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Research Methodology in Economics

SEMESTER - IV

ECONOMICS

BLOCK 1

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COURSE INTRODUCTION

This Course entitled Research Methodology in Economics is one of the compulsory courses in your fourth semester MA in Economics programme. You might be aware that research plays an important role in every walk of our life. Similarly, in the development of an organisation or a country, research plays an instrumental role. It is expected that this course will be a motivation to you to undertake research as a career in your succeeding phases of academic career. This course will also be helpful in clearing the Entrace Test that is often conducted for M.Phil and PhD programmes. This course contains a total of 14 units and has been divided into two blocks of seven units each.

BLOCK INTRODUCTION

This is the first block of the Course Research Methodology in Economics and contains the first seven Units of the Course. The first unit introduces you a few basic concepts in research. Here, the meaning and definition of research, its nature, types as well as the approach to the scientific method of research and research ethics have been discussed. In Unit 2, objectives and scope of research have been discussed, basically from the lens of soical sciences. Toward the end of the unit, the limitations of soical science have also been discussed. The third unit is on types of research. Here, the different types of research based on the broad classifications of purpose, process and outcome have been discussed. Other than that, the concepts of conceptual research and empirical research have also been taken up. The next unit has been entitled Research in Economics. Here, the nature of research in Economics, its importance and scope have been discussed. This unit shall offer you an overview on the various research dimensions in the discipline of Economics. The fifth Unit is on review of literature. Here, the concept of review of literature, the 5 Cs of literature review as well as it's need and various sources have been discused. The sixth unit deliberates on research problem. After going through this Unit, you will be able to identify the research problem and a few related concepts have been discussed. The last unit of this Block 1 is on research design. Here the concept of research design, the features of a good research design, the different steps and the different types of research design have been discussed.

The next block contains the remaining seven units. The next block starts with the discussion on sampling techniques and finally will come to an end with the discussion on interview techniques.

While going through a unit, you will notice some along-sode boxes, which have been included to help you know some of the difficult, unseen terms. Some 'ACTIVITY' (s) has been included to help you apply your own thoughts. Again, we have included some relevant concepts in 'LET US KNOW' along with the text. At the end of sections, you will get 'CHECK YOUR PROGRESS' questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with 'ANSWERS TO CHECK YOUR PROGRESS' given at the end of each unit.

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UNIT 1: BASIC CONCEPTS OF RESEARCH

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Research: Meaning and Definition

1.4 Nature of Research

1.5 Types and Importance of Research

1.6 Elements of Scientific Methods

1.7 Research Ethics

1.8 Let Us Sum Up

1.9 Further Reading

1.10 Answers to Check Your Progress

1.11 Model Questions

1.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- deduce the meaning of research and put forward a proper definition
- discuss the characteristics, objectives and motivation for research
- discuss the nature of research
- state the different types of research
- outline the importance of research
- discuss the elements of scientific methods
- deliberate on research ethics

1.2 INTRODUCTION

This is the first unit of the Course on *Research Methodology in Economics*. This is an introductory unit and it introduces you to the field of research. Here the basic concepts of research have been discussed, viz., its meaning and definition, characteristics, objectives, nature, types, importance etc. Further, the elements/steps of the scientific approach to research has also been examined. Finally, certain important topics on

research ethics have been discussed to enable you to study the rest of the units of this course without any difficulty.

It is expected that this course will be a motivation to you to undertake research as a career. Further, please note that once you step into the field of research, always try to maintain a high degree of ethical research credibility. It is expected that this unit shall be helpful towards that direction also.

1.3 RESEARCH: MEANING AND DEFINITION

Research is a systematic and scientific inquiry to find new knowledge and question the validity of the existing knowledge. It may also be described as an activity that leads us to finding new facts, information, assisting us in verifying the available knowledge and in making us question things that are difficult to understand as per existing data.

According to (Thyer, 2001), "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."

According to Webster, 'Research is a studious inquiry or examination-critical and exhaustive investigation or experimentation having for its aim the discovery of new facts and their correct interpretation'. From this definition it can be said that research is a careful critical inquiry or examination in seeking facts and principles; diligent investigation in order to ascertain something.

O. Slesinger and M. Stephension in 'The Encyclopaedia, of social sciences define research as "the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practise of an art'.

According to American Sociologist Earl Robert Babbie, "Research is a systematic inquiry to describe, explain, predict, and control the observed phenomenon. Research involves inductive and deductive methods."

Katzer, Cook & Crough have defined research as follows:

"We define research here as the systematic process of collecting and analyzing information (data) in order to increase our understanding of the phenomenon with which we are concerned or interested."

Characteristics of Research: Based on the above definitions, the following characteristics of Research can be outlined:

- Research is directed towards the solution of a problem.
- Research is based upon observable experience or empirical evidence.
- Research demands accurate observation and description.
- Research involves gathering new data from primary sources or using existing data for a new purpose.
- Research activities are characterized by carefully designed procedures.
- Research requires expertise i.e., skill necessary to carryout investigation, search the related literature and to understand and analyse the data gathered.
- Research is objective and logical – applying every possible test to validate the data collected and conclusions reached.
- Research is all about the search of answers to unresolved issues.
- Research requires courage on the part of researcher so as to move in the uncertain and unpredictable situation.
- Research is characterized by patient and unhurried activity.
- Research is carefully recorded and reported.
- A systematic approach must be followed for accurate data. Rules and procedures are an integral part of the process that set the objective. Researchers need to practice ethics and a code of conduct while making observations or drawing conclusions.
- Research is based on logical reasoning and involves both inductive and deductive methods.
- The data or knowledge that is derived in research is in real time from actual observations in natural settings.
- In research, there is an in-depth analysis of all data collected so that there are no anomalies associated with it.

- Research creates a path for generating new questions. Existing data helps create more opportunities for research.
- Research is analytical in nature. It makes use of all the available data so that there is no ambiguity in inference.
- Accuracy is one of the most important aspects of research. The information that a researcher obtains should be accurate and true to its nature. For example, laboratories provide controlled environment to collect data. Accuracy is measured in the instruments used, the calibrations of instruments or tools, and the final result of the experiment.

Objectives of Research: The objectives of research can be discussed under the following broad heads:

- To gain familiarity with a phenomenon or to achieve new insights to it.
- To portray accurately the characteristics of a particular individual situation or of a group.
- To determine the frequency with which something occurs or with which it is associated with something else.
- To test a hypothesis of a causal relationship between variables.

Motivations for Undertaking Research: What makes people to undertake research? Some of the answers are as follows:

- Desire to get a research degree along with its benefits.
- Desire to face the challenge in solving the unsolved problem and thereby contribute towards better social outcome.
- Desire to get intellectual joy of doing some creative and original work.
- Desire to offer service to society.
- Desire to get respectability.

1.4 NATURE OF RESEARCH

The nature of a research endeavour may be summarised as follows:

- **Systematic:** By definition, research is a systematic study. A researcher has to follow a defined systematic procedure to conduct research.
- **Scientific:** Research follows a scientific procedure. It is worth

mentioning here that the scientific procedure is being followed for ages. No one put forward it. It evolved through a process. We shall discuss the scientific approach to research in the subsequent section 1.6.

- **Objectivity:** Research is objective in nature. As an ethical practice, a researcher has to conduct his research objectively, without any personal bias.
- **Definiteness:** The outcome of research is definite. The researcher deduces certain clear outcomes at the end of his/her investigation.
- **Verifiability:** Research outcomes are verifiable in nature. What it means is that the results obtained by a researcher must be verifiable. In other words, if another researcher conducts the same study, in the same situations and with the same data set, he/she must come with similar results. This also signifies that the research activity is objective.
- **Generality:** Research also helps to arrive at certain general conclusions. Based on research findings, certain general conclusions can be derived.
- **Predictability:** Research activities are predictable in nature. In most of the cases, the researcher examines certain research hypothesis. These hypothesis signifies that the research activity are to a great extent predictable in nature. This is also valid on the ground that research is based on the previous research. And we often re-examine and re-validate the findings of the earlier researchers.
- **Modifiability:** Research findings are modifiable. What it means is that the research settings of the previous studies can be modified to arrive at more efficient, desired research outcomes.
- **Dynamicity:** Research is a dynamic process. Research is often conducted on both historical and current issues. Further, with the passage of times, newer tools and techniques are used. This significantly raises the efficiency of research.

1.5 TYPES AND IMPORTANCE OF RESEARCH

1.5.1 Types of Research

Research can be broadly classified based on its purpose, its process

and its outcome.

Based on purpose, research can be classified as:

- Exploratory Research
- Descriptive Research
- Analytical Research
- Predictive Research

Based on process, research can be classified as:

- Quantitative Research.
- Qualitative Research.
- Mixed Method Research

Based on outcome, research can be classified as:

- Applied Research.
- Fundamental/ Basic/ Pure Research.
- Action Research.

We shall discuss these different types of research in some detail later in Unit 3.



CHECK YOUR PROGRESS

Q 1: Define research. Answer in about 60 words

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Q 2: What does objectivity of research imply? Answer in about 30 words.

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1.5.2 Importance of Research

The importance of research can be discussed under the following broad points:

- It's a tool for gaining knowledge and making learning more

accessible.

- The importance of research can be visible if we see it as the only means of proving theories.
- Through research, we can gather updated information and to-the-point data.
- By differentiating between valuable and vague data, it creates credibility.
- It helps us succeed in every walk of life.
- It is a Means to Find, Gauge, and Seize Opportunities.

Let us discuss the above points in some detail.

- **Research is a tool to Acquire Knowledge Effectively:** All professions and non-professionals, including students and professors, must conduct research. It is also crucial for aspiring and experienced authors, both offline and online.

  Non-professionals who value learning will benefit from performing research since it will provide them with the world of information and skills to help them survive and enhance their lives. Finding an intriguing topic to talk and/or write about among experts and scribes, should go beyond personal experience. The purpose of conducting research can include determining what the general public wants to know or what researchers want people to realize or consider. As a result, research is critical to knowledge generation and vice versa.

  A factual proposition in a person's mind is frequently described as knowledge. It essentially refers to facts derived from objective observations and/or research findings that the human brain has processed. It can be obtained in various ways, including reading books and articles, listening to experts, watching documentaries or investigative shows, undertaking scientific experiments, and connecting with others. Facts gathered during research can be cross-referenced with other sources to guarantee their integrity and authenticity.

- **It's used to prove theories:** Just like our brain development

needs research, theoretical proofs need research, too. To understand the importance of research, we should realise that our life revolves around theories, and if we remove research from the equation, we can see that our lives are nothing but a mess. Moreover, we may derive a different point of view which we do not have to keep things to ourselves, and instead, we do it to inform humankind about what change our theory might bring. The primary purpose of all the research has kept us connected.

- **Provides the latest information:** Knowledge is one of the core items human beings have desired since the start of the human race. Being more knowledgeable and powerful has made us addicted to the latter. And this is true as well. The countries with the most knowledge base are the ones that have shown development. However, there can be other reasons for doing research. It is a well-known fact that research and development (R&D) plays a crucial role in the advancement of a country and of any organisation.
- **Research builds credibility:** Research provides a strong basis for us to construct our thoughts and beliefs on. Through proper research, we can be confident about our statement/argument. When we do our proper research on any topic, we can effectively defend our stand/point of view on it. For this, we have to do our research using the most reliable sources. On the contrary, if our research is based on opinions from non-experts, it won't be much credible. When our research is good, people are more likely to pay attention to our views/arguments.
- **Helps us succeed in every walk of life:** We need to do lot of research for undertaking an informed and effective decision. For example, suppose you want to buy a smartphone. Before its purchase, you will definitely a great deal of research on it. The sources of such research may be a reliable website, or customer reviews, or your reliable friends who have already used such mobiles. Similarly, while opting for any course, we always conduct

research on the course structure, fee structure, prospects as well as the provider and the resource persons involved (i.e., the institution). Such a research helps us protecting ourselves from wastage of our money, time and effort. The word of caution here is that in conducting such research we must use the best and most reliable resources.

Looking into a larger perspective, the public authority also has to conduct a great deal of research while designing and implementing a public policy. Only proper research can help the public authority to come out with the best and effective public policy. For example, in the implementation of the recent New Education Policy, 2020, we saw that public opinions were sought on a draft policy before finalisation of the policy.

Similarly, investment in R&D help a business organisation to gain competitive advantage. Finding ways to make things run more smoothly and differentiate a company's products from those of its competitors can help to increase a company's market worth.

- **Means to Find Gauge and Seize Opportunities:** Research also helps people build their potential and attain objectives with different opportunities. These could include gaining jobs, scholarships, education, projects, etc. For example, research is vital for those who are seeking a job or brighter pastures. Here again, through proper research, the unemployed will boost their chances of discovering potential employers through employment posts or agencies, but they need to find out if employment opportunities are authentic. Unscrupulous recruitment agencies who may be engaging in criminal recruitment and/or trafficking might be the creepy but hopeful jobseeker or migrant worker if no inquiry is conducted. As a result, research is critical in identifying and seizing the correct opportunity in every aspect of our lives.

1.6 ELEMENTS OF SCIENTIFIC METHODS

The scientific method is a process for experimentation that is used to explore

observations and answer questions. It follows therefore that do all scientists follow exactly this process? No. Some areas of science can be more easily tested than others. For example, scientists studying how stars change as they age or how dinosaurs digested their food cannot fast-forward a star's life by a million years or run medical exams on feeding dinosaurs to test their hypotheses. When direct experimentation is not possible, scientists modify the scientific method. In fact, there are probably as many versions of the scientific method as there are scientists! But even when modified, the goal remains the same: to discover cause and effect relationships by asking questions, carefully gathering and examining the evidence, and seeing if all the available information can be combined in to a logical answer.

Even though we show the scientific method as a series of steps, keep in mind that new information or thinking might cause a scientist to back up and repeat steps at any point during the process. A process like the scientific method that involves such backing up and repeating is called an iterative process.

Key Elements of Scientific Method: The scientific method describes the processes by which scientists gain knowledge about the world. It's characterized by seven key elements: questions, background research, hypotheses, experiments, observations, analyses, and conclusions.

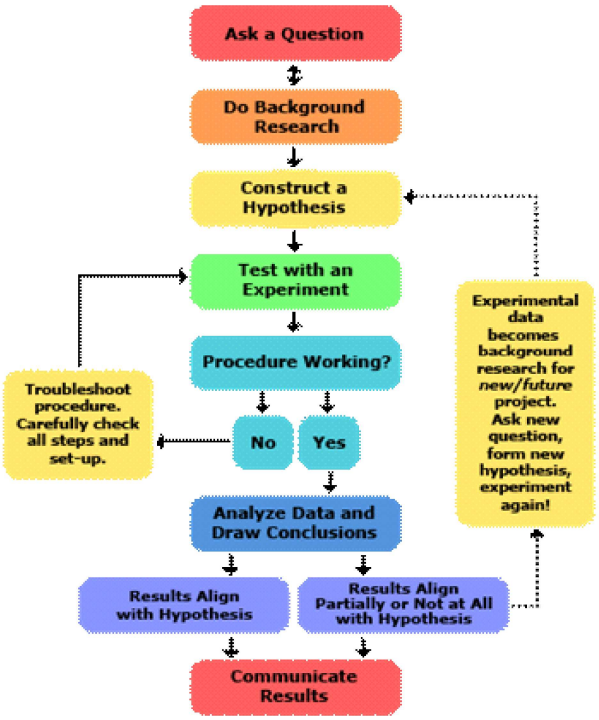
This key elements of the scientific method can also be expressed as seven steps of research. This has been shown below.

Steps in Scientific Research: The seven steps of the scientific research method/process are:

- Ask a question.
- Perform research (background research).
- Establish your hypothesis.
- Test your hypothesis by conducting an experiment.
- Make an observation (Procedure check)
- Analyse the results and draw a conclusion.
- Present the findings.

These seven steps have been shown graphically in Figure 1.1.

Figure 1.1: Key Elements/Steps of Scientific Research



In Figure 1.1, please note that the fifth phase of making an observation (or procedure check) is very crucial in the sense that we may have to move to the previous step of testing with an experiment in case any procedural lapse is noticed. Similarly, if the results arrived (in the sixth phase) are not conforming to the hypothesis, we may also have to move back again to the construction of hypothesis, i.e., to construct new hypothesis or make new experiment etc. However, this depends to a large extent on the researcher.

Now, we shall discuss these steps in some detail.

(1) **Ask a Question:** The scientific method starts when a researcher raises a question about something that the she/he observes: How, What, When, Who, Which, Why, or Where?

(2) **Do Background Research:** Rather than starting from scratch in putting together a plan for answering those questions, a researcher has to be a probing scientist using library, Internet research to find the best way to do things.

(3) **Construct a Hypothesis:** A hypothesis is an educated guess about how things work. It is an attempt to answer the research question with an explanation that can be tested. A good hypothesis allows the researcher make a prediction beforehand.

(4) **Test the Hypothesis by Doing an Experiment:** The researcher conducts experiment/tests to examine whether the prediction is accurate and thus the research hypothesis is supported or not. It is important for a researcher to conduct such experiment/test fair and free from any prejudices. The researcher can conduct a fair test by making sure that she/he change only one factor at a time while keeping all other conditions the same.

The researcher should also repeat the experiments several times to make sure that the first results weren't just an accident.

(5) **Procedural check:** As the testing of hypothesis conducted, the researcher also has to check that all the procedures were properly maintained. In case of any lapse in the procedure, the researcher has to repeat the experiment.

(6) **Analysis of Data and Draw a Conclusion**: Once the experiment is complete, the researcher has to collect the measurements and analyse them to see if they support the research hypothesis or not.

Scientists often find that their predictions were not accurate and their hypothesis was not supported, and in such cases they will communicate the results of their experiment and then go back and construct a new hypothesis and prediction based on the information they learned during their experiment. This starts much of the process of the scientific method over again. Even if they find that their hypothesis was supported, they may want to test it again in a new way.

