planning problems associated with business and industry. In several ways, operations research, market research and motivational research are vital and their results assist in taking business decisions.

- ) Market research refers to the investigation of the structure and development of a market for the formulation of efficient policies relating to purchases, production and sales.
- ) Operational research relates to the application of logical, mathematical, and analytical techniques to **find solution to business problems**, such as cost minimization or profit maximization, or the optimization problems.
- ) Motivational research helps to determine why people behave in the manner they do with respect to market characteristics. More specifically, it is concerned with the analysis of the motivations underlying consumer behaviour. All these researches are very useful for business and industry, and are responsible for **business decision-making**.
- ) Research is equally important to social scientists for **analyzing the social relationships and seeking explanations to various social problems**. It gives intellectual satisfaction of knowing things for the sake of knowledge. It also possesses the practical utility for the social scientist to gain knowledge so as to be able to do something better or in a more efficient manner. The research in social sciences is concerned with both knowledge for its own sake, and knowledge for what it can contribute to solve practical problems.

### **Research Methods versus Methodology**

A research methodology is concerned with the systematic approach to solving a research problem by applying appropriate research methods. A clear research methodology is important for the consistency and accuracy of the outcome produced by the research methods.

Research methods are a small part of the whole research methodology process. Research methods are used to find a solution to the research problem. Research methods are the primary course to conduct research, and research methodology is all about the utilization of research methods

**Difference between:**

RESEARCH METHOD	RESEARCH METHODOLOGY
Research methods are the methods used by researchers to collect data to conduct research on a particular research topic.	A Research methodology is systematic approach to solve the research problem and to reach a new conclusion.
The objective of the research method is to find the solution.	The objective of the research methodology is to determine the solution by applying correct procedures of research.
Research methods are useful to apply during the latter stage of the research process.	Research methodologies are applied in the initial stage of the research being conducted.
Research methods are small part of research methodology.	A Research methodology is a multi-dimensional concept.
Research methods consist of various techniques where various studies and experiments are used to conduct research and reach an appropriate conclusion.	Research methodologies are used applied during the initial stage of the research to explain the purpose of chosen methods and how they will serve its function.
Research methods consist of different investigation techniques.	Research methodologies are a systematic strategy to achieve the decided objective.
Research method encompasses of carrying out an experiment, survey, test and so on.	Research methodology encompasses different techniques which are used during the performance of the experiment, surveys, and test, etc.

### **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:

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| 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. |



1. **Formulating the research problem:** The first and foremost stage in the research process is to select and properly define the research problem. A researcher should first identify a problem and formulate it, so as to make it amenable or susceptible to research. In general, a research problem refers to an unanswered question that a researcher might encounter in the context of either a theoretical or practical situation, which he/she would like to answer or find a solution to. Thus, identification of a research problem is the pre-condition to conducting research. A research problem is said to be the one which requires a researcher to find the best available solution to the given problem.
2. **Extensive literature survey:** Once the problem is formulated, a brief summary of it should be written down. It is compulsory for a research worker writing a thesis for a Ph.D. degree to write a synopsis of the topic and submit it to the necessary Committee or the Research Board for approval. At this juncture the researcher should undertake extensive literature survey connected with the problem. For this purpose, the abstracting and indexing journals and published or unpublished bibliographies are the first place to go to. Academic journals, conference proceedings, government reports, books etc., must be tapped depending on the nature of the problem. In this process, it should be remembered that one source will lead to another. The earlier studies, if any, which are similar to the study in hand should be carefully studied. A good library will be a great help to the researcher at this stage.
3. **Development of working hypotheses:** After extensive literature survey, researcher should state in clear terms the working hypothesis or hypotheses. Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences. As such the manner in which research hypotheses are developed is particularly important since they provide the focal point for research. They also affect the manner in which tests must be conducted in the analysis of data and indirectly the quality of data which is required for the analysis. In most types of research, the development of working hypothesis plays an important role. Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested. The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track. It sharpens his thinking and focuses attention on the more important facets of the problem. It also indicates the type of data required and the type of methods of data analysis to be used.
4. **Preparing the research design:** The research problem having been formulated in



will have to state the conceptual structure within which research would be conducted. The preparation of such a design facilitates research to be as efficient as possible yielding maximal information. In other words, the function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time and money. But how all these can be achieved depends mainly on the research purpose. Research purposes may be grouped into four categories, viz., (i) Exploration, (ii) Description, (iii) Diagnosis, and (iv) Experimentation.

