

MOOCS ON RESEARCH METHODOLOGY

WEEK 1ST

DAY 1 Lecture 1: Research Methodology: Introduction 1

by

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INTRODUCTION: MEANING AND DEFINITION

The word research is composed of two syllables, re and search re is a prefix meaning again, anew or over again search is a verb meaning to examine closely and carefully, to test and try, or to probe. Together they form a noun describing a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts or principles.

Research in simple terms refers to search for knowledge. It is a scientific and systematic search for information on a particular topic or issue. It is also known as the art of scientific investigation. Several social scientists have defined research in different ways.

In the *Encyclopedia of Social Sciences*, **D. Slesinger and M. Stephenson** (1930) defined research as *“the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in the construction of theory or in the practice of an art”*.

According to **Redman and Mory** (1923), research is a *“systematized effort to gain new knowledge”*. It is an academic activity and therefore the term should be used in a technical sense.

According to **Clifford Woody** (Kothari, 1988), research comprises *“defining and redefining problems, formulating hypotheses or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and finally, carefully testing the conclusions to determine whether they fit the formulated hypotheses”*.

CHARACTERISTICS OF RESEARCH

It is clear that research is an unbiased, structured, systematic and sequential method of enquiry directed towards a clear or implicit objective. But to qualify as research it must contain various characteristics. Henry Johnson mentions that research has following main characteristics:

1. It is empirical, i.e., it is based on observation and reasoning and not on speculation.
2. It is theoretical, i.e., it summarises data precisely giving logical relationship between propositions which explain causal relationship.
3. It is cumulative, i.e., generalizations / theories are corrected, rejected and newly developed theories are built upon one another.
4. It is non-ethical, i.e., scientists do not say whether particular things/events/ phenomena/ institutions /systems/structures are good or bad. They only explain them.

A good research study contains the following features:

- **Objectivity:** The main purpose of a research is to answer the research question. Research should be objective which helps in necessitating the formulation of a proper hypothesis. Lack of objectivity leads to a poor formulation of hypothesis and the entire process thereafter lacks any congruency between the research questions and the hypothesis.
- **Control:** A good research must be able to control all the variables. This requires randomization at all stages, e.g., in selecting the subjects, the sample size and the experimental treatments. This shall ensure an adequate control over the independent variables. This is the basic technique in all scientific experimentation—allowing one variable to vary while holding all other variables constant. Unless all variables except one have been controlled, one cannot be sure which variable has produced the results.
- **Rigorous:** you must be scrupulous in ensuring that the procedures followed to find answers to questions are relevant, appropriate and justified. Again, the degree of rigor varies markedly between the physical and social sciences and within the social sciences.
- **Systematic:** This implies that the procedure adopted to undertake an investigation follow a certain logical sequence. The different steps cannot be taken in a haphazard way. Some procedures must follow others.
- **Valid and verifiable:** This concept implies that whatever you conclude on the basis of your findings is correct and can be verified by you and others.
- **Empirical:** This means that any conclusions drawn are based upon hard evidence gathered from information collected from real life experiences or observations.
- **Critical:** Critical scrutiny of the procedures used and the methods employed is crucial to a research enquiry. The process of investigation must be foolproof and free from

drawbacks. The process adopted and the procedures used must be able to withstand critical scrutiny. For a process to be called research, it is imperative that it has the above characteristics.

- **Precision:** A research should never be ambiguous. One has to make it as exact as necessary. The facts and figures should be exact to the extent possible. Precision does not restrict to just the data or the facts and findings, but also extends to the measurement factor too.

SIGNIFICANCE OF RESEARCH

- **To Gather Necessary Information:** Research provides you with all necessary information in field of your work, study or operation before you begin working on it. For example, most companies do research before beginning a project in order to get a basic idea about the things they will need to do for the project. Research also helps them get acquainted with the processes and resources involved and reception from the market. This information helps in the successful outcome of the project.
- **To Make Changes:** Sometimes, there are in-built problems in a process or a project that is hard to discover. Research helps us find the root cause and associated elements of a process. The end result of such a research invokes a demand for change and sometimes is successful in producing changes as well. For example, many U.N. researches have paved way for changes in environmental policies.
- **Improving Standard of Living:** Only through research can new inventions and discoveries come into life. It was C.V Raman's research that prompted invention of radio communication. Imagine how you would have communicated had Graham Bell not come out with the first ever practical telephone! Forget telephones, what would have happened if Martin Cooper did not present the world the concept of mobile phones! Addicted as we are to mobile phones, we need to understand that all the luxuries and the amenities that are now available to us are the result of research done by someone. And with the world facing more and crisis each day, we need researchers to find new solutions to tackle them.
- **For A Safer Life:** Research has made ground breaking discoveries and development in the field of health, nutrition, food technology and medicine. These things have improved the life expectancy and health conditions of human race in all parts of the world and helped eradicate diseases like polio, smallpox completely. Diseases that

were untreatable are now history, as new and new inventions and research in the field of medicine have led to the advent of drugs that not only treat the once-incurable diseases, but also prevent them from recurring.