(7) **Communicate the Results:** To complete the research activity, the researcher has to communicate the results to others in a final report and/or a display board. The professional scientists do almost exactly the same thing by publishing their final report in a scientific journal or by presenting their results on a poster or during a talk at a scientific meeting. In a science fair, judges are interested in your findings regardless of whether or not they support your original hypothesis.



CHECK YOUR PROGRESS

Q 3: How does investment in R&D help an organisation? Answer in about 60 words.

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Q 4: Mention the different stages of scientific approach to research. Answer in about 30 words.

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1.7 RESEARCH ETHICS

Ethics generally implies those moral principles which govern an individual's behaviour and accordingly the activities performed by him or her. Webster's Dictionary defines ethical behaviour as, 'conforming to the standards of a conduct of a given profession or group'. But what is to be considered as right or wrong may vary from person to person and group to group. Ethics are important while conducting research also.

According to the Oxford Dictionary of Sociology, research ethics refers to, 'the application of moral rules and professional codes of conduct to the collection, analysis, reporting, and publication of information about research subjects, in particular active acceptance of subject's right to privacy, confidentiality, and informed consent.'

On a broader perspective, research ethics provides guidelines for the responsible conduct of research. In addition, it educates and monitors scientists conducting research to ensure a high ethical standard. The following discussion offers a general summary of some ethical principles in research:

- **Honesty: A** researcher has to honestly report data, results, methods and procedures, and publication status. Do not fabricate, falsify, or misrepresent data.
- **Objectivity: A** researcher has to strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research.
- **Integrity:** A researcher has to keep promises and agreements; act with sincerity; strive for consistency of thought and action.
- **Carefulness:** A researcher has to avoid careless errors and negligence; carefully and critically examine his/her own work and the work of the peers. A researcher also has to keep good records of research activities.
- **Openness:** A researcher should be open to share data, results, ideas, tools, resources. A researcher also should be open to receive criticisms and new ideas.
- **Respect for Intellectual Property:** A researcher has to honour patents, copyrights, and other forms of intellectual property. He/she should not use unpublished data, methods, or results without permission. A researcher also has to give credit where credit is due. Never plagiarise.
- **Confidentiality:** A researcher also has to protect confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records.
- **Responsible Publication:** A researcher has to publish in order to advance in research and scholarship, not to advance just in one's career. Wasteful and duplicative publication must be avoided.
- **Responsible Mentoring:** A researcher also has to educate, mentor, and advise students. The researcher must promote their welfare and allow them to make their own decisions.
- **Respect for Colleagues:** A researcher has to respect his/her own colleagues and treat them fairly.
- **Social Responsibility:** A researcher also has to strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy.
- **Non-Discrimination:** A researcher must avoid discrimination against

colleagues or students on the basis of sex, race, ethnicity, or other factors that are not related to their scientific competence and integrity.

- **Competence:** A researcher has to maintain and improve own professional competence and expertise through lifelong education and learning. She/he should take steps to promote competence in science as a whole.
- **Legality:** A researcher also needs to know and obey relevant laws and institutional and governmental policies.
- **Animal Care:** A researcher has to show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments.
- **Human Subjects Protection:** When conducting research on human subjects, a researcher has to minimize harms and risks and maximize benefits; respect human dignity, privacy, and autonomy.



1.6 LET US SUM UP

- Research is a systematic and scientific inquiry to find new knowledge and question the validity of the existing knowledge. It may also be described as an activity that leads us to finding new facts, information, assisting us in verifying the available knowledge and in making us question things that are difficult to understand as per existing data.
- Research can be broadly classified based on its purpose, its process and its outcome.
- The scientific method is a process for experimentation that is used to explore observations and answer questions
- Even though we show the scientific method as a series of steps, keep in mind that new information or thinking might cause a scientist to back up and repeat steps at any point during the process. A process like the scientific method that involves such backing up and repeating is called an iterative process.
- The scientific method describes the processes by which scientists gain knowledge about the world. It's characterized by seven key

elements: questions, background research, hypotheses, experiments, observations, analyses, and conclusions.

- Ethics generally implies those moral principles which govern an individual's behaviour and accordingly the activities performed by him or her.
- On a broader perspective, research ethics provides guidelines for the responsible conduct of research. In addition, it educates and monitors scientists conducting research to ensure a high ethical standard.



1.7 FURTHER READING

(1) Ahuja, R. (2018). *Research Methods.* Jaipur: Rawat Publications.

(2) Kothari, C.R. (2011). *Research Methodology, Methods and Techniques.* New Age International (P) Ltd.

(3) Kumar, R. (2011). *Research Methodology*. New Delhi: SAGE Publications India Pvt. Ltd.



1.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Research may be defined as an activity that leads us to finding new facts, information, assisting us in verifying the available knowledge and in making us question things that are difficult to understand as per existing data.

Ans to Q No 2: Research is objective in nature. As an ethical practice, a researcher has to conduct his research objectively, without any personal bias.

Ans to Q No 3: Investment in R&D help a business organisation to gain competitive advantage. Finding ways to make things run more smoothly and differentiate a company's products from those of its competitors can help to increase a company's market worth.

Ans to Q No 4: The seven steps of the scientific research method/process are:

(a) Ask a question.

(b) Perform research (background research).

(c) Establish your hypothesis.

(d) Test your hypothesis by conducting an experiment.

(e) Make an observation (Procedure check)

(f) Analyse the results and draw a conclusion.

(g) Present the findings.



1.9 MODEL QUESTIONS

Answer the following questions in about 300-400 words.

Q 1: Discuss the characteristics, objectives and motivation for research.

Q 2: What do you understand by the nature of research

Q 3: Enumerate s the different types of research.

Q 4: Outline the importance of research.

Q 5: Analyse the different steps of scientific methods of research.

Q 6: Describe the important ethical issues associated the conduct of research.

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UNIT 2: OBJECTIVES AND SCOPE OF RESEARCH

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 Concept of Social Research

2.4 Objectives and Scope of Research in Social Science

2.5 Problems and Limitations of Social Science Research

2.6 Let Us Sum Up

2.7 Further Reading

2.8 Answers to Check Your Progress

2.9 Model Questions

2.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the concept of social research
- describe the objectives of research in social science
- discuss the scope of research in social science
- enumerate the major problems and limitations of social science research.

2.2 INTRODUCTION

In the previous unit, we discussed a broad preliminary overview on the basics of research. In this unit, we shall basically focus on social research. Thus, this unit will be helpful for you in acquiring a fair idea about the concept of social research, its objectives, scope and also about the major problems and limitations it faces with. In a way, this Unit shall introduce you to the field of social science research. As a post-graduate learner in Economics, which is one of the major branches in social science, this Unit will work as a building block to help you gaining pratical knowledge of social science research.

2.3 CONCEPT OF SOCIAL RESEARCH

Social sciences are not exact science like physical sciences. It deals with human beings. Human nature and the interaction between man and environment are so complex that it is more difficult to comprehend and predict human behaviour than the physical phenomena. Social science research is a systematic method of exploring, analysing and conceptualizing human life in order to extend, correct or verify knowledge of human behaviour and social life. Social research seeks to find explanations to unexplained phenomena, to clarify the doubtful and correct the misconceived fact of social life. It involves the application of scientific method for understanding and analysing of social life in order to correct and verify the existing knowledge as a system.

The main idea behind social research is to discover new inter-relations, new knowledge, new facts and also to verify old ones. Human behaviour may be governed by certain values and laws. The main purpose of social research is to discover those laws which can provide proper guidelines for studying human contact and behaviour. It is difficult to see the underlying uniformities in the diversity of complex human behaviour. In a broad perspective, social research can be defined as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalisation, principles or theories resulting in prediction and possibly ultimate control of events in society. It attempts to answer and solve social problems.

According to C. A. Moser, "Social research is a systematized investigation to gain new knowledge about social phenomenon and problems."

P. V. Young described social in the following broad and comprehensive way:

> "Social Research may be defined as a scientific undertaking which by means of logical and systematized techniques, aims to discover new factor verify a test old facts, analyse their sequence, interrelationship and causal explanation which were derived within an appropriate theoretical frame of

reference, develop new scientific tolls, concepts and theories which would facilities reliable and valid study of human behaviour. A researcher's primary goal distant and immediate is to explore and gain an understanding of human behaviour and social life and thereby gain a greater control over time".

2.4 OBJECTIVES AND SCOPE OF RESEARCH IN SOCIAL SCIENCE

The aim of social research, like research in natural sciences, is to discover new facts or verify and test old social facts. It tries to understand human behaviour and its interaction with the environment and social institutions. It also tries to find out the causal connection between human activities and natural laws governing them. Another aim of social research is to develop new scientific tools, concepts and theories, which would facilitate the reliable and valid study of human behaviour and social life.

Social research follows the norms and tools of natural science, which emphasises validity, reliability and verifiability of the phenomenon studied. The scientific rigour in social science research implies objectivity, neutrality and empirically produced evidence. Empiricism comprises of the observation, collection, analysis and interpretation of data.

Social research refers to research conducted by social scientists from various disciplines dealing with human life, human behaviour, social groups and social institutions. They consist of Anthropology, Behaviour Science, Commerce, Demography, Economics, Education, Geography, History, Law, Linguistics, Management, Political Science, Psychology, Public Administration, Sociology, and Social Work. These disciplines have their own values, terminology, methods and techniques to understand social phenomena. Every group of social phenomena, every phase of human life, and every stage of past and present development are fields of inquiry for social scientists.

BROAD OBJECTIVES OF SOCIAL RESEARCH: The broad objectives of social research are enumerated below.

- **Development of knowledge:** As we know 'science' is the systematic

body of knowledge which is recorded and preserved. The main objective of any research is to add to the existing knowledge. Similarly, social research is an organised and scientific effort to acquire further knowledge about the problem in question. It helps us to obtain and add to the knowledge of social phenomena. This is one of the most important objectives of social research.

- **Scientific study of social life:** Social research is an attempt to acquire knowledge about the social phenomena. Women and men, being a part of society, social research studies a human being as an individual, examines human behaviour and collects data about various aspects of a human's social life and formulates laws in this regard. Once the law is formulated, the scientific study tries to establish the interrelationship between these facts. Thus, the scientific study of social life is another major objective of social research.
- **Welfare of humanity:** The ultimate objective of a social science study is often and always to enhance the welfare of humanity.
- **Classification of facts:** Social research aims to clarify facts. The classification of facts plays an important role in any scientific research
- **Social control and prediction:** The ultimate objective of any research undertaking is to predict the behaviour of particular types of individuals under specified conditions. In social research we generally study the social phenomena and events, as well as the factors that govern and guide them.

In short, under social research we study social relation and their dynamics.



CHECK YOUR PROGRESS

Q 1: Define social research. Answer in about 60 words.

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Q 2: Mention any two important aims of social research. Answer in about 60 words.

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SCOPE OF SOCIAL RESEARCH: The scope of social research can be discussed under the following broad headings:

- **Demographic and Social Statistics, Methods and Computation:** Demography is the study of changes and population trends using resources such as birth data, death and disease and others. Social Statistics, Methods and Computational involve the collection and analysis of quantitative and qualitative data.
- **Developmental Study, Human Geography and Environmental Planning:** Developmental study is a multidisciplinary branch of social sciences that discusses about various social and economic issues related to the development and study of poor countries. Human geography studies people, society and culture, especially regarding the impact on the environmental changes. Environmental planning explores decision-making process in managing the system of human and nature relationship.
- **Economics, Management and Business Study:** Economics tries to understand how individuals interact in the social structure to answer key questions about the production and exchange of goods and services. Management and Business Study explore various aspects related to business management such as strategic and operational, organizational psychology, work relationship, marketing, accounting, finance and logistics.

- **Education, Social Anthropology and Linguistics:** Education is one of the most important social sciences that explores how people learn and develop. Social anthropology is the study of how society and human social structures are organized and understandable. Linguistics focuses on language and how people communicate through the spoken voice and words.
- **Legal, Economic and Social History:** Legal framework focuses on the rule made by the government and people to make sure the society becoming more orderly. Economic and Social History see the past events to learn from history and to understand more the process of contemporary society.
- **Politics and International Relations:** Politics focuses on democracy and the relationship between humans and policy at all levels from the individual to the national and international levels. International Relation is the study of relationship among countries, including the role of other organizations.
- **Psychology and Sociology:** Psychology studies the human mind and tries to understand how people and groups experience a variety of emotions, ideas, and awareness. Sociology involves a group of people, not individuals, and tries to understand how people relate to each other and function as a society or a social sub-group.
- **Technology Study:** Technology Study relates to the role of technology in society, the policy and debates that form modern technology.
- **Social Policy:** Social policy is interdisciplinary and attempts to cater to social needs with focus on the aspects of society, economy and the implementation of policies to improve social justice.

2.5 PROBLEMS AND LIMITATIONS OF SOCIAL SCIENCE RESEARCH

We know that social research deals with a social phenomenon which is quite different than the natural phenomena. Hence, there are fundamental difference between research in social sciences and that of physical or natural sciences. The major problems faced in social science research may be

discussed under the following major heads:

- **The social scientist a part of what is studied:** The fact that social scientist is part of the human society which he studies gives rise to certain limitations. Man has to be his own guinea pig. This has a number of methodological consequences. For example, it restricts the scope for controlled experiments. It limits the scope for objectivity in social science research.
- **Complexity of the subject matter:** The subject matter of research in social science, viz. human society and human behaviour is too complex varied and changing to yield to the scientific categorization, measurement, analysis and prediction. The multiplicity and complexity of causation make it difficult to apply the technique of experimentation. Human behaviour can be studied only by the other human beings, and this always distorts fundamentally the facts being studied so that there can be no objective procedure for achieving the truth.
- **Complexity of social data:** Similarly, the study of human behaviour also depends on several factors such as physical, social, temperamental, psychological, geographical, biological socio-cultural etc. Because of these factors a researcher is generally confused. It is therefore said that because of this complexity of social relations, human beings cannot be put to scientific test.
- **Personal values:** Subjects and clients, as well as investigators, have personal values, which are apt to become involved in the research process. One should not assume that these are freely exploitable. The investigator must have respect for the client's values.
- **Problems of concepts:** In social science research, one has to face number of problems among which of a) abstraction, and b) faulty reasoning, plays major role in formulating and defining the concepts and law. Abstraction is both the central strength and one of the weaknesses of economics, for example, full-employment, perfect competition and pure competition. Faulty reasoning leads to wrong conclusion. For example, classical theory of employment was based on a faulty reasoning that wage cut will increase employment opportunities. However, later on J.

M. Keynes proved the faulty reasoning of this classical theory and presented alternative theory.

- **Problems in interpreting relationship between cause and effect:** In social science research, we generally find interdependent relationship between cause and effect. In many times, the cause and effect are one and the same.
- **Dynamic nature of social phenomena:** Man is a social animal and the human societies undergo constant change. What is true today may be not useful tomorrow. The techniques used in past may prove useless for present and future studies. On account of this dynamic nature of social phenomena our task of analysing data becomes very much complicated and the inferences drawn may be misleading.
- **Problem of maintaining objectivity:** The problem of impartiality is in part a problem of objectivity. It is generally argued that the social scientists are less objective than natural scientist because their own interest affected by the findings of their studies, hence leading to prejudice and bias.
- **Unpredictability:** Predictability is one of the most important characteristics of science. In case of physical science, high degree of predictability is possible but it is not so in case of social data. But this statement is also partially true; the social scientist can roughly estimate the behaviour of the group.
- **Difficulty in the Verification of the Inferences:** In social science research, the events of social sciences are non-repetitive and the social scientists are ill-equipped with their tools to verify inferences.
- **Difficulty in the use of experimental method:** In case of social science research, its product being a human being cannot be put to laboratory test. Even if it is done, their responses wouldn't be natural but subject to the awareness of the artificial condition. Thus the social scientist has to watch them in real world.
- **Incapability of being dealt through empirical method:** An empirical method cannot be applied in case of social science research as repeated experiment is not possible, for example, the problem of unbiased sampling, selection of data etc.

- **Problems of inter-disciplinary research:** Social science being inter-disciplinary one discipline is related with the other. For example, among Economics, Political Science and Sociology, we cannot draw water-tight compartments. Same is the case with other social science disciplines.
- **Anthropomorphization:** Another hazard of social science research is the danger of the temptation to anthropomorphize about humans. This results in using observation obtained by sheer intuition or empathy conceptualizing in anthropomorphic manner.
- **Wrong decisions:** The quality of research findings depends upon the soundness of decisions made by the social scientist on such crucial stages of his research process as the definition of the unit of study operationalization of concepts, selection of sampling techniques and statistical techniques. Any mistake in any of these decisions will vitiate the validity of his findings.



CHECK YOUR PROGRESS

Q 3: What does psychology study? Answer in about 20 words.

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Q 4: Mention the issue related to causes and effect study in social research. Answer in about 60 words.

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2.6 LET US SUM UP

- Social sciences are not exact science like physical sciences. It deals with human beings.

- Human nature and the interaction between man and environment are so complex that it is more difficult to comprehend and predict human behaviour than the physical phenomena.
- Social science research is a systematic method of exploring, analysing and conceptualizing human life in order to extend, correct or verify knowledge of human behaviour and social life.
- Social research seeks to find explanations to unexplained phenomena, to clarify the doubtful and correct the misconceived fact of social life.
- The main purpose of social research is to discover those laws which can serve as proper guidelines for studying human contact and behaviour.
- The aim of social research, like research in natural sciences, is to discover new facts or verify and test old social facts.
- It tries to understand human behaviour and its interaction with the environment and social institutions.
- The aim of social research is to develop new scientific tools, concepts and theories, which would facilitate the reliable and valid study of human behaviour and social life.
- Social research follows the norms and tools of natural science, which emphasises validity, reliability and verifiability of the phenomenon studied. The scientific rigour in social science research implies objectivity, neutrality and empirically produced evidence. Empiricism comprises of the observation, collection, analysis and interpretation of data.
- We know that social research deals with a social phenomenon which is quite different than the natural phenomena. Hence, there are fundamental difference between research in social sciences and that of physical or natural sciences.