5. **Determining sample design:** All the items under consideration in any field of inquiry constitute a 'universe' or 'population'. A complete enumeration of all the items in the 'population' is known as a **census inquiry**. Not only this, census inquiry is not possible in practice under many circumstances. For instance, blood testing is done only on sample basis. Hence, quite often we select only a few items from the universe for our study purposes. The items so selected constitute what is technically called a sample. The researcher must decide the way of selecting a sample or what is popularly known as the sample design. In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population. Thus, the plan to select 12 of a city's 200 drugstores in a certain way constitutes a sample design. Samples can be either probability samples or non-probability samples. With probability samples each element has a known probability of being included in the sample but the non-probability samples do not allow the researcher to determine this probability.
6. **Collecting the data:** In dealing with any real life problem it is often found that data at hand are inadequate, and hence, it becomes necessary to collect data that are appropriate. There are several ways of collecting the appropriate data which differ considerably in context of money costs, time and other resources at the disposal of the researcher. Primary data can be collected either through experiment or through survey. If the researcher conducts an experiment, he observes some quantitative measurements, or the data, with the help of which he examines the truth contained in his hypothesis.
7. **Execution of the project:** Execution of the project is a very important step in the research process. If the execution of the project proceeds on correct lines, the data to be collected would be adequate and dependable. The researcher should see that the project is executed in a systematic manner and in time. If the survey is to be conducted by means of structured questionnaires, data can be readily machine-processed. In such a situation, questions as well as the possible answers may be coded. If the data are to be collected through interviewers, arrangements should be

- 8. Analysis of data:** After the data have been collected, the researcher turns to the task of analyzing them. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences. The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researcher should classify the raw data into some purposeful and usable categories. Coding operation is usually done at this stage through which the categories of data are transformed into symbols that may be tabulated and counted. Editing is the procedure that improves the quality of the data for coding.
- 9. Hypothesis-testing:** After analyzing the data as stated above, the researcher is in a position to test the hypotheses, if any, he had formulated earlier. Do the facts support the hypotheses or they happen to be contrary? This is the usual question which should be answered while testing hypotheses. Various tests, such as Chi square test, t-test, F-test, have been developed by statisticians for the purpose. The hypotheses may be tested through the use of one or more of such tests, depending upon the nature and object of research inquiry. Hypothesis-testing will result in either accepting the hypothesis or in rejecting it. If the researcher had no hypotheses to start with, generalizations established on the basis of data may be stated as hypotheses to be tested by subsequent researches in times to come.
- 10. Generalizations and interpretation:** If a hypothesis is tested and upheld several times, it may be possible for the researcher to arrive at generalization, i.e., to build a theory. As a matter of fact, the real value of research lies in its ability to arrive at certain generalizations. If the researcher had no hypothesis to start with, he might seek to explain his findings on the basis of some theory. It is known as interpretation. The process of interpretation may quite often trigger off new questions which in turn may lead to further researches.
- 11. Preparation of the report or the thesis:** Finally, the researcher has to prepare the report of what has been done by him. Writing of report must be done with great care keeping in view the following: 1. The layout of the report should be as follows: (i) the preliminary pages; (ii) the main text, and (iii) the end matter. In its preliminary pages the report should carry title and date followed by acknowledgements and foreword. Then there should be a table of contents followed by a list of tables and list of graphs and charts, if any, given in the report. At the end of the report, appendices should be enlisted in respect of all technical data. Bibliography, i.e., list of books, journals, reports, etc., consulted, should also be given in the end. Index