- **To Know the Truth:** It has been proved time and again that many of established facts and known truths are just cover ups or blatant lies or rumors. Research is needed to investigate and expose these and bring out the truth.
- **Explore Our History:** Research about our planets history and human history has enabled us to learn and understand more about our forefathers and helped us learn from their mistakes and absorb good things from their life. Research about the planet's history and existence has told us a lot about how things will shape up in years to come and how we need to respect our planet and work closely together to stop global warming and other scenarios of destruction.
- **Understanding Arts:** This helps us in understanding the work of artists in literature, paintings, sculptures and everything that can be attributed with artistic touch. If no research is conducted into any of these, we will never be able to understand any of these as per the artist's imagination. Also, a lot of great artistic work is hidden in the shadows of history, which needs to be drawn out.
- **Motives to do Research:** Research is the result of advancing knowledge created in the past. There are people from all walks of life that contribute to gathered information. These are ordinary people and extraordinary people. They include teachers, students, scientists, professors, scholars, business owners, librarians, book keepers, writers, politicians and many more unknown out there. These are everyday citizens we interact with. They all help with the flow information that people use for self-help.

TYPES OF RESEARCH:

Research can be classified from three perspectives:

1. Application of research study
2. Objectives in undertaking the research
3. Inquiry mode employed

APPLICATION:

From the point of view of application, there are two broad categories of research:

- Pure research and
- Applied research.

- **Pure research** involves developing and testing theories and hypotheses that are intellectually challenging to the researcher but may or may not have practical application at the present time or in the future. The knowledge produced through pure research is sought in order to add to the existing body of research methods.
- **Applied research** is done to solve specific, practical questions; for policy formulation, administration and understanding of a phenomenon. It can be exploratory, but is usually descriptive. It is almost always done on the basis of basic research. Applied research can be carried out by academic or industrial institutions. Often, an academic institution such as a university will have a specific applied research program funded by an industrial partner interested in that program.

OBJECTIVES:

From the viewpoint of objectives, a research can be classified as –

- **Descriptive** research attempts to describe systematically a situation, problem, phenomenon, service or programme, or provides information about , say, living condition of a community, or describes attitudes towards an issue.
- **Correlation** research attempts to discover or establish the existence of a relationship/ interdependence between two or more aspects of a situation.
- **Explanatory** research attempts to clarify why and how there is a relationship between two or more aspects of a situation or phenomenon.
- **Exploratory** research is undertaken to explore an area where little is known or to investigate the possibilities of undertaking a particular research study (feasibility study / pilot study). In practice most studies are a combination of the first three categories.

INQUIRY MODE:

From the process adopted to find answer to research questions the two approaches are:

- Structured approach

- Unstructured approach

- **Structured approach:** The structured approach to inquiry is usually classified as quantitative research. Here everything that forms the research process- objectives, design, sample, and the questions that you plan to ask of respondents- is predetermined.

It is more appropriate to determine the extent of a problem, issue or phenomenon by quantifying the variation e.g. how many people have a particular problem? How many people hold a particular attitude?

- **Unstructured approach:** The unstructured approach to inquiry is usually classified as qualitative research. This approach allows flexibility in all aspects of the research process. It is more appropriate to explore the nature of a problem, issue or phenomenon without quantifying it.

Main objective is to describe the variation in a phenomenon, situation or attitude. e.g., description of an observed situation, the historical enumeration of events, an account of different opinions different people have about an issue, description of working condition in a particular industry.

Both approaches have their place in research. Both have their strengths and weaknesses. In many studies you have to combine both qualitative and quantitative approaches. For example, suppose you have to find the types of cuisine accommodation available in a city and the extent of their popularity.

PROBLEMS AND PRECAUTIONS IN EFFECTIVE RESEARCH

Business Research in India is facing a lot of difficulties especially in case of Exploratory Research, it may be of varied reasons, and some are discussed herein under:

- (a). It is important to be aware that exploratory research should never take the place of quantitative research. Doing so, 'could *Introduction to Research* lead to misinterpretations and poor judgments.
- (b). The greatest concern, however, is that of rejecting a good idea during the initial stages of exploratory research, thus voiding it from being analyzed and targeted correctly.

- (c). As secondary data has been collected for purposes other than those outlined in the research study, its usefulness may be restricted in a few ways.
- (d). Biased research transpires when the research process is executed improperly, resulting in incorrect findings.
- (e). The Researchers are not scientifically trained. So they generally make error while selecting the right Research method.
- (f). Choosing of population for survey is difficult. For example, if you want to make survey of consumer goods in the urban areas it will give a different result than if you make the survey in the rural areas.
- (g). Due to collection of large data, sometimes the researcher is unable to make correct interpretation leading to false result calculation.
- (h). As the decision is based on the paradigm of the researcher, so sometimes it is biased and incorrect.
- (i). While making a Business Research, the secrecy of the business is generally leaked to its competitors. So, in such case the data are not provided to the researcher.
- (j). Research is time taking process. It may require time which may span over many years. Also in the beginning of the Research, the researcher is not sure, how much result will he get at the end of the research.
- (k). Since Research is such a long process. So, it requires lot of funds, and that fund has no return unless the research work is complete.
- (l). Many Social Research face stiff objection of the society, if it is about the changing trend in the society. In such case, it becomes very difficult for the researcher to collect data and interpret it. (m) Researchers group in India generally face the problem of discipline, where due to large volume of data, a researcher may predict the data to be collected.

This leads to a bias data collection. Data should be collected initially and at the time of making the decisions or conclusion, interpretations should be made.