2.7 FURTHER READING

(1) Ahuja, R. (2018). Research Methods. Jaipur: Rawat Publications.

(2) Kothari, C.R. (2011). Research Methodology, Methods and Techniques. New Age International (P) Ltd.

(3) Kumar, R. (2011). Research Methodology. New Delhi: SAGE Publications India Pvt. Ltd.



2.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: In a broad perspective, social research can be defined as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalisation, principles or theories resulting in prediction and possibly ultimate control of events in society. It attempts to answer and solve social problems.

Ans to Q No 2: The aim of social science research is to understand human behaviour and its interaction with the environment and social institutions. It also tries to find out the causal connection between human activities and natural laws governing them.

Ans to Q No 3: Psychology studies the human mind and tries to understand how people and groups experience a variety of emotions, ideas, and awareness.

Ans to Q No 4: In social science research, we generally find interdependent relationship between cause and effect. In many times, the cause and effect are one and the same.



2.9 MODEL QUESTIONS

Answer the following questions in about 300-400 words.

Q 1: Discuss the concept of social research.

Q 2: Describe the objectives of research in social science.

Q 3: Discuss the scope of research in social science

Q 4: Enumerate the major problems and limitations of social science research.

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UNIT 3: TYPES OF RESEARCH

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Broad Types of Research

3.4 Types of Research based on its Purpose

3.5 Types of Research based on the Process

3.6 Types of Research based on the Outcome

3.7 Conceptual and Empirical Research

3.8 Let Us Sum Up

3.9 Further Reading

3.10 Answers to Check Your Progress

3.11 Model Questions

3.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the different types of research based on its purpose, process and outcome.
- discuss the concepts of exploratory research, descriptive research, analytical research and predictive research.
- discuss the concepts of qualitative and quantitative research and their advantages and disadvantages.
- discuss the concepts of applied research, fundamental research and action research.
- discuss the concepts of conceptual and empirical research and distinguish between them.

3.2 INTRODUCTION

In this unit, we have discussed the different types based on its purpose, process an outcome. Further, two approaches to conducting scientific research viz., conceptual research and empirical research has also

been discussed. This unit will be helpful in getting an insight into the major types of research as well as the process of research.

3.3 BROAD TYPES OF RESEARCH

Research can be broadly classified based on its purpose, its process and its outcome.

- Based on purpose, research can be classified as:
- Exploratory Research
- Descriptive Research
- Analytical Research
- Predictive Research
- Based on process, research can be classified as:
- Quantitative Research.
- Qualitative Research.
- Mixed Method Research

Based on outcome, research can be classified as:

- Applied Research.
- Fundamental/ Basic/ Pure Research.
- Action Research.

We shall discuss these different types of research in some detail. However, we shall primarily focus on the quantitative and qualitative research types, as these are frequently used in Economics.

3.4 TYPES OF RESEARCH BASED ON ITS PURPOSE

EXPLORATORY RESEARCH: The aim of exploratory research is to look for patterns, ideas or hypotheses rather than testing or confirming a hypothesis. In exploratory research the focus is on gaining insights and familiarity with the subject area for more rigorous investigation later. It is possible that you may carry out an initial survey to establish areas of concern (exploratory research) and then research these issues in more depth, perhaps through interviews, to provide a deeper understanding (explanatory research).

As the term itself suggests, exploratory research is often conducted

because a problem has not been clearly defined as yet, or its real scope is as yet unclear. It allows the researcher to familiarize him/herself with the problem or concept to be studied, and perhaps generate hypotheses to be tested. It is the initial research, before more conclusive research undertaken. Exploratory research helps determine the best research design, data collection method and selection of subjects, and sometimes it even concludes that the problem does not exist!

Exploratory research can be quite informal, relying on secondary research such as reviewing available literature, or qualitative approaches such as informal conclusions with consumers, employees, management or competitors, and more formal approaches through indepth interviews, focus groups, projective methods, case studies and pilot studies.

The results of exploratory research are not usually useful for decision making by themselves, but they can provide significant insight into a given situation. Although the results of qualitative research can give some indication as to the "why", "how" and "when" something occurs, it cannot tell us "how often" or "how many". In other words, the results can neither be generalised.

DESCRIPTIVE RESEARCH: Descriptive research describes phenomena, as they exist. It is used to identify and obtain information on the characteristics of a particular issue. It may answer such questions as:

- What is the absentee rate amongst a particular group of workers?
- What are the feelings of workers faced with redundancy?

In descriptive research, the data collected are often quantitative, and statistical techniques are usually used to summarize the information. Descriptive research goes further than exploratory research in examining a problem since it is undertaken to ascertain and describe the characteristics of issue. The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and co -relational methods.

Thus, 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; she/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.

One of the major limitations of descriptive research is that it cannot help determine what causes a specific behaviour, motivation or occurrence. In other words, it cannot establish a casual research relationship between variables.

ANALYTICAL RESEARCH: Analytical research or explanatory research is a continuation of descriptive research. The researcher goes beyond merely describing the characteristics, to analyse and explain why or how something is happening. Thus, analytical research aims to understand phenomena by discovering and measuring casual relations among them. It may answer questions such as:

- How can the number of complaints made by customers be reduced?
- How can the absentee rate among employees be reduced?
- Why is the introduction of empowerment seen as a threat by departmental managers?

In analytical research, the researcher has to use facts or information already available, and analyse these to make a critical evaluation of the material. This kind of research is conducted with the assumption that a critical examination of the facts and figures will reveal more than what they appear when observed casually. So a researcher tries to discover the connection between the collected facts and figures to draw generalisations from them.

Thus, this kind of research usually tries to establish cause and effect relationship. For example, if a researcher is trying to understand a particular social context he/ she will try to discover the causes which gives rise to the events (say suicide) and the effect of those events.

However, one needs to remember that even in descriptive research

some preliminary analysis can be found and similarly in the analytical researches some kind of description can be found.

PREDICTIVE RESEARCH: Predictive research goes further by forecasting the likelihood of a similar situation occurring elsewhere. It aims to generalize from the analysis by predicting certain phenomena on the basis of hypothesized general relationships. It may attempt to answer questions such as:

- Will the introduction of an employee bonus scheme lead to higher levels of productivity?
- What type of packaging will improve our products?

Predictive research provides 'how', 'why', and 'where' answers to current events as well as to similar events in the future. It is also helpful in situations where 'what if?' questions are being asked.



CHECK YOUR PROGRESS

Q 1: State the broad types of research. (Answer in about 60 words)

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Q 2: What is meant by exploratory research? (Answer in about 40 words)

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3.5 TYPES OF RESEARCH BASED ON THE PROCESS

We have already mentioned that based on the research process, research can be categorised as qualitative research, quantitative research

and mixed method research. Here we shall discuss basically on the first two. We shall discuss the mixed method research in some detail in the next Unit 4.

QUANTITATIVE RESEARCH: The quantitative approach usually starts with a theory of a general statement proposing a general relationship between variables. With this approach it is likely that the researchers will take an objective position and their approach will be to treat phenomena as hard and real. They will favour methods such as surveys and experiments, and will attempt to test hypotheses or statements with a view to generalizing from the particular. This approach typically concentrates on measuring or counting and involves collection and analysing numerical data and applying statistical tests.

It may be defined as a systematic investigation of phenomena by gathering quantifiable data and performing statistical, mathematical, or computational techniques. Quantitative research collects information from existing and potential customers using sampling methods and sending out online surveys, online polls, questionnaires, etc., the results of which can be depicted in the form of numerical. after careful understanding of these numbers to predict the future of a product or service and make changes accordingly.

An example of quantitative research is the survey conducted to understand the amount of time a doctor takes to attend to a patient when the patient walks into the hospital. A patient satisfaction survey template can be administered to ask questions like how much time did a doctor takes to see a patient, how often does a patient walks into a hospital, and other such questions.

Quantitative outcome research is mostly conducted in the social sciences using the statistical methods statedabove to collect quantitative data from the research study. In this research method, researchers and statisticians deploy mathematical frameworks and theories that pertain to the quantity under question.

Quantitative research templates are objective, elaborate, and many times, even investigational. The results achieved from this research method

are logical, statistical, and unbiased. Data collection takes place using a structured method and conducted on larger samples that represent the entire population.

Characteristics of Quantitative Research: Some distinctive characteristics of quantitative research are:

- **Use of structured tools:** Structured tools such as surveys, polls, or questionnaires are used to gather quantitative data. Using such structure methods helps in collecting in-depth and actionable data from the survey respondents.
- **Sample size:** Quantitative research is conducted on a significant sample size that represents the target market. Appropriate sampling methods have to be used while deriving the sample to fortify the research objective
- **Close-ended questions:** Closed-ended questions are created as per the objective of the research. These questions help collect quantitative data and hence, are extensively used in quantitative research.
- **Prior studies:** Various factors related to the research topic are studied before collecting feedback from respondents.
- **Quantitative data:** Usually, quantitative data is represented by tables, charts, graphs, or any other non-numerical form. This makes it easy to understand the data that has been collected as well as prove the validity of the market research.
- **Generalization of results:** Results of this research method can be generalized to an entire population to take appropriate actions for improvement.
- **Advantages of Quantitative research:** There are many advantages of quantitative research. Some of the major advantages of why researchers use this method in market research are:
- **Collect reliable and accurate data:** As data is collected, analysed, and presented in numbers, the results obtained will be extremely reliable. Numbers do not lie. They offer an honest picture of the conducted research without discrepancies and is also extremely

accurate. In situations where a researcher predicts conflict, quantitative research is conducted.

- **Quick data collection:** A quantitative research is carried out with a group of respondents who represent a population. A survey or any other quantitative research method applied to these respondents and the involvement of statistics, conducting and analysing results is quite straightforward and less time-consuming.
- **Wider scope of data analysis:** Due to the statistics, this research method provides a wider scope of data collection.
- **Eliminate bias:** This research method offers no scope for personal comments or biasing of results. The results achieved are numerical and are thus, fair in most of the cases.

Thus, quantitative research seeks to quantify or reflect with numbers and observations about human behaviour. This kind of research attempts to describe relationships among the variables mathematically and to apply some form of numerical analysis to the relations being examined. The survey method, correlational method and experimental methods are examples of quantitative methods.

QUALITATIVE RESEARCH: Qualitative research is defined as a research method that focuses on obtaining data through open-ended and conversational communication. This method is not only about "what" people think but also "why" they think so. For example, consider a convenience store looking to improve its patronage. A systematic observation concludes that the number of men visiting this store are more. One good method to determine why women were not visiting the store is to conduct an in-depth interview of potential customers in the category.

For example, on successfully interviewing female customers, visiting the nearby stores and malls, and selecting them through random sampling, it was known that the store doesn't have enough items for women and so there were fewer women visiting the store, which was understood only by personally interacting with them and understanding why they didn't visit the store, because there were more male products than female ones.

Thus, Qualitative research is based on the disciplines of social

sciences like psychology, sociology, and anthropology. Therefore, the qualitative research methods allow for in-depth and further probing and questioning of respondents based on their responses, where the interviewer/ researcher also tries to understand their motivation and feelings. Understanding how your audience takes decisions can help derive conclusions in market research.

Qualitative research methods are designed in a manner that help reveal the behaviour and perception of a target audience with reference to a particular topic. There are different types of qualitative research methods like an in-depth interview, focus groups, ethnographic research, content analysis, case study research that are usually used.

The results of qualitative methods are more descriptive and the inferences can be drawn quite easily from the data that is obtained.

Qualitative research methods originated in the social and behavioural sciences. Today our world is more complicated and it is difficult to understand what people think and perceive. Online qualitative research methods make it easier to understand that as it is more communicative and descriptive.

Characteristics of Qualitative Research Methods: Important characteristics of qualitative research methods include:

- Qualitative research methods usually collect data at the sight, where the participants are experiencing issues or problems. These are real-time data and rarely bring the participants out of the geographic locations to collect information.
- Qualitative researchers typically gather multiple forms of data, such as interviews, observations, and documents, rather than rely on a single data source.
- This type of research method works towards solving complex issues by breaking down into meaningful inferences, that is easily readable and understood by all.
- Since it's a more communicative method, people can build their trust on the researcher and the information thus obtained is raw and unadulterated.

Advantages of Qualitative Research: Major advantaged of

qualitative research includes:

- It provides flexibility to a researcher to conduct an in depth study on a particular topic.
- The methods opted by qualitative research enables a researcher to encounter with the unknown domains of knowledge.
- Qualitative research is considered 'relatively' inexpensive.

Disadvantages of Qualitative Research: Major disadvantages of qualitative research includes:

- Qualitative research is often criticized on the ground that in such a research the researcher tends to get subjectively involved with the object of inquiry.
- Qualitative research is not replicable and therefore it is criticized on the ground that qualitative research is not often generalisable.
- Another limitation of qualitative research is that here the data collection process is more time consuming.



CHECK YOUR PROGRESS

Q 3: Define qualitative research. (Answer in about 40 words).

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Q 4: Mention any two advantages of quantitative research. (Answer in about 60 words)

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3.6 TYPES OF RESEARCH BASED ON THE OUTCOME

We have already discussed that based on the outcome of research, it can be broadly categorised as (a) Applied, (b) Fundamental /Basic / Pure and (c) Action research. Let us briefly discuss these concepts.

APPLIED RESEARCH: Applied research is problem-oriented as the research is carried out to solve a specific problem that requires a decision, for example, the improvement of safety in the work place, or market research. Applied research is focused on answering real-world, practical questions in order to provide relatively immediate solutions. It is performed in relation to actual problems and under the conditions in which they are found in practice. Topics for applied research are often driven by current problems in education and by policymakers' concerns. Applied research is often conducted in more natural settings (i.e., more realistic or real-world settings) than basic research. Most of the educational researches are applied researches whose objectives are to develop generalizations about teaching learning processes, instructional materials, the behaviour of children, ways to modify it, and so on.

FUNDAMENTAL OR BASIC OR PURE RESEARCH: Fundamental/ basic/pure research is aimed at generating fundamental knowledge and theoretical understanding about basic human and other natural processes. The purpose of basic or fundamental research is generation of new knowledge for the sake of knowledge. It is not directed towards the solution of immediate practical problems. Basic research is usually conducted by using the most rigorous research methods (e.g., experimental) under tightly controlled laboratory conditions.

ACTION RESEARCH: Action research is focused on solving specific problems that local practitioners face in their schools and communities. It views a local classroom or other work environment as a place to conduct research. In action research, practitioners in the local settings, design and conduct the research study. It is focused more on local practice and local solutions; it is more participatory; and it is conducted by teachers, administrators, counsellors, coaches, and other educational professionals trying to solve their very specific problems. According to Corey (1953),

"Action research is the research undertaken by practitioner, so that they may improve their practices. It helps a practitioner to perceive, understand and assess the situation and it further facilitates a systematic analysis and working out plausible reasons, for the unsatisfactory condition. With action research, a practitioner can try out alternative strategies till the problem is solved satisfactorily."

3.7 CONCEPTUAL & EMPIRICAL RESEARCH

While discussing the concept of fundamental research, we mentioned that fundamental research uses very rigorous research methods like the empirical research. It should be noted here that the scientific research is often divided into two classes: conceptual research and empirical research. In this section, we shall briefly discuss the concepts of conceptual and empirical research.

CONCEPTUAL RESEARCH: Conceptual research focuses on the concept or theory that explains or describes the phenomenon being studied. For example:

- What causes disease?
- How can we describe the motions of the planets?
- What are the building blocks of matter?

The conceptual researcher sits at his/her desk with pen in hand and tries to solve these problems by thinking about them. She/he does no experiments but may make use of observations by others, since this is the mass of data that she/he is trying to make sense of.

Conceptual research typically involves observing and analysing information already present on a given topic. Philosophical research is a generally good example for conceptual research. It can be used to solve real-world problems. Conceptual frameworks, which are analytical tools researchers use in their studies, are based on conceptual research. Furthermore, these frameworks help to make conceptual distinctions and organize ideas the researchers need for research purposes.

In simple words, a conceptual framework is the researcher's synthesis of the literature (previous research studies) on how to explain a particular

phenomenon. It explains the actions required in the course of the study based on the researcher's observations on the subject of research as well as the knowledge gathered from previous studies.

EMPIRICAL RESEARCH: Empirical research is basically a research technique that uses empirical evidence. Empirical evidence refers to evidence verifiable by observation or experience rather than theory or pure logic. Thus, empirical research is research studies with conclusions based on empirical evidence. Moreover, empirical research studies are observable and measurable.

Empirical evidence can be gathered through qualitative research studies or quantitative research studies. Qualitative research methods gather non-numerical or non-statistical data. Thus, these type of studies helps to understand the underlying reasons, opinions, and motivations behind something as well as to uncover trends in thought and opinions. Quantitative research studies, on the other hand, gather statistical data. These have the ability to quantify behaviours, opinions, or other defined variables. Moreover, a researcher can even use a combination of quantitative and qualitative methods to find answers to his research questions.

Distinctions between Conceptual and Empirical Research: The following broad distinctions between conceptual and empirical research can be noted.

- **Based on definition:** Conceptual research is a type of research that is generally related to abstract ideas or concepts whereas empirical research is any research study where conclusions of the study are drawn from evidence verifiable by observation or experience rather than theory or pure logic.
- **Based on nature:** Conceptual research involves abstract idea and concepts; however, it doesn't involve any practical experiments. Empirical research, on the other hand, involves phenomena that are observable and measurable.
- **Based on type of studies:** Philosophical research studies are examples of conceptual research studies, whereas empirical research includes both quantitative and qualitative studies.

To sum up, we can say that the main difference between conceptual and empirical research is that conceptual research involves abstract ideas and concepts whereas empirical research involves research based on observation, experiments and verifiable evidence.



CHECK YOUR PROGRESS

Q 5: Define action research. (Answer in about 60 words)

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Q 6: Mention any two situations when applied research can be undertaken. (Answer in about 30 words)

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3.8 LET US SUM UP

- Research can be broadly classified based on its purpose, its process and its outcome.
- Based on purpose, research can be classified as: exploratory research, descriptive research, analytical research and predictive research.
- Based on process, research can be classified as quantitative, qualitative and mixed method research.
- Based on outcome, research can be classified as applied, fundamental or basic or pure and action research.
- In exploratory research the focus is on gaining insights and familiarity

with the subject area for more rigorous investigation later.

- Descriptive research describes phenomena, as they exist. It is used to identify and obtain information on the characteristics of a particular issue.
- Analytical research or explanatory research is a continuation of descriptive research. The researcher goes beyond merely describing the characteristics, to analyse and explain why or how something is happening. Thus, analytical research aims to understand phenomena by discovering and measuring casual relations among them.
- Predictive research goes further by forecasting the likelihood of a similar situation occurring elsewhere. It aims to generalize from the analysis by predicting certain phenomena on the basis of hypothesized, general relationships,
- The quantitative approach usually starts with a theory of a general statement proposing a general relationship between variables. With this approach, it is likely that the researchers will take an objective position and their approach will be to treat phenomena as hard and real.
- Qualitative research is defined as a research method that focuses on obtaining data through open-ended and conversational communication. This method is not only about "what" people think but also "why" they think so.
- Applied research is problem-oriented as the research is carried out to solve a specific problem that requires a decision, for example, the improvement of safety in the work place, or market research. Applied research is focused on answering real-world, practical questions in order to provide relatively immediate solutions.
- Fundamental/basic/pure research is aimed at generating fundamental knowledge and theoretical understanding about basic human and other natural processes. The purpose of basic or fundamental research is generation of new knowledge for the sake of knowledge.
- Action research is focused on solving specific problems that local practitioners face in their schools and communities. It views a local classroom or other work environment as a place to conduct research.

Conceptual research focuses on the concept or theory that explains or describes the phenomenon being studied.

- Empirical research is basically a research technique that uses empirical evidence. Empirical evidence refers to evidence verifiable by observation or experience rather than theory or pure logic.



3.9 FURTHER READING

(1) Ahuja, R. (2018). Research Methods. Jaipur: Rawat Publications.

(2) Kothari, C.R. (2011). Research Methodology, Methods and Techniques. New Age International (P) Ltd.

(3) Kumar, R. (2011). Research Methodology. New Delhi: SAGE Publications India Pvt. Ltd.



3.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Research can be broadly classified based on its purpose, its process and its outcome. Based on purpose, research can be classified as: exploratory research, descriptive research, analytical research and predictive research. Based on process, research can be classified as quantitative, qualitative and mixed method research. And, based on outcome, research can be classified as applied, fundamental or basic or pure and action research.

Ans to Q No 2: Exploratory research may be defined as the research approach that looks for patterns, ideas or hypotheses rather than testing or confirming a hypothesis. In exploratory research the focus is on gaining insights and familiarity with the subject area for more rigorous investigation later.

Ans to Q No 3: Qualitative research is defined as a research method that focuses on obtaining data through open-ended and conversational communication. This method is not only about "what" people think but also "why" they think so.

Ans to Q No 4: Two important advantages of quantitative research are:

- As data is collected, analysed, and presented in numbers, the results obtained will be extremely reliable. Data offer an honest picture of the conducted research without discrepancies and is also extremely accurate. In situations where a researcher predicts conflict, quantitative research is conducted.
- This research method offers no scope for personal comments or biasing of results. The results achieved are numerical and are thus, fair in most cases.

Ans to Q No 5: Action research is the research undertaken by practitioner, so that they may improve their practices. It helps a practitioner to perceive, understand and assess the situation and it further facilitates a systematic analysis and working out plausible reasons, for the unsatisfactory condition. With action research, a practitioner can try out alternative strategies till the problem is solved satisfactorily,

Ans to Q No 6: Most of the educational researches are applied researches whose objectives are to develop generalizations about teaching learning processes, instructional materials, the behaviour of children, ways to modify it, and so on.



3.11 MODEL QUESTIONS

Answer the following questions.

Q 1: Discuss the different types of research.

Q 2: Discuss the different types of research based on its purpose.

Q 3: Discuss the different types of research based on the process.

Q 4: Discuss the different types of research based on the outcome.

Q 5: Discuss the concepts of conceptual and empirical research.

Q 6: Discuss the relative merits of qualitative and quantitative research.

Q 7: Briefly discuss the concept of exploratory research.

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UNIT 4: RESEARCH IN ECONOMICS

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Nature of Research in Economics

4.4 Importance of Economic Research

4.5 Scope of Economic Research

4.6 Let Us Sum Up

4.7 Further Reading

4.8 Model Questions

4.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the nature of research in economics
- outline importance of economic research
- explain the scope of research in economics

4.2 INTRODUCTION

The basic objective of this unit is enabling you to gain an understanding of core economic principles and how they apply to a wide range of real-world issues. Along with that it is also expected from you to have information about the theoretical and applied research methods/designs necessary to critique and create economic research. Through this unit we also wish to inspire you to keep in touch with salient developments in the Indian as well as world economy, in both present-day and historical contexts.

So far, we have discussed a few fundamental concepts of research. In this unit, we shall discuss nature, importance and scope of economic research. Considered a social science, economics uses scientific methods to understand how scarce resources are exchanged within society. Economists study theories and techniques useful for developing policies in government as they have a deep understanding of how to create efficiency

in today's world. Dear learners, in order to behave like an economist, it is very essential to understand all the concepts relating to economic research. In this context, while discussing the nature of economic research, we have basically considered the techniques of research methodologies used in Economics. Similarly, in highlighting the importance of economic research we pinpointed that economists analyse data to improve our understanding of economic trends. Economic analysis, both theoretical and empirical, can generate important insights into individual and aggregate behaviour and relationships, and help in society's efforts to use scarce resources in a more efficient manner. In the discussion of its scope, we have highlighted the JEL codes that are frequently used in economic research.

4.3 NATURE OF RESEARCH IN ECONOMICS

The major objective of research is to find out the truth about the problems that is bothering, individual households, corporations, communities, policy makers in the local and national governments and the international community as a whole.

Economic research uses the economic data as its core input. Consequently, the availability and quality of economic data represent a key factor to the development of timely and accurate economic research, to the maximisation of benefiting from them, as well as to the minimisation of wrong decision-making and the costs it carries over. Undoubtedly, timely and accurate economic research is vital for undertaking more sound economic policies for boosting a stable and non-inflationary growth and for coping with various risks under a dynamic and rapid integration of our economies.

In Economics, some questions are quantitative by nature such as the distribution of income, employment level by sectors, prices and costs of commodities, demand and supply of various goods and services in the economy, international trade, growth rates of output and employment, capital stock, investment, rate of returns on financial assets, primary secondary or the university level education. Similarly, many other problems in Economics are, in fact. qualitative. These range about the welfare and equal society,

philosophical issues relating to the behavioural and psychological analysis of decision making process by individuals and firms or the policy makers that often involve abstract reasoning. If there is a solid proof of certain aspects of life found by quantitative method that should be validated also by qualitative method. This kind of cross check between research method is knows as triangulation. It is good research practice to triangulate findings. Analysis and conclusions established by quantitative methods should be cross checked by qualitative methods or otherwise. Real purpose of research is finding something new that helps in making good decisions.

Please note here that research methods used in Economics can broadly be of two types:

- Mono Methods and
- Mixed Methods.

A mono method study uses only one type of method, one quantitative or one qualitative. Within mono methods, it can be either quantitative or qualitative. In general, in a quantitative study, the data is in numerical form and this information is analyzed using quantitative data analysis techniques.

The combination of at least one qualitative and at least one quantitative component in a single research project is known as mixed methods research The mixed methods have gained popularity in carrying out research in social and behavioural sciences because combining them allows the researchers (i) to offset their (QN and QL methods) weaknesses, (ii) provide comprehensive account of the area of the enquiry, (iii) to answer different types of questions. [Here, QN = Quantitative, QL: Qualitative].

Thus, studies undertaken under mixed methods can be of four types:

- Preliminary quantitative methods input design and core qualitative methods as core design (QN-QL)
- supplementary quantitative methods design as follow up to core quantitative methods design (QL-QN)
- preliminary qualitative methods input design and core quantitative methods design (QL-QN)
- supplementary qualitative methods design as follow up to quantitative methods design (QN-QL)

In carrying out an applied and quantitative economic research, there are several necessary backgrounds. The researcher should first have solid training in economic theory, quantitative methods (statistics and econometrics), data analysis techniques, and adequate training in micro-computer technology, as well as some training in research methods. Unfortunately, undergraduate students beginning their research most often do not have these backgrounds. Therefore, they are going to be overwhelmed and intimidated by the lack of necessary skills. Many often give up in frustration, even if they are willing to persevere and to learn these skills. What is sorely need is a practical guide to initiate, conduct, and complete an applied and quantitative economic research.

By now you have understood the nature of economic research. Now let us move further to explore its importance.



LET US KNOW

Based on Creswell and Plano Clark's (2007) discussion of mixed methods designs, there are Four major types of mixed methods:

(i) The Triangulation Design,

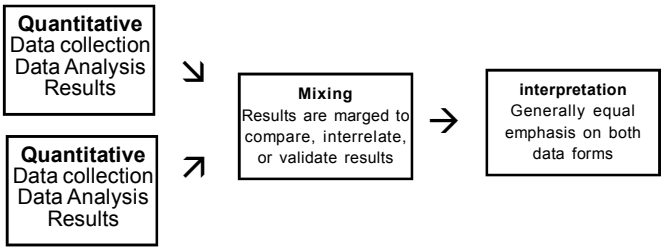
(ii) The Embedded Design,

(iii) The Explanatory Design, and

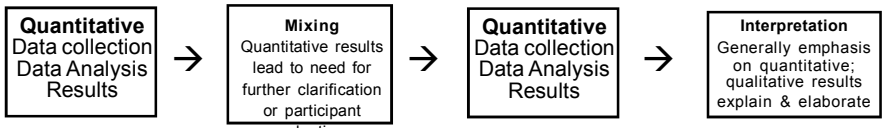
(iv) The Exploratory Design.

This has been explained in the following figure.

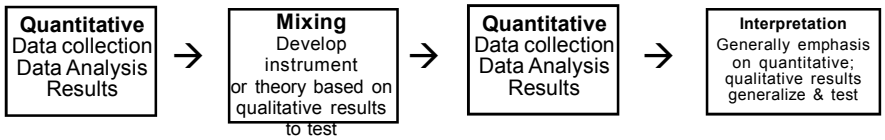
(a) Triangulation Design



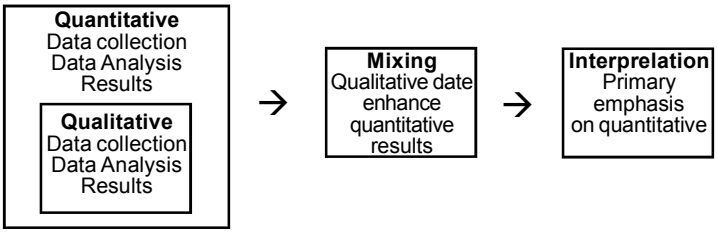
(b) Explanatory Design



(c) Explanatory Design



(d) Embedded Design



4.4 IMPORTANCE OF ECONOMIC RESEARCH

In Unit 1, we have already discussed the importance of research. Here we shall discuss the value of the research done in Economics from the society's larger perspectives. Research in the discipline of Economics have benefitted many other disciplines. Similarly, Economics is also a beneficiary of the results of research in other disciplines (mathematics, statistics, computers, sociology). Rigorous economic modelling has led to many institutional innovations and policy paradigms. Economics is a young discipline, only about 300 years old. The added rigor and recent advancement in quantitative analysis expanded the capabilities of economic research and led to a multitude of policy paradigms and institutions. For example, over the

last 40 years, formal economic analysis has advanced the notions of externalities, public good, market failure, incentive-compatible policies, trading in pollution permits, intellectual property rights, and so forth. The importance of economic research is described in the following points:

- **As a tool for advancement in knowledge:** As a tool for advancement in knowledge, the research undertaken in the field of Economics helps the society to get insights into its social problems. For example, research undertaken in the areas like poverty, growth, public health, education, equality and equity etc. can help the society to understand the deep-rooted problems. The research findings of such studies also help the government in adopting appropriate policy measures for improving those social conditions.
- **Economics helps in theory building:** Economics provides a wider scope for theory building. Economists see the world through a different lens than anthropologists, biologists, classicists, or practitioners of any other discipline. They analyse issues and problems with economic theories that are based on particular assumptions about human behaviour, that are different than the assumptions an anthropologist or psychologist might use. Here, in economics, we can define theory as a simplified representation of how two or more variables interact with each other. The purpose of a theory is to take a complex, real-world issue and simplify it down to its essentials. If done well, this enables the analyst to understand the issue and any problems around it. A good theory is simple enough to be understood, while complex enough to capture the key features of the object or situation being studied.

  Sometimes economists use the term model instead of theory. Strictly speaking, a theory is a more abstract representation, while a model is more applied or empirical representation. Models are used to test theories, but often these two terms are used interchangeably.
- **Helps to gather updated information and to-the-point data:** Most of the research in Economics are based on current data. Thus, they offer enormous help in building understanding about the current

scenario. This also helps in undertaking proper policy measures to solve the current issues of the society.

- **A reliable tool for public policy making:** Research studies in economics serves as a reliable tool for public policy making. This is the reason why a number of research organisations, primarily aiming at undertaking research in various fields in economics are set up with the investment of public funds.
- **Helps in informed decision making:** Research studies in economics also helps in undertaking important and effective decisions across all sectors of the economy. Further, in many other fields like engineering, health, education, business management, etc.
- **Contributions of David Zilberman and Amir Heiman:** Apart from the above points, let us consider some of the important points raised by David Zilberman and Amir Heiman of International Food Policy Research Institute, Washington, D.C., in their paper entitled "The Value of Economic Research" (1999). In the paper, the authors have basically analysed the value of economic research in the field of agriculture.

The authors have analysed the value of economic research in agriculture in three main categories and nine classes.

The first class, economic information, includes prices and quantities, institutions and policies, and aggregate information.

The second class, contribution to technological change, includes three categories of outputs that contribute to technological change: innovations in production and management, product introduction and marketing methods, and management tools for research and development.

The third class, contribution to public policy, includes three categories that affect public policies: policy paradigms and institutional innovations, policy analysis tools, and assessments of the impact of research on policy.

The analyses of the authors on the value of economic research in

Category	Prices and quantities	Institutions and policies	Aggregate information
Group 1: Economics information			
Examples	Commodity price predictions, output focus	Overview of international agricultural policies	Sectoral productivity estimates, sectoral accounts
Users	Traders, farmers, agribusiness	Agribusiness, investors, exporters, developers	Policymakers, voters
Benefits	Uncertainty reduction, increased efficiency, higher average output, lower prices	Increased trade and investment, reduced transaction costs, increased efficiency	Timely policy adjustments, informed political choices
Category	Production and management innovations	Product introduction and marketing methods	Research and development management tools
Group 2: Contributions to technological change			
Examples	Feed rationing formulas, resource allocation methods, conjunctive use of water, economic pest thresholds, location and transportation management tools	S-shaped diffusion curves, demand estimates, statistical tools to identify market slices	Competitive grants, research incentives, research assessment tools
Users	Resource managers, agribusiness, farmers	Agribusiness, investors, developers, farmers	Policymakers, rescarch managers
Benefits	Improved resource allocation, increased profitability	Increased trade and investment, reduced transactions costs, increased productivity	Improved research productivity, improved research accountability
Category	Policy paradigms and institutional innovations	Policy analysis tools	Policy impact assessment
Group 3: Contributions to public policy			
Examples	Market efficiency, gains from trade, externalities, public goods, transferable pollution permits, incentive compatible policies, privatization, intellectual property rights	Cost-benefit analysis, input-output models, CGE models, impact assessment models	Analysis of alternative farm programs, prediction of economic impact of food stamp programs
Users	Government, policymakers, citizens, public organization	Government agencies, policy analysis	Governments, policy analysts
Benefits	Improved resource allocation, equity, and quality of life	Improved policy efficiency	Screen out bad policies, improve policy designs, identify unexpected consequences

the field of agriculture has been summarily presented in Table 4.1.

Table 4.1: Outputs of Economic Research: Examples and implications

Based on the above analysis (Table 4.1), the authors have drawn a few important contribution of economic research:

Assessments of the impact of research are preventive and corrective. They are generally routine exercises, but they can require original research on methodology or empirical estimation. Such assessments can be especially valuable if they lead to the selection of superior outcomes. The most important contribution of this research may be preventive: it screens wasteful proposals.

In the above analysis made by David Zilberman and Amir Heiman, we have basically seen the use (or scope) of economic research in the field of agriculture only. But the scope of economic research is much wider. We shall discuss that in the next section 4.5.

Limitations of Economic Research: As an outcome of economic research some policy may be formulated by the policy makers in the interest of society. But you should note here that there is a difference between recommending a policy and implementing it. The benefits of economic research may not be fully realized because a policymaker either may act against the advice of economists or ignore it. Even if policymakers do not act in accord with the recommendations of economists, they may claim that they follow economists' advice or behave according to an economic principle out of a concern for public relations. In some political situations, the results of potentially valuable policy research may be wasted.

Last but not the least, economists make mistakes. Incorporating the recommendations of economic research into policy does not necessarily ensure that the policy will succeed or that human well-being will improve. Economists have a track record of giving wrong advice. For example, based on what at the time were considered sound economic principles, South American economists followed development strategies that emphasized import substitution and led them nowhere. In other cases, ignoring or even acting against the recommendations of economists have produced successful outcomes. These cases cannot be ignored in an assessment of the value of economic research. Economists must attempt to identify those situations where economic research has failed so that they can learn from these failures.

4.5 SCOPE OF ECONOMIC RESEARCH

Dear learners, many of you may choose to pursue a career as a professional economist after completing your Master's degree in Economics. As professional economists, you would be expected to analyse a wide range of economic issues and their implications for the economic policy framework. A few of you can also study for a doctorate in research. In order to carry out these tasks, you must be knowledgeable with the components of research areas where u can pursue your research work. The current section seeks to meet this need by making you understand the scope of economic research. Research in Economics is done in every micro field of Economics and also in innumerable inter-disciplinary areas.

As per the federal bank of New York, The scope of economic research can be broadly categorised in 15 subjects presented as under:

- **Agriculture, natural resources, and the environment:** The economics of farming, fishery, forests, and natural resources with a focus on prices, markets, and changing technologies. Topics include the study of markets for energy (oil, coal, and electricity) and mineral resources, and policies to promote clean air, water, and land.
- **Behavioural economics:** The study of the cognitive and emotional dimensions of economic decisions.
- **Business economics:** The study of how firms make decisions. How do firms maximize profit? What prices should they set and how much should they produce? What is the role of incentives within the firm for managers to make good decisions and take on and manage risks.
- **Economic history:** The study of how economies and economic outcomes have changed over history and how economic institutions have developed. Topics include the emergence of markets, the forces shaping the industrial revolution, the sources of improvements in agricultural productivity, and the influence of railroads and other new technologies.
- **Economic development:** The study of why some countries have developed while others have not, with special focus on the world's

less developed countries. How might the industrialized countries improve prospects for development around the world? Who gains and who loses under policies to help economies develop?

- **Financial economics:** The study of how to value and determine the price of assets with uncertain returns their derivatives and the markets that trade them; the study of how firms finance their operations and the capital structure of firms.
- **Health and education economics:** The study of determinants of educational attainment and health outcomes, and the impact of government policies on these outcomes.
- **Industrial organization:** The study of individual markets and the nature of competition. Topics include anti-trust policy, the role of advertising, and how costs vary with the scale of operations. This field also studies particular industries such as software and technology firms, sports, and tourism.
- **International trade and finance:** The study of trade among nations and the flow of money and payments across international borders. Topics also include globalization and the balance of payments with other countries.
- **Labour economics:** The study of employers' decisions to hire workers and employees' decisions to work. This involves determinants of wages, the incentives workers face, and the role of minimum wage laws, unions, pensions, and training programs. Other topics of study include marriage and formation of families, determinants of birth rates, migration, population change, and aging.
- **Law and economics:** The study of individual economic decisions and institutions that are defined by the legal system, such as property rights and contract law.
- **Macroeconomics and monetary economics:** The study of the national economy and the determinants of national production, unemployment, and inflation. This field also examines the role of the Federal Reserve System, interest rates, and monetary and financial stability policy.

- **Mathematical and quantitative methods**: The focus on various mathematical methods including how best to mathematically model, measure, and estimate economic phenomena, and how to create and evaluate experiments that test economic theories and evaluate government policies. This has two major components:
  - *Econometrics:* Develops and uses statistical and mathematical tools to analyse economic issues and policy questions.
  - *Experimental economics:* Develops and uses experiments, typically with human subjects, to study economic issues and policy questions.
- **Public economics:** The study of the role of government in the economy including how to evaluate government programs, the design of tax systems, and how the political process makes decisions.
- **Urban, rural, and regional economics:** The study of the location decisions of households and firms with a special focus on housing, transportation, and local government.

The above categorization will help you to choose the topic in which you would like to do research. However, it is not quite easy to summarises each and every area of research in which the laws and principles of Economics are applied. Therefore, to discuss the scope of research in Economics, we can also refer to the JEL Classification codes, as discussed below.

- **JEL Classification Codes:** Articles in economics journals are usually classified according to JEL classification codes, which derive from the Journal of Economic Literature. The JEL is published quarterly by the American Economic Association (AEA) and contains survey articles and information on recently published books and dissertations. The AEA maintains EconLit, a searchable data base of citations for articles, books, reviews, dissertations, and working papers classified by JEL codes for the years from 1969.

In the JEL Codes, the research areas in Economics are arranged in 19 major classifications, number as A to R and then Z. These are mentioned below:

A: General Economics and Teaching

B: Methodology and History of Economic Thought

C: Mathematical and Quantitative Methods

D: Microeconomics

E: Macroeconomics and Monetary Economics

F: International Economics

G: Financial Economics

H: Public Economics

I: Health, Education, and Welfare

J: Labour and Demographic Economics

K: Law and Economics

L: Industrial Organization

M: Business Administration and Business Economics; Marketing; Accounting

N: Economic History

O: Economic Development, Technological Change, and Growth

P: Economic Systems

Q: Agricultural and Natural Resource Economics

R: Urban, Rural, and Regional Economics

Z: Other Special Topics

There are many micro areas under these broad 19 classifications (see Appendix).

Thus, from the above, we can view the overall scope of research areas in Economics. In the writing and publication of research papers in journals, the JEL codes are frequently used.



4.6 LET US SUM UP

- The major objective of research to find out the truth about the problems that is bothering, individual households, corporations, communities, policy makers in the local and national governments or the international community as a whole.

- Research methods used in Economics can broadly be of two types: Mono Methods and Mixed Methods. Within mono methods, it can be either quantitative or qualitative. The combination of at least one qualitative and at least one quantitative component in a single research project is known as mixed methods research.
- Research in the discipline of Economics has benefitted many other disciplines. Similarly, Economics is also a beneficiary of the results of research in other disciplines (mathematics, statistics, computers, sociology etc,).
- The benefits of economic research may not be fully realized because a policymaker either may act against the advice of economists or ignore it.
- Research in Economics is done in every micro field of Economics and also in innumerable inter-disciplinary areas. As such, it is not quite easy to summarises each and every area of research in which the laws and principles of Economics are applied.



4.7 FURTHER READING

(1) Kumar, R. (2011). Research Methodology. New Delhi: Sage Publications.

(2) Nachmias, D. & Nachmias, C. (2014) Research Methods in Social Sciences. New York: St. Martin's Press.

(3) Guthrie , G. (2010). Basic Research Methods: An Entry to Social Science Research, New Delhi: Sage Publications.



4.8 MODEL QUESTIONS

Answer the following questions in about 300-500 words.

Q 1: Discuss the nature of research in economics.

Q 2: Discuss the importance of economic research.

Q 3: Discuss the scope of research in economics.

*** ***** ***

APPENDIX:
JEL CLASSIFICATION CODES

A: GENERAL ECONOMICS AND TEACHING

A00 - General

A1 - General Economics

A10 - General

A11 - Role of Economics; Role of Economists

A12 - Relation of Economics to Other Disciplines

A13 - Relation of Economics to Social Values

A14 - Sociology of Economics

A19 - Other

A2 - Teaching of Economics

A20 - General

A21 - Precollege

A22 - Undergraduate

A23 - Graduate

A29 - Other

B: METHODOLOGY AND HISTORY OF ECONOMIC THOUGHT

B00 - General

B1 - History of Economic Thought through 1925

B10 - General

B11 - Preclassical

B12 - Classical

B13 - Neoclassical through 1925

B14 - Socialist; Marxist

B15 - Historical; Institutional

B19 - Other

B2 - History of Economic Thought since 1925

B20 - General

B21 - Microeconomics

B22 - Macroeconomics

B23 - Econometrics; Quantitative Studies

B24 - Socialist; Marxist

B25 - Historical; Institutional; Evolutionary

B29 - Other
B3 - History of Thought: Individuals
B30 - General
B31 - Individuals
B4 - Economic Methodology
B40 - General
B41 - Economic Methodology
B49 - Other
C: MATHEMATICAL AND QUANTITATIVE METHODS
C00 - General
C1 - Econometric and Statistical Methods: General
C10 - General
C11 - Bayesian Analysis
C12 - Hypothesis Testing
C13 - Estimation
C14 - Semiparametric and Nonparametric Methods
C15 - Statistical Simulation Methods; Monte Carlo Methods
C19 - Other
C2 - Econometric Methods: Single Equation Models
C20 - General
C21 - Cross-Sectional Models
C22 - Time-Series Models
C23 - Models with Panel Data
C24 - Truncated and Censored Models
C25 - Discrete Regression and Qualitative Choice Models
C29 - Other
C3 - Econometric Methods: Multiple/Simultaneous Equation Models
C30 - General
C31 - Cross-Sectional Models
C32 - Time-Series Models
C33 - Models with Panel Data
C34 - Truncated and Censored Models
C35 - Discrete Regression and Qualitative Choice Models
C39 - Other
C4 - Econometric and Statistical Methods: Special Topics

C40 - General

C41 - Duration Analysis

C42 - Survey Methods

C43 - Index Numbers and Aggregation

C44 - Statistical Decision Theory; Operations Research

C45 - Neural Networks and Related Topics

C49 - Other

C5 - Econometric Modeling

C50 - General

C51 - Model Construction and Estimation

C52 - Model Evaluation and Testing

C53 - Forecasting and Other Model Applications

C59 - Other

C6 - Mathematical Methods and Programming

C60 - General

C61 - Optimization Techniques; Programming Models; Dynamic Analysis

C62 - Existence and Stability Conditions of Equilibrium

C63 - Computational Techniques

C67 - Input-Output Models

C68 - Computable General Equilibrium Models

C69 - Other

C7 - Game Theory and Bargaining Theory

C70 - General

C71 - Cooperative Games

C72 - Noncooperative Games

C73 - Stochastic and Dynamic Games

C78 - Bargaining Theory; Matching Theory

C79 - Other

C8 - Data Collection and Data Estimation Methodology; Computer Programs

C80 - General

C81 - Methodology for Collecting, Estimating, and Organizing Microeconomic Data

C82 - Methodology for Collecting, Estimating, and Organizing Macroeconomic Data

C87 - Econometric Software

C88 - Other Computer Software

C89 - Other
C9 - Design of Experiments
C90 - General
C91 - Labouratory, Individual Behavior
C92 - Labouratory, Group Behavior
C93 - Field Experiments
C99 - Other
D: MICROECONOMICS
D00 - General
D1 - Household Behavior
D10 - General
D11 - Consumer Economics: Theory
D12 - Consumer Economics: Empirical Analysis
D13 - Household Production
D18 - Consumer Protection
D19 - Other
D2 - Production and Organizations
D20 - General
D21 - Firm Behavior
D23 - Organizational Behavior; Transaction Costs; Property Rights
D24 - Production; Capital and Total Factor Productivity; Capacity
D29 - Other
D3 - Distribution
D30 - General
D31 - Personal Income and Wealth Distribution
D33 - Factor Income Distribution
D39 - Other
D4 - Market Structure and Pricing
D40 - General
D41 - Perfect Competition
D42 - Monopoly
D43 - Oligopoly and Other Forms of Market Imperfection
D44 - Auctions
D45 - Rationing; Licensing
D46 - Value Theory

D49 - Other

D5 - General Equilibrium and Disequilibrium

D50 - General

D51 - Exchange and Production Economies

D52 - Incomplete Markets

D57 - Input-Output Analysis

D58 - Computable and Other Applied General Equilibrium Models

D59 - Other

D6 - Economic Welfare

D60 - General

D61 - Allocative Efficiency; Cost-Benefit Analysis

D62 - Externalities

D63 - Equity, Justice, Inequality, and Other Normative Criteria and Measurement

D64 - Altruism

D69 - Other

D7 - Analysis of Collective Decision-Making

D70 - General

D71 - Social Choice; Clubs; Committees

D72 - Economic Models of Political Processes: Rent-Seeking,

Elections, Legislatures, and Voting Behavior

D73 - Bureaucracy; Administrative Processes in Public Organizations

D74 - Conflict; Conflict Resolution

D78 - Positive Analysis of Policy-Making and Implementation

D79 - Other

D8 - Information and Uncertainty

D80 - General

D81 - Criteria for Decision-Making under Risk and Uncertainty

D82 - Asymmetric and Private Information

D83 - Search, Learning, and Information

D84 - Expectations; Speculations

D89 - Other

D9 - Intertemporal Choice and Growth

D90 - General

D91 - Intertemporal Consumer Choice; Life Cycle Models and Saving

D92 - Intertemporal Firm Choice and Growth, Investment, or Financing

D99 - Other

E: MACROECONOMICS AND MONETARY ECONOMICS

E00 - General

E1 - General Aggregative Models

E10 - General

E11 - Marxian; Sraffian; Institutional; Evolutionary

E12 - Keynes; Keynesian; Post-Keynesian

E13 - Neoclassical

E17 - Forecasting and Simulation

E19 - Other

E2 - Consumption, Saving, Production, Employment, and Investment

E20 - General

E21 - Consumption; Saving

E22 - Capital; Investment (including Inventories); Capacity

E23 - Production

E24 - Employment; Unemployment; Wages

E25 - Aggregate Factor Income Distribution

E27 - Forecasting and Simulation

E29 - Other

E3 - Prices, Business Fluctuations, and Cycles

E30 - General

E31 - Price Level; Inflation; Deflation

E32 - Business Fluctuations; Cycles

E37 - Forecasting and Simulation

E39 - Other

E4 - Money and Interest Rates

E40 - General

E41 - Demand for Money

E42 - Monetary Standards and Regimes; Government and the Monetary System

E43 - Determination of Interest Rates; Term Structure of Interest Rates

E44 - Financial Markets and the Macroeconomy

E47 - Forecasting and Simulation

E49 - Other

E5 - Monetary Policy, Central Banking, and the Supply of Money and Credit

E50 - General

E51 - Money Supply; Credit; Money Multipliers

E52 - Monetary Policy (Targets, Instruments, and Effects)

E53 - Deposit Insurance

E58 - Central Banks and Their Policies

E59 - Other

E6 - Macroeconomic - Aspects of Public Finance, Macroeconomic Policy, and General Outlook

E60 - General

E61 - Policy Objectives; Policy Designs and Consistency; Policy Coordination

E62 - Fiscal Policy; Public Expenditures, Investment, and Finance; Taxation

E63 - Comparative or Joint Analysis of Fiscal and Monetary or Stabilization Policy

E64 - Incomes Policy; Price Policy

E65 - Studies of Particular Policy Episodes

E66 - General Outlook and Conditions

E69 - Other

F: INTERNATIONAL ECONOMICS

F00 - General

F01 - Global Outlook

F02 - International Economic Order; Economic Integration: General

F1 - Trade

F10 - General

F11 - Neoclassical Models of Trade

F12 - Models of Trade with Imperfect Competition and Scale Economies

F13 - Commercial Policy; Protection; Promotion; Trade Negotiations

F14 - Country and Industry Studies of Trade

F15 - Economic Integration

F17 - Trade Forecasting and Simulation

F19 - Other

F2 - International Factor Movements and International Business

F20 - General

F21 - International Investment; Long-Term Capital Movements

F22 - International Migration

F23 - Multinational Firms; International Business

F29 - Other

F3 - International Finance

F30 - General
F31 - Foreign Exchange
F32 - Current Account Adjustment; Short-Term Capital Movements
F33 - International Monetary Arrangements and Institutions
F34 - International Lending and Debt Problems
F35 - Foreign Aid
F36 - Financial Aspects of Economic Integration
F39 - Other
F4 - Macroeconomic Aspects of International Trade and Finance
F40 - General
F41 - Open Economy Macroeconomics
F42 - International Policy Coordination and Transmission
F43 - Economic Growth of Open Economies
F47 - Forecasting and Simulation
F49 - Other
G: FINANCIAL ECONOMICS
G00 - General
G1 - General Financial Markets
G10 - General
G11 - Portfolio Choice
G12 - Asset Pricing
G13 - Contingent Pricing; Futures Pricing
G14 - Information and Market Efficiency; Event Studies
G15 - International Financial Markets
G18 - Government Policy and Regulation
G19 - Other
G2 - Financial Institutions and Services
G20 - General
G21 - Banks; Other Depository Institutions; Mortgages
G22 - Insurance; Insurance Companies
G23 - Pension Funds; Other Private Financial Institutions
G24 - Investment Banking; Venture Capital; Brokerage
G28 - Government Policy and Regulation
G29 - Other
G3 - Corporate Finance and Governance

G30 - General

G31 - Capital Budgeting; Investment Policy

G32 - Financing Policy; Capital and Ownership Structure

G33 - Bankruptcy; Liquidation

G34 - Mergers; Acquisitions; Restructuring; Corporate Governance

G35 - Payout Policy

G38 - Government Policy and Regulation

G39 - Other

H: PUBLIC ECONOMICS

H00 - General

H1 - Structure and Scope of Government

H10 - General

H11 - Structure and Scope of Government

H19 - Other

H2 - Taxation, Subsidies, and Revenue

H20 - General

H21 - Efficiency; Optimal Taxation

H22 - Incidence

H23 - Externalities; Redistributive Effects

H24 - Personal Income and Other Nonbusiness Taxes

H25 - Business Taxes

H26 - Tax Evasion

H29 - Other

H3 - Fiscal Policies and Behavior of Economic Agents

H30 - General

H31 - Household

H32 - Firm

H39 - Other

H4 - Publicly Provided Goods

H40 - General

H41 - Public Goods

H42 - Publicly Provided Private Goods

H43 - Project Evaluation; Social Discount Rate

H49 - Other

H5 - National Government Expenditures and Related Policies

H50 - General
H51 - Government Expenditures and Health
H52 - Government Expenditures and Education
H53 - Government Expenditures and Welfare Programs
H54 - Infrastructures
H55 - Social Security and Public Pensions
H56 - National Security and War
H57 - Procurement
H59 - Other
H6 - National Budget, Deficit, and Debt
H60 - General
H61 - Budget; Budget Systems
H62 - Deficit
H63 - Debt; Debt Management
H69 - Other
H7 - State and Local Government; Intergovernmental Relations
H70 - General
H71 - State and Local Taxation, Subsidies, and Revenue
H72 - State and Local Budget and Expenditures
H73 - Interjurisdictional Differentials and Their Effects
H74 - State and Local Borrowing
H77 - Intergovernmental Relations
H79 - Other
H8 - Miscellaneous Issues
H80 - General
H81 - Governmental Loans and Credits
H82 - Governmental Property
H87 - International Fiscal Issues
H89 - Other
I: HEALTH, EDUCATION, AND WELFARE
I00 - General
I1 - Health
I10 - General
I11 - Analysis of Health Care Markets
I12 - Health Production: Nutrition, Mortality, Morbidity, Disability,and Economic

Behavior

I18 - Government Policy; Regulation; Public Health

I19 - Other

I2 - Education

I20 - General

I21 - Analysis of Education

I22 - Educational Finance

I28 - Government Policy

I29 - Other

I3 - Welfare and Poverty

I30 - General

I31 - General Welfare; Basic Needs; Quality of Life

I32 - Measurement and Analysis of Poverty

I38 - Provision and Effects of Welfare Programs

I39 - Other

J: LABOUR AND DEMOGRAPHIC ECONOMICS

J00 - General

J1 - Demographic Economics

J10 - General

J11 - Demographic Trends and Forecasts

J12 - Marriage; Marital Dissolution; Family Structure

J13 - Fertility; Child Care; Children; Youth

J14 - Economics of the Elderly

J15 - Economics of Minorities

J16 - Economics of Gender

J17 - Value of Life; Foregone Income

J18 - Public Policy

J19 - Other

J2 - Time Allocation, Work Behavior, and Employment Determination

J20 - General

J21 - Labour Force and Employment, Size, and Structure

J22 - Time Allocation and Labour Supply

J23 - Employment Determination; Demand for Labour; Self-employment

J24 - Human Capital Formation; Occupational Choice; Labour Productivity

J26 - Retirement; Retirement Policies

J28 - Safety; Accidents; Industrial Health; Job Satisfaction; Related Public Policy

J29 - Other

J3 - Wages, Compensation, and Labour Costs

J30 - General

J31 - Wage Level and Structure; Wage Differentials by Skill, Training, Occupation, etc.

J32 - Nonwage Labour Costs and Benefits

J33 - Compensation Packages; Payment Methods

J38 - Public Policy

J39 - Other

J4 - Particular Labour Markets

J40 - General

J41 - Contracts: Specific Human Capital, Matching Models, Efficiency Wage Models, and Internal Labour Markets

J42 - Monopsony; Segmented Labour Markets

J43 - Agricultural Labour Markets

J44 - Professional Labour Markets and Occupations

J45 - Public Sector Labour Markets

J49 - Other

J5 - Labour-Management Relations, Trade Unions, and Collective Bargaining

J50 - General

J51 - Trade Unions: Objectives, Structure, and Effects

J52 - Dispute Resolution: Strikes; Arbitration; Mediation

J53 - Labour-Management Relations; Industrial Jurisprudence

J54 - Producer Cooperatives; Labour Managed Firms

J58 - Public Policy

J59 - Other

J6 - Mobility, Unemployment, and Vacancies

J60 - General

J61 - Geographic Labour Mobility; Immigrant Workers

J62 - Occupational and Intergenerational Mobility

J63 - Turnover; Vacancies; Layoffs

J64 - Unemployment: Models, Duration, Incidence, and Job Search

J65 - Unemployment Insurance; Severance Pay; Plant Closings

J68 - Public Policy

J69 - Other

J7 - Discrimination

J70 - General

J71 - Discrimination

J78 - Public Policy

J79 - Other

K: LAW AND ECONOMICS

K00 - General

K1 - Basic Areas of Law

K10 - General

K11 - Property Law

K12 - Contract Law

K13 - Tort Law and Product Liability

K14 - Criminal Law

K19 - Other

K2 - Regulation and Business Law

K20 - General

K21 - Antitrust Law

K22 - Corporation and Securities Law

K23 - Regulated Industries and Administrative Law

K29 - Other

K3 - Other Substantive Areas of Law

K30 - General

K31 - Labour Law

K32 - Environmental, Health, and Safety Law

K33 - International Law

K34 - Tax Law

K39 - Other

K4 - Legal Procedure, the Legal System, and Illegal Behavior

K40 - General

K41 - Litigation Process

K42 - Illegal Behavior and the Enforcement of Law

K49 - Other

L: INDUSTRIAL ORGANIZATION

L00 - General

L1 - Market Structure, Firm Strategy, and Market Performance
L10 - General
L11 - Production, Pricing, and Market Structure; Size Distribution of Firms
L12 - Monopoly; Monopolization Strategies
L13 - Oligopoly and Other Imperfect Markets
L14 - Transactional Relationships; Contracts and Reputation
L15 - Information and Product Quality
L16 - Industrial Organization and Macroeconomics; Macroeconomic Industrial Structure
L19 - Other
L2 - Firm Objectives, Organization, and Behavior
L20 - General
L21 - Business Objectives of the Firm
L22 - Firm Organization and Market Structure: Markets vs. Hierarchies; Vertical Integration
L23 - Organization of Production
L29 - Other
L3 - Nonprofit Organizations and Public Enterprise
L30 - General
L31 - Nonprofit Institutions
L32 - Public Enterprises
L33 - Boundaries of Public and Private Enterprise; Privatization; Contracting Out
L39 - Other
L4 - Antitrust Policy
L40 - General
L41 - Monopolization; Horizontal Anticompetitive Practices
L42 - Vertical Restraints; Resale Price Maintenance; Quantity Discounts
L43 - Legal Monopolies and Regulation or Deregulation
L44 - Antitrust Policy and Public Enterprise, Nonprofit Institutions, and Professional Organizations
L49 - Other
L5 - Regulation and Industrial Policy
L50 - General
L51 - Economics of Regulation
L52 - Industrial Policy; Sectoral Planning Methods

L59 - Other
L6 - Industry Studies: Manufacturing
L60 - General
L61 - Metals and Metal Products; Cement; Glass; Ceramics
L62 - Automobiles; Other Transportation Equipment
L63 - Microelectronics; Computers; Communications Equipment
L64 - Other Machinery; Business Equipment
L65 - Chemicals; Drugs
L66 - Food; Beverages; Cosmetics; Tobacco
L67 - Other Consumer Nondurables: Clothing, Textiles, Shoes, and Leather
L68 - Appliances; Other Consumer Durables
L69 - Other
L7 - Industry Studies: Primary Products and Construction
L70 - General
L71 - Mining, Extraction, and Refining: Hydrocarbon Fuels
L72 - Mining, Extraction, and Refining: Other Nonrenewable Resources
L73 - Forest Products: Lumber and Paper
L74 - Construction
L79 - Other
L8 - Industry Studies: Services
L80 - General
L81 - Retail and Wholesale Trade; Warehousing
L82 - Entertainment; Media (Performing Arts, Visual Arts, Broadcasting, Publishing, etc.)
L83 - Sports; Gambling; Recreation; Tourism
L84 - Personal and Professional Services
L85 - Real Estate Services
L86 - Information Services; Computer Software
L89 - Other
L9 - Industry Studies: Transportation and Utilities
L90 - General
L91 - Transportation: General
L92 - Railroads and Other Surface Transportation: Autos, Buses, Trucks, and Water Carriers
L93 - Air Transportation

L94 - Electric Utilities
L95 - Gas Utilities; Pipelines; Water Utilities
L96 - Telecommunications
L97 - Utilities: General
L98 - Government Policy
L99 - Other
M: BUSINESS ADMINISTRATION AND BUSINESS ECONOMICS; MARKETING; ACCOUNTING
M00 - General
M1 - Business Administration
M10 - General
M11 - Production Management
M12 - Personnel Management
M13 - Entrepreneurship
M14 - Corporate Culture; Social Responsibility
M19 - Other
M2 - Business Economics
M20 - General
M21 - Business Economics
M29 - Other
M3 - Marketing and Advertising
M30 - General
M31 - Marketing
M37 - Advertising
M39 - Other
M4 - Accounting
M40 - General
M41 - Accounting
M49 - Other
M5 - Personnel Economics
M50 - General
M51 - Firm Employment Decisions - Promotions (hiring, firing, turnover, part-time, seniority issues)
M52 - Compensation and Compensation Methods and Their Effects (stock options, fringe benefits, incentives, seniority issues)

M53 - Training

M54 - Labour Management (team formation, worker empowerment, job design, tasks and authority, job satisfaction)

M55 - Labour Contracting Devices: Outsourcing - Franchising - Other

M59 - Other

N: ECONOMIC HISTORY

N00 - General

N01 - Development of the Discipline: Historiographical; Sources and Methods

N1 - Macroeconomics and Monetary Economics; Growth and Fluctuations

N10 - General, International, or Comparative

N11 - U.S.; Canada: Pre-1913

N12 - U.S.; Canada: 1913-71

N13 - Europe: Pre-1913

N14 - Europe: 1913-71

N15 - Asia including Middle East

N16 - Latin America; Caribbean

N17 - Africa; Oceania

N2 - Financial Markets and Institutions

N20 - General, International, or Comparative

N21 - U.S.; Canada: Pre-1913

N22 - U.S.; Canada: 1913-71

N23 - Europe: Pre-1913

N24 - Europe: 1913-71

N25 - Asia including Middle East

N26 - Latin America; Caribbean

N27 - Africa; Oceania

N3 - Labour, Demography, Education, Income, and Wealth

N30 - General, International, or Comparative

N31 - U.S.; Canada: Pre-1913

N32 - U.S.; Canada: 1913-71

N33 - Europe: Pre-1913

N34 - Europe: 1913-71

N35 - Asia including Middle East

N36 - Latin America; Caribbean

N37 - Africa; Oceania

N4 - Government, War, Law, and Regulation

N40 - General, International, or Comparative

N41 - U.S.; Canada: Pre-1913

N42 - U.S.; Canada: 1913-71

N43 - Europe: Pre-1913

N44 - Europe: 1913-71

N45 - Asia including Middle East

N46 - Latin America; Caribbean

N47 - Africa; Oceania

N5 - Agriculture, Natural Resources, Environment, and Extractive Industries

N50 - General, International, or Comparative

N51 - U.S.; Canada: Pre-1913

N52 - U.S.; Canada: 1913-71

N53 - Europe: Pre-1913

N54 - Europe: 1913-71

N55 - Asia including Middle East

N56 - Latin America; Caribbean

N57 - Africa; Oceania

N6 - Manufacturing and Construction

N60 - General, International, or Comparative

N61 - U.S.; Canada: Pre-1913

N62 - U.S.; Canada: 1913-71

N63 - Europe: Pre-1913

N64 - Europe: 1913-71

N65 - Asia including Middle East

N66 - Latin America; Caribbean

N67 - Africa; Oceania

N7 - Transport, International and Domestic Trade, Energy, and Other Services

N70 - General, International, or Comparative

N71 - U.S.; Canada: Pre-1913

N72 - U.S.; Canada: 1913-71

N73 - Europe: Pre-1913

N74 - Europe: 1913-71

N75 - Asia including Middle East

N76 - Latin America; Caribbean

N77 - Africa; Oceania

N8 - Micro-Business History

N80 - General, International, or Comparative

N81 - U.S.; Canada: Pre-1913

N82 - U.S.; Canada: 1913-71

N83 - Europe: Pre-1913

N84 - Europe: 1913-71

N85 - Asia including Middle East

N86 - Latin America; Caribbean

N87 - Africa; Oceania

O: ECONOMIC DEVELOPMENT, TECHNOLOGICAL CHANGE, AND GROWTH

O00 - General

O1 - Economic Development

O10 - General

O11 - Macroeconomic Analyses of Economic Development

O12 - Microeconomic Analyses of Economic Development

O13 - Agriculture; Natural Resources; Environment; Other Primary Products

O14 - Industrialization; Choice of Technology

O15 - Human Resources; Income Distribution; Migration

O16 - Financial Markets; Saving and Capital Investment

O17 - Formal and Informal Sectors; Shadow Economy; Institutional Arrangements

O18 - Regional, Urban, and Rural Analyses

O19 - International Linkages to Development; Role of International Organizations

O2 - Development Planning and Policy

O20 - General

O21 - Planning Models; Planning Policy

O22 - Project Analysis

O23 - Fiscal and Monetary Policy in Development

O29 - Other

O3 - Technological Change

O30 - General

O31 - Innovation and Invention: Processes and Incentives

O32 - Management of Technological Innovation and R&D

O33 - Technological Change: Choices and Consequences

O34 - Intellectual Property Rights: National and International Issues
O38 - Government Policy
O39 - Other
O4 - Economic Growth and Aggregate Productivity
O40 - General
O41 - One, Two, and Multisector Growth Models
O42 - Monetary Growth Models
O47 - Measurement of Economic Growth; Aggregate Productivity
O49 - Other
O5 - Economywide Country Studies
O50 - General
O51 - U.S.; Canada
O52 - Europe
O53 - Asia including Middle East
O54 - Latin America; Caribbean
O55 - Africa
O56 - Oceania
O57 - Comparative Studies of Countries
P: ECONOMIC SYSTEMS
P00 - General
P1 - Capitalist Systems
P10 - General
P11 - Planning, Coordination, and Reform
P12 - Capitalist Enterprises
P13 - Cooperative Enterprises
P16 - Political Economy
P17 - Performance and Prospects
P19 - Other
P2 - Socialist Systems and Transitional Economies
P20 - General
P21 - Planning, Coordination, and Reform
P22 - Prices
P23 - Factor and Product Markets
P24 - National Income, Product, and Expenditure; Money; Inflation
P26 - Political Economy

P27 - Performance and Prospects

P29 - Other

P3 - Socialist Institutions and Their Transitions

P30 - General

P31 - Socialist Enterprises and Their Transitions

P32 - Collectives; Communes; Agricultural Institutions

P33 - International Linkages

P34 - Finance

P35 - Public Finance

P36 - Household Behavior

P39 - Other

P4 - Other Economic Systems

P40 - General

P41 - Planning, Coordination, and Reform

P42 - Productive Enterprises; Factor and Product Markets; Prices

P43 - Finance; Public Finance

P44 - National Income, Product, and Expenditure; Money; Inflation

P45 - International Linkages

P46 - Household Behavior

P47 - Performance and Prospects

P49 - Other

P5 - Comparative Economic Systems

P50 - General

P51 - Comparative Analysis of Economic Systems

P52 - Comparative Studies of Particular Economies

P59 - Other

Q: AGRICULTURAL AND NATURAL RESOURCE ECONOMICS

Q00 - General

Q1 - Agriculture

Q10 - General

Q11 - Aggregate Supply and Demand Analysis; Prices

Q12 - Micro Analysis of Farm Firms, Farm Households, and Farm Input Markets

Q13 - Agricultural Markets and Marketing; Cooperatives; Agribusiness

Q14 - Agricultural Finance

Q15 - Land Ownership and Tenure; Land Reform; Land Use; Irrigation

Q16 - R&D; Agricultural Technology; Agricultural Extension Services

Q17 - Agriculture in International Trade

Q18 - Agricultural Policy; Food Policy

Q19 - Other

Q2 - Renewable Resources and Conservation; Environmental Management

Q20 - General

Q21 - Demand and Supply

Q22 - Fishery

Q23 - Forestry

Q24 - Land

Q25 - Water; Air

Q26 - Recreational Aspects of Natural Resources; Contingent Valuation Methods

Q28 - Government Policy

Q29 - Other

Q3 - Nonrenewable Resources and Conservation

Q30 - General

Q31 - Demand and Supply

Q32 - Exhaustible Resources and Economic Development

Q33 - Resource Booms

Q38 - Government Policy

Q39 - Other

Q4 - Energy

Q40 - General

Q41 - Demand and Supply

Q42 - Alternative Energy Sources

Q43 - Energy and the Macroeconomy

Q48 - Government Policy

Q49 - Other

R: URBAN, RURAL, AND REGIONAL ECONOMICS

R00 - General

R1 - General Spatial Economics

R10 - General

R11 - Analysis of Growth, Development, and Changes

R12 - Size and Spatial Distributions of Regional Economic Activity

R13 - General Equilibrium and Welfare Economic Analysis of Regional Economies

R14 - Land Use Patterns

R15 - Econometric and Input-Output Models; Other Models

R19 - Other

R2 - Household Analysis

R20 - General

R21 - Housing Demand

R22 - Other Demand

R23 - Regional Migration; Regional Labour Markets; Population

R29 - Other

R3 - Production Analysis and Firm Location

R30 - General

R31 - Housing Supply and Markets

R32 - Other Production and Pricing Analysis

R33 - Nonagricultural and Nonresidential Real Estate Markets

R34 - Input Demand Analysis

R38 - Government Policies; Regulatory Policies

R39 - Other

R4 - Transportation Systems

R40 - General

R41 - Transportation: Demand, Supply, and Congestion

R42 - Government and Private Investment Analysis

R48 - Government Pricing; Regulatory Policies

R49 - Other

R5 - Regional Government Analysis

R50 - General

R51 - Finance in Urban and Rural Economies

R52 - Land Use and Other Regulations

R53 - Public Facility Location Analysis; Public Investment and Capital Stock

R58 - Regional Development Policy

R59 - Other

Z: OTHER SPECIAL TOPICS

Z00 - General

Z1 - Cultural Economics

Z10 - General

UNIT 5: REVIEW OF LITERATURE

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Review of Literature: Meaning and Concept

5.3.1 The 5 C's of a Literature Review

5.4 Need for Reviewing Literature

5.5 Sources of Literature

5.6 Let Us Sum Up

5.7 Further Reading

5.8 Answer to Check Your Progress

5.9 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the concept and meaning of review of literature
- discuss the 5 Cs of literature review
- outline the need for reviewing literature
- describe the various sources of literature

5.2 INTRODUCTION

When we share knowledge it multiplies. In order to share the acquired, obtained or generated knowledge it is necessary that it must be transmitted, preserved and advanced. But advancement in knowledge takes place when there is suitable transmission and preservation. Practically knowledge can be preserved and transmitted through books, libraries and educational entities. For advancement of knowledge, it is necessary to review the existing knowledge and improve it on logical and justifiable premises. Logic and justification always stem from investigation. But before entering into any investigation an investigator must ensure that the enquiry is not from a vacuum; there should be considerable work to pave the way. Appraising

existing scholarly work is called review of literature. Sometimes, an examination into earlier scholarly work itself provides solution to the problem or answer to a question. In any discipline for the purpose of advancement and up-gradation, a researcher must be thoroughly familiar with both previous theory and hypothesis. In each of the behavioural sciences research, review of literature starts at the very initial stage of the whole research plan and continues till its completion.

In this unit, we shall discuss the concept and meaning of review of literature, its need and various sources.

5.3 REVIEW OF LITERATURE: MEANING AND CONCEPT

Dissection of the term "Review of literature" is self explanatory, it consists of two words i.e., review + literature. The dictionary meaning of review is "a look back at something in order to check, remember, or be clear about something" or "the examining or considering over again of something in order to decide if transformation is needed". Similarly, the dictionary meaning of literature is "pieces of writing that are valued as works of art, especially novels, plays and poems" or "pieces of writing or printed information on a particular subject".

The expression "review of literature" is basically an examination of printed information on a particular subject or a matter. Printed information can be sourced from books, research articles, scholarly work, policy papers, monographs, magazines, newspapers, scriptures, and Government reports, etc.

W.R. Borg has defined review of literature as:

[The literature in any field forms the foundation upon which all future work will be built. If we fail to build the foundation of knowledge provided by the review of literature our work is likely to be shallow and naive and will often duplicate work that has already been done better by some one else.]

Good, Barr and Scates have defined it as:

[The competent physician must keep abreast of the latest discoveries in the field of medicine. Obviously the careful student of education, the research

worker and investigator should become familiar with location and use of sources of educational information.]

Appraising literature is crucial for thesis and any research work. It takes place in two phases. The first phase is called identification phase and the second phase is called foundation stage. In the first phase of the literature-review a researcher identifies all the published material which is related to the research problem and reads those parts with which the researcher is not familiar. It is then that the foundation of the study or formulation of research work takes place. In the second phase, the related material is penned down by the researcher and organised in the relevant section in order to justify or support the thesis/ research work. This particular section in which the literature review is presented engages the attention of both reader as well as researcher. The researcher justifies the background of the study based upon it whereas the readers come to know about earlier researches in the area which develops the understanding for the study. In most of the behavioural sciences, review of theoretical and empirical studies are executed by the researchers. In this manner a complete theoretical foundation with proper justification is laid by the researcher. Hence, it can be said that review of existing literature is an inseparable part of an examination which is to be made or has been performed by the investigator (researcher).

Thus, we can say that literature review is a survey of scholarly sources (such as books, journal articles, and theses) related to a specific topic or research question. It is often written as part of a thesis, dissertation, or research paper, in order to situate the work of the researcher in relation to existing knowledge.

Different parts of literature reviews: Just like an academic paper, literature reviews also contain at least three basic elements: an introduction or background information section; the body of the review containing the discussion of sources; and, finally, a conclusion and/or recommendations section to conclude the discussion.

5.3.1 The 5 C's of a Literature Review

Many researchers have discussed 5 Cs of literature review. These 5 Cs help a researcher to undertake the review of literature systematically. These 5 Cs are: Concise, Clear, Critical, Convincing and Contributing. In the following paragraphs, we shall discuss each of these in some detail.

- **Concise:** The amount of literature available on any given topic can be vast. In today's IT age, the problem becomes even more severe. This is because today one finds thousands of articles and papers on a given topic whenerver an internet search isa made. However, the job of a researcher here is to consciously undertake the literature review based primarily on the research questions. It is at this early stage that the researcher will need to decipher where the gaps of knowledge are within the current research. It has to be narrowed down and presented in a crisp and concise manner.
- **Clear:** The literature pertaining to a research topic will also vary. Some material will be conceptual and other material will be empirical. Referring back to the research questions and asking how the literature pertains to the topic is essential. This can help the researcher to identify common themes, threads and patterns which will help bring about clarity about the topic under study.
- **Critical:** A literature review is more than a summary of materials. Each piece of literature should be critically analyzed for assumptions, beliefs, and values that essentially influence the authors' thought. As a researcher it is at this point that one needs to be critical of the works of others and evaluate the underlying assumptions that may have guided the available works.
- **Convincing:** Synthesis of the literature demands that the researcher gathers all the analyses and develops convincing arguments. The basic goal of the researcher here is to arrive at a valid interpretation of literature resulting from a critical analysis

combined with supporting data.

- **Contributing:** Inclusion of the most relevant information is essential to the literature review. The goal of a literature review is to support research where it is required. The review is intended to extend current knowledge, theory and be influential. The review is not a summary of previous work but a new branch created and supported by the researcher. Thus, it should always try to contribute newer insights into the current realm of research.

5.4 NEED FOR REVIEWING LITERATURE

The review of literature is essential because of the following reasons:

- **Planning and execution of the study:** The manner in which the research work will be executed can be decided by looking into the available past work. Up to date knowledge of the research findings makes it clear aboutb what has already been done and how it has been executed. Based upon earlier work, a plan can easily be chalked out for the problem in hand in a constructive manner.
- **Minimization of replication and repetition:** Awareness helps us to avoid repetition of the same work. Good research work is expected to contain an element of novelty. Hence, review of related literature nullifies replication of the same work.
- **Direction to the study:** Precedent research work by varicious scholars provides insight into the nature of the existing problem and outlines a direction for the study. Quantitative as well as qualitative analysis of the previous work of other scholars also suggests the methodology to attain the objectives of the study.
- **Formulation of Hypothesis:** Hypotheses are assumptions formulated by the researcher in context of a particular phenomenon. But hypotheses cannot be constructed merely on a whim or a gut feeling. Literature survey is an aid to develop a hypothesis. Prominent work in the area provides rationale for the supposition. Approval and disapproval of suppositions made a researcher to discuss the

results of a study at length duly supported by the test and data .

- **Selection of variable and functional form:** In behavioural sciences research, most of the variables are supported by earlier research works. It makes selection of variables less controversial and more authenticated. Functional relationship among the variables can easily be figured out with the help of through reading. Theoretical foundations always pave a way for the empirical testing. For example, the theory of demand holds that there is an inverse relationship between the price and quantity demanded. This functional relationship can be verified in context of various consumer and industrial goods.
- **Identification of research Gap:** Research gap is an issue, query, question or dimension which has not been raised, solved, answered or explored by any of the existing studies or investigations. How can one come to know that a particular dimension of a problem has not been explored till the time? It is only a literature survey that can make it clear. Before a researcher enters into formulation of research objective or hypothesis development of a literature survey is a valuable asset.



CHECK YOUR PROGRESS

Q 1: What is meant by literature review? Answer in about 50 words.

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Q 2: Why is review of literature important? Answer in about 30 words.

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5.5 SOURCES OF LITERATURE

The major sources of literature for review includes the following:

- **Reference Books and Text books:** A large number of books are published in English. The list of such books can be sourced from the publisher in the form of a catalogue or it can be fetched from the libraries. Besides, the website of publishers contains lists of books as well as table of contents of the books published by a particular publication house.
- **Periodicals:** These are printed material which are published regularly after a particular period of time. The time lag is defined, even and distributed over a period of a year. In other words it can be said that periodicals are expected to continue for infinite time but at a regular interval. For example, *Economic and Political Weekly* is a research periodical published in India. Periodicals include Yearbooks, Documents, Almanacs, The Cumulative Book Index, International Abstracts, Journals, Newspapers, Magazines, International Index to Periodicals etc.
- **Abstracts:** It presents the summary of the content. It presents a brief summary of the research work. It also presents the precise idea of the research work. A wide variety of indexes and general references can be found to cover almost any area in which the modern researcher might be interested. In addition to it, the electronic data base that contains the research papers provides free access to the abstracts of the scholarly work.
- **Encyclopaedias:** Encyclopaedias provide concise data on various subjects composed by trained professionals. For specialized field of knowledge there are specialized Encyclopaedias. These contain illustrations, examples and bibliographies.
- **Almanacs, Handbooks, Yearbooks and Guides:** Handbooks and Yearbooks contain information which is statistical in nature. For example SEBI handbook which contains all the quantitative data related to the stock market. Almanacs and guides are general category of reference that includes publications that contain detailed

up-to-date information on various subjects and are well thought out according to a particular theme.

'World Almanac' Book of Facts, New York: It is source of miscellaneous information of various subjects. 'Handbook of Research on Teaching' Chicago: It provides comprehensive research on teaching within depth and extensive bibliographies.

- **Specialized Dictionaries:** These dictionaries contain the meaning of subject specific terminology, expression and jargon. For example Oxford dictionary of English Language, Oxford Dictionary of Finance, Macmillan Dictionary of Economics, Routledge Dictionary of Economics etc.
- **ERIC (Educational Research Information Centre):** The current knowledge explosion makes selective data retrieval the key to the research enterprise as well as to effective educational practice. Major developments in this regard as they relate to the educational literature are ERIC (Educational Research Information Centre) and SRIS (School Research Information Service). ERIC is an attempt to facilitate information exchange and to increase the value of research to the educational community by simply making its results readily available in usable form. In our country NCERT has established a separate ERIC cell to facilitate educational research community
- **Microfiche:** "A microfiche is a sheet of film containing micro-images of printed material. A copy of film 4" × 6" card contains the material of one hundred printed pages of 9" × 11" size. There are many document reproduction services that supply microfiche to libraries upon special order. Super-and Ultra Microfiche is a recent development in the field of micro-printing. It has transformed the process of storage of published material in libraries of the future. A super microfiche has been developed that contains up to two pages of printed material on a single 4" × 6" transparent card, the equivalent of two or more books. An even more spectacular development is the ultra- microfiche that contains up to 3200 micro-dots on a single card of 4" × 6". When projected each dot contains the equivalent of

several pages. Thus, seven to ten volumes can be included on a single 4" × 6" transparent card. Reader printers make hard copy prints of any page in few seconds".

- **Dissertations and Theses:** Theses and dissertations which embody the bulk of educational research are usually housed by institutions and universities that award authors their advanced degrees. Sometimes these studies are published in whole or in part in educational journals. The related dissertations and theses are the main sources of review of literature. The entry 'dissertations and theses' issue of the bibliographic index is the most comprehensive listing of sources of these research in progress.
- **Other Sources:** Besides all these sources following are also important sources of available literature:
  - Newspaper
  - Conference papers
  - Electronic Data-base for example emerald, proquest, J-stor etc.
  - Government reports



CHECK YOUR PROGRESS

Q 3: Mention the major sources for literature review. Answer in about 30 words.

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Q 4: What is ERIC? Answer in about 30 words.

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5.6 LET US SUM UP

- In order to share the acquired, obtained or generated knowledge it is necessary that it must be transmitted, preserved and advanced.

- Advancement in knowledge takes place when there is suitable transmission and preservation. Knowledge can be preserved and transmitted through books, libraries and educational entities.
- For advancement of knowledge, it is necessary to review the existing knowledge and improve it on logical and justifiable premises.
- Before entering into any investigation an investigator must ensure that the enquiry is not in a vacuum; there should be considerable work to pave the way.
- Appraising existing scholarly work is called review of literature.
- On several occassions an examination into earlier scholarly work itself provides solution to the problem or answer to a question.
- In any discipline for the purpose of advancement and up-gradation, a researcher must be thoroughly familiar with both previous theory and hypothesis.
- Many researchers have discussed 5 Cs of literature review. These 5 Cs help researchers to undertake the review of literature very systematically. These 5 Cs are: Concise, Clear, Critical, Convincing and Contributing.
- Appraising literature is crucial for thesis and any research work. It takes place in two phases.
- The first phase is called identification phase and the second phase is called foundation stage. In the first phase of the literature-review a researcher identifies all published material which is related to the problem and reas related materials with which the researcher is not familiar and the foundation of the study or formulation of research work begins.
- In the second phase the related material is organised by the researcher and placed in the relevant section in order to justify or support the thesis/ research work.
- This particular section in which the literature is presented fetches the attention of both reader as well as researcher. The researcher justifies the background of the study based upon it whereas the readers come to know about the abstract and earlier research which

develop the understanding for the study.

- Review of literature is essential for planning and execution of the study, minimization of replication and repetition, giving direction to the study, formulation of hypothesis, selection of variables and functional form etc.
- The major sources of literature for review include books and text books, periodicals, abstracts, encyclopaedias, almanacs, handbooks, yearbooks and guides, specialized dictionaries, ERIC, microfiche etc.
- Apart from those, other important sources include: newspapers, conference paper, electronic data-base for example emerald, pro-quest, J-stor, government reports etc.



5.7 FURTHER READING

(1) Cooper D. and Schindler P. Business Research Methods, Tata McGraw Hill.

(2) Goode and Heart, Research Method

(3) Jerry W. Willis, Foundations of Qualitative research: Interpretative and Critical Approaches. Sage.

(4) Kothari R.C. Research Methodology, Methods and Techniques, New Age International Publishers, 2nd revised edition, Reprint 2008.



5.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Literature review is a survey of scholarly sources (such as books, journal articles, and theses) related to a specific topic or research question. It is often written as part of a thesis, dissertation, or research paper, in order to situate the work of the researcher in relation to existing knowledge.

Ans to Q No 2: Review of literature is needed for planning and execution of the study, minimization of replication and repetition, direction to the

study, formulation of hypothesis. selection of variables and functional form etc.

Ans to Q No 3: Major sources of literature for review include books and text books, periodicals, abstracts, encyclopaedias, almanacs, handbooks, yearbooks and guides, specialized dictionaries, ERIC, microfiche etc.

Ans to Q No 4: ERIC is an attempt to facilitate information exchange and to increase the value of research to the educational community by simply making its results readily available in usable form.



5.9 MODEL QUESTIONS

Answer the following questions in about 300 words.

Q 1: Discuss the concept and meaning of review of literature.

Q 2: Discuss the need for reviewing the existing literature.

Q 3: Discuss the various sources of literature review.

Q 4: Discuss the 5 C's of literature review.

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UNIT 6: RESEARCH PROBLEM

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Identification of the Research Problem

6.4 Selection of Research Problem: Contributing Factors

6.5 Technique Involved in Defining a Problem

6.7 Let Us Sum Up

6.8 Further Reading

6.9 Answer to Check Your Progress

6.10 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- identify a research problem
- discuss the factors involved in the selection of a research problem
- describe the technique involved in the selection of a research problem

6.2 INTRODUCTION

This unit deals with the discussion on research problem. In the process of research, proper definition and identification of the research problem is of utmost importance. The entire outcome of research depends on the identification of the research problem. How we identify the research problem and how best we describe it, is very crucial for all other research activities, viz., formulation of research hypothesis, application of research tools etc. This unit will be helpful in proper identification of the research problem as well as in selection of research problem and utilization of proper technique in that process.

6.3 IDENTIFICATION OF THE RESEARCH PROBLEM

In research process, the first and foremost step happens to be that

of identifying and properly defining a research problem. Identification of research problem is a brainstorming process and it involves thinking in a logical manner. Normally, thinking may be classified into four categories: convergent, divergent, reflective and scientific thinking. Convergent thinking basically focuses on coming up with the single, well-established answer to a problem. It is oriented toward deriving the single best, or most often the correct answer to a question. Convergent thinking is used as a tool in creative problem solving. On the other hand, divergent thinking is described as the thought process or method used to generate creative ideas by exploring many possible solutions. It typically occurs in a spontaneous, free-flowing, "non-linear" manner, such that many ideas are generated in an emergent cognitive fashion. Similarly, in reflective thinking individual conceived for a new solution for an old problem, but scientific thinking is in terms of carefully organized reflection. Identification of a research problem is exploratory in nature and it is sought to understand the pattern of relationship between/ among different variables. A researcher must find the problem and formulate it so that it becomes susceptible to research. To identify a problem correctly, a researcher must know: what is a problem? The research problem can be identified either in qualitative or quantitative terms. In a simple terms identification of pattern of occurrence or what, why and how, of a happening is called identification of research problem whose solution or answer is sought by the researcher. Following are the crucial elements of a research question or a research problem:

There should be an entity or entities which needs an investigation or enquiry. sThere should be some research goals to be achieved. If one does not have a research goals, one will not know what research problem to pursue. One should have access to resources and methods to attain the research goals.. If there will not be alternative methods to attain the defined research goals, the researcher will not have any problem to be identified.

There should be some sort of rationality with respect to selection of methods and means. It will make a researcher to justify the relevance of a particular method and means.

There should be some background to which the trouble/ problem/ ambiguity relates. It could be an event or a socio-economic and psychological phenomenon.

For example, if an economist has to explore the reasons of fall in the gross domestic product, it is a problem related to individual inquisitiveness. What the economist will attain by figuring out the reasons of low gross domestic product? - It is related to the objective of the economist. Through which particular methods the economist will be evidencing his findings? It is related to selection of available method and means.

Thus, a research problem is one which requires a researcher to find out the best solution for the given problem, i.e., to find out by which course of action the objective can be attained optimally in the context of a given environment.

6.4 SELECTION OF RESEARCH PROBLEM: CONTRIBUTING FACTORS

Several factors can complicate identification of a research problem, such as, large number of -interconnected events or socio-economic phenomena, personal bias, lack of resources, delayed response, dynamic environment, technology transformation, and response of the groups or individuals. All or some of these factors may be crucial to identify a research problem. Nevertheless, following factors might be involved in the selection of problem.

- **Individual preference and interest:** Selection of a research problem can be made by a corporate or a non-corporate entity. A corporate entity looks for solution of the problem that can bring in revenue whereas, a non-corporate entity always picks up the issues related to the society, people and environment. In addition to it a person tries to address the research problem according to inclination and personal interest. Chief motivation in selection of a research problem is the personal inclination of the researcher. For example, the person who has interest in agriculture economics will abstain

from the issues of business economics.

- **Time-lines and urgency:** Time- line is the duration in which solution to a particular problem/ situation or answer to a specific question is expected. The nature of the problem and urgency are the deciding factors in selection of a problem. For example, the time period required to diagnose the reason of hair fall is less in contrast to the time period required to develop a new medicine for it. In the similar manner, vaccine for COVID developed in a very short duration in comparison to the time period required to develop a vaccine in the normal situation due to the urgency factor. In some cases, there may be certain issues that are exceptionally captivating, promising, and have importance, yet the researcher cannot examine them in the given time.
- **Resources accessibility:** In order to address a particular research issue availability of resources is significant. In behavioral sciences books, magazine, library facilities etc. are significant in selection of a research topic. For example, it will be difficult to take up the issue of national interest as a research project for a person who is there in a college in some remote area due to limited availability of resources like library, database, software for data analysis etc. Whereas if a person is in some university, the resources are easily available, and consequently selection of a research problem or research topic vary in quality and nature.

  In core sciences or engineering in addition to library resources the availability of laboratory, equipment and materials are crucial for selection of a research topic.
- **Importance and significance:** In behavioral sciences the issues which are significant in practical life is additionally answerable by the choice of a research topic. The general surrounding also contributes in selection of a research problem. Everybody appreciates pursuing a research objective that has a great deal of pragmatic ramifications. The importance of a particular issue to the society and availability of resources leads to the selection of the research

problem. In addition, selection of the topic should be such that it promises a solution.

- **Researcher Knowledge:** Understanding of the problem becomes better when it is backed by the knowledge component. Skills and competencies of a researcher can aid the knowledge of the researcher.

  Researcher's subject specific knowledge and depth of information should can assist the researcher in effectively choosing a research problem that requires investigation.



CHECK YOUR PROGRESS

Q 1: Define a research problem. Answer in about 50 words

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6.5 TECHNIQUE INVOLVED IN DEFINING A PROBLEM

Let us start with the question: What does one mean when he/she wants to define a research problem? The answer may be that one wants to state the problem along with the bounds within which it is to be studied. In other words, defining a problem involves the task of laying down boundaries within which a researcher shall study the problem keeping in view a pre-determined objective.

Defining a research problem is undoubtedly a herculean task. However, it must be tackled intelligently to avoid the ambiguity encountered in a research operation. The usual approach is that the researcher should himself/herself pose a question (or in case someone else wants the researcher to carry on research, the concerned individual, organisation or an authority should provide a problem/question to the researcher) and set-up techniques and procedures for throwing light on the question concerned for formulating

or defining the research problem. But such a casual approach generally does not produce definitive results because the question framed in such a fashion may be very broad general terms and as such may not be in a form suitable for testing.

Defining a research problem properly and clearly is a crucial part of a research study and must in no case be accomplished hurriedly. However, in practice this is frequently overlooked which may land a researcher into problems later on. Hence, the research problem should be defined in a systematic manner, giving due weightage to all related points. The technique for the purpose involves undertaking the following steps: (i) statement of the problem in a general way; (ii) understanding the nature of the problem; (iii) surveying the available literature (iv) developing the ideas through discussions; and (v) rephrasing the research problem into a working proposition.

A brief description of all these points will be helpful.

- **Statement of the problem in a general way:** First of all, the problem should be stated in a general way, keeping in view either some practical concern or some scientific or intellectual interest. For this purpose, the researcher must immerse himself/herself thoroughly in the subject matter concerning which he/she wishes to pose a problem. In social research, it is advisable to do some field observation and as such the researcher may undertake some sort of preliminary survey or what is often called pilot survey. Then the researcher can himself/herself state the problem or he/she can seek the guidance of the guide or the subject expert in accomplishing this task. Often, the guide puts forth the research problem in general terms, and it is then up to the researcher to narrow it down and phrase the problem in operational terms. In case there is some directive from an organisational authority, the problem then can be stated accordingly. The problem stated in a general way may contain various ambiguities which must be resolved by systematically thinking and rethinking over the problem. At the same time the feasibility of a particular solution has to be considered and the same should be kept in view

while stating the problem.

- **Understanding the nature of the problem:** The next step in defining the problem is to understand its origin and nature clearly. The best way of understanding the problem is to discuss it with those who first raised it in order to find out how the problem originally came about and with what objectives in view. If the researcher has stated the problem himself/herself, he/she should consider once again all those points that induced him/her to make a general statement concerning the problem. For a better understanding of the nature of the problem involved, he/she can enter into discussion with those who have a good knowledge of the problem concerned or similar other problems. The researcher should also keep in view the environment within which the problem is to be studied and understood.
- **Review of literature:** All available literature concerning the problem at hand must necessarily be reviewed and examined before a definition of the research problem is given. This means that the researcher must be well-conversant with relevant theories in the field, reports and records, as also all other relevant literature. He/she must devote sufficient time in reviewing of research already undertaken on related problems. This is done to find out what data and other materials, if any, are available for operational purposes. Proper knowledge about the data available often serves to narrow the problem itself as well as the technique that might be used. This would also help a researcher to know if there are certain gaps in the theories, or whether the existing theories applicable to the problem under study are inconsistent with each other, or whether the findings of the different studies do not follow a pattern consistent with the theoretical expectations and so on. All this will enable a researcher to take new strides in the field for furtherance of knowledge i.e., he can move up starting from the existing premise. Studies on related problems are useful for indicating the type of difficulties that may be

encountered in the present study as also the possible analytical shortcomings. At times such studies may also suggest useful and even new lines of approach to the present problem.

- **Developing the ideas through discussions:** Discussion concerning a problem often produces useful information. Various new ideas can be developed through such an exercise. Hence, a researcher must discuss his/her research problem with his/her colleagues and others who have enough experience in the same area or is working on similar problems. This is quite often known as an experience survey. People with rich experience are in a position to enlighten the researcher on different aspects of his/her proposed study and their advice and comments are usually invaluable to the researcher. They help him/her sharpen his focus of attention on specific aspects within the field. Discussions with such persons should not only be confined to the formulation of the specific problem at hand, but should also be concerned with the general approach to the given problem, techniques that might be used, possible solutions, etc.
- **Rephrasing the research problem:** Finally, the researcher must sit to rephrase the research problem into a working proposition. Once the nature of the problem has been clearly understood, the environment (within which the problem has got to be studied) has been defined, discussions over the problem have taken place and the available literature has been surveyed and examined, rephrasing the problem into analytical or operational terms is not a difficult task. Through rephrasing, the researcher puts the research problem in as specific terms as possible so that it may become operationally viable and may help in the development of working hypotheses.

  In addition to what has been stated above, the following points must also be observed while defining a research problem:

  - Technical terms and words or phrases, with special meanings used in the statement of the problem, should be clearly defined.
  - Basic assumptions or postulates (if any) relating to the research

problem should be clearly stated.

- A straight forward statement of the value of the investigation (i.e., the criteria for the selection of the problem) should be provided.
- The suitability of the time-period and the sources of data available must also be considered by the researcher in defining the problem.
- The scope of the investigation or the limits within which the problem is to be studied must be mentioned explicitly in defining a research problem.



CHECK YOUR PROGRESS

Q 2: Mention the four major steps in defining a research problem. Answer in about 50 words.

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Q 3: How does review of literature help in the research process. Answer in about 60 words.

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6.5 LET US SUM UP

- The task of defining a research problem, very often, follows a sequential pattern-the problem is stated in a general way, the ambiguities are resolved, thinking and rethinking process results in

a more specific formulation of the problem so that it may be a realistic one in terms of the available data and resources and is also analytically meaningful.

- All this results in a well-defined research problem that is not only meaningful from an operational point of view, but is equally capable of paving the way for the development of working hypotheses and for means of solving the problem itself.
- Defining a research problem properly and clearly is a crucial part of a research study and must in no case be accomplished hurriedly. However, in practice this is frequently overlooked causing problems later in research.
- The research problem should be defined in a systematic manner, giving due weightage to all related points.
- The technique for the purpose involves the undertaking of four major steps: (i) statement of the problem in a general way; (ii) understanding the nature of the problem; (iii) surveying the available literature (iv) developing the ideas through discussions; and (v) rephrasing the research problem into a working proposition.



6.7 FURTHER READING

(1) Guthrie, G. (2010) Basic Research Methods: An Entry to Social Science Research, Sage Publications, New Delhi, India

(2) Kumar, R. (2011) Research Methodology, Sage Publications, New Delhi, India

(3) Nachmias, D., and Nachmias C. (2014) Research Methods in Social Sciences, St. Martin's Press, New York



6.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: A research problem is one which requires a researcher to find out the best solution for the given problem, i.e., to find out by

which course of action the objective can be attained optimally in the context of a given environment.

Ans to Q No 2: The four major steps in defining a research problem are: (i) statement of the problem in a general way; (ii) understanding the nature of the problem; (iii) surveying the available literature (iv) developing the ideas through discussions; and (v) rephrasing the research problem into a working proposition.

Ans to Q No 3: Review of literature helps a researcher to take new strides in the field for furtherance of knowledge i.e., s/he can move up starting from the existing premise. Studies on related problems are useful for indicating the type of difficulties that may be encountered in the present study as also the possible analytical shortcomings. At times such studies may also suggest useful and even new lines of approach to the present problem.



6.9 MODEL QUESTIONS

Answer the following questions in about 300-500 words.

Q 1: Discuss the process of identification of the research problem.

Q 2: Discuss the different factors that affect the selection of a research problem.

Q 3: Discuss the different techniques Involved in defining a research problem.

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UNIT 7: RESEARCH DESIGN

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Concept of Research Design

7.4 Features of Good Research Design

7.5 Steps in Research Design

7.6 Types of Research Design

7.7 Let Us Sum Up

7.8 Further Reading

7.9 Answer to Check Your Progress

7.10 Model Questions

7.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss the concept, need and importance of research design
- discuss the features of good research design
- describe the steps in research design
- analyse the different types of research design.

7.2 INTRODUCTION

In the previous unit, the concept of research methods, types of research in economics and how to frame a good review of literature have been discussed. In this unit, we shall discuss the concept of research design. The concept of research design is very important in research methods. It is a plan of action, a plan of collecting and analysing data in economics in an efficient and relevant manner.

7.3 CONCEPT OF RESEARCH DESIGN

While undertaking research, defining the research problem is central to the entire process of research. To define the research problem precisely,

the researcher has to prepare the research design. Claire Selltiz and others have defined it in these words: "A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure." Thus, the research design provides the researcher with a conceptual framework within which the research is conducted. Essentially, it may be called a blueprint for the collection, measurement and analysis of data.

In a nutshell, the overall strategy that a researcher chooses to integrate different components of research in a most logical way is known as Research Design. In other words, through the research design, the researcher tries to get the answer of the following questions:

- What is the study about?
- Why is the study being made?
- What type of data is required?
- Where can the required data be collected?
- What periods of time will the study include?
- What will be the sample design?
- What techniques of data collection will be used?
- How will the data be analysed?
- In what style will the report be presented?

So, in simple words, the research design is a procedural planning of the whole research.

7.4 FEATURES OF GOOD RESEARCH DESIGN

For smooth functioning of the research operations, the proper planning of research design is necessary. An efficient and appropriate design must be prepared before conducting a research. It reduces the inefficiencies, flaws and gives us an idea for organizing our research. It is needed for providing the comprehensive review on the particular topic. A good research design must be flexible, appropriate, efficient, as well as economical in conducting the research. The design that includes maximum information and provides an opportunity to study the problem in most appropriate and efficient manner is considered as good research design.

Features of Good Research Design: The important features of the research design are as follows:

- The objectives of the study are well organized.
- The source and methods of data should be well defined.
- The research methods should be well linked with the theoretical background of the study.
- Study of sample and sample techniques should be well defined.
- The tools of data analysis should be clearly defined.
- Place and time framework should be well defined.
- The research design should minimise the subjectivity and maximise the reliability of data.
- Steps to be taken to get the plan executed should be defined.



CHECK YOUR PROGRESS

Q 1: State whether the following statements are True (T) or False (F)

(i) The objective of the research should not be clearly defined. (T/F)

(ii) The research design tells us what the study is about. (T/F)

Q 2: What is meant by Research Design? Answer in about 60 words.

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Q 3: Mention some of the important features of a good research design. Answer in about 60 words.

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7.5 STEPS IN RESEARCH DESIGN

The components of the research design include the following steps:

- **Selection and definition of a problem:** The problem selected for study should be clearly defined so that the researcher knows that what facts s/he is looking for and what is the relevant of the study. The problem selected should be practical in costs of time and money.
- **Source of data:** Once the problem is selected the researcher has to state the source of information or in other words the means of data collection such as book, journal, field work etc.
- **Nature of study:** The research design should be expressed in relation to the nature of the study to be undertaken. The researcher must choose the appropriate research design so that the following steps in planning may have relevance in the proposed study.
- **Objective of the study:** The objective of the study must be clearly defined. It is required for the timely responses from the respondents also.
- **Social-Cultural context:** A research design is always set in the context which has social and cultural bearing on the individuals.
- **Temporal Context:** The geographical unit of design should also be referred to at this stage that the research related to hypothesis is applicable to particular social groups only.
- **Dimension:** It is impossible to collect data from the large universe. Hence, the selection of adequate and representative sample is necessary for any research. Depending upon the dimensions of the proposed study, it can be selected.
- **Basis of Selection:** In this step the adequate and representative sample should be selected. The method of collecting sample should be carefully chosen by the researcher which will be scientifically valid and unbiased.

Techniques of data collection: Considering the study design, a suitable technique shall be adopted for the collection of data required. Once the collection of data is complete, analysis, coding and presentation of the

report must be followed.



7.6 TYPES OF RESEARCH DESIGN

The different types of research designs help the researcher to select the model for the study. While arriving at a particular research design, we must consider that there are three major approaches to research, viz., quantitative, qualitative and mix-method research designs. Now, these three different approaches follow different research designs. Based on the book *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (Sage, 2018), written by John W. Creswell and J. David Cresswell the different research designs under the above three approaches have been adapted as under:

Table 7.1: Various Research Designs

Quantitative	Qualitative	Mixed Methods
• Experimental designs. • Non-experimental designs, such as surveys. • Longitudinal designs.	• Narrative research. • Phenomenology. • Grounded theory. • Ethnographies. • Case Study	• Convergent-parallel. • Explanatory sequential. • Exploratory sequential. • Complex designs with embedded core designs.

Now, we shall discuss these different types of research design in brief.

- **Experimental research design:** It establishes the relationship between the cause and effect of a situation. It was stated that

experimental studies are the ones that are concerned with the testing of the casual hypothesis. Such studies require procedures that will not only reduce bias and increase reliability, but will permit drawing inferences about causality. Usually experiments meet this requirement. Hence, when we talk of research design in such studies, we often mean the design of experiments. It is a design in which some of the variables being studied are manipulated or which seek to control conditions within which persons are observed. In this, control means holding one factor constant while others are free to vary in the experiment. One variable (independent) is manipulated and its effects upon another variable (dependent) is measured, while other variables which may confound such a relationship are eliminated or controlled. The designed in the experimental research thus consists of two types of groups: (i) control group, which is not exposed to experimental variable, (ii) experimental group, which is exposed to experimental variable.

- **Non-experimental research design:** Non-experimental research design lacks the manipulation of an independent variable. Rather than manipulating an independent variable, researchers conducting non-experimental research simply measure variables as they naturally occur (in the lab or real world). It is to be noted here that while experimental research can provide strong evidence that changes in an independent variable cause differences in a dependent variable, non-experimental research generally cannot. However, this inability to make causal conclusions does not mean that non-experimental research is less important than experimental research.

  Use non-experimental research design: There are many times in which non-experimental research is preferred. Some of them include:

  - In situations when the research question or hypothesis relates to a single variable rather than a statistical relationship between two variables (e.g., How accurate are people's first impressions?).

- In situations when the research question pertains to a non-causal statistical relationship between variables (e.g., is there a correlation between verbal intelligence and mathematical intelligence?).
- When the research question is about a causal relationship but the independent variable cannot be manipulated or participants cannot be randomly assigned to conditions or orders of conditions for practical or ethical reasons (e.g., does damage to a person's hippocampus impair the formation of long-term memory traces?).
- Similarly, when the research question is broad and exploratory, or is about what it is like to have a particular experience (e.g., what is it like to be a working mother diagnosed with depression?).

It is to be noted here that the choice between the experimental and non-experimental approaches is generally dictated by the nature of the research question. When the goal is to explain and the research question pertains to causal relationships, then the experimental approach is typically preferred. But when the goal is to describe or to predict, a non-experimental approach will suffice. But the two approaches can also be used to address the same research question in complementary ways.

- **Longitudinal research design:** Longitudinal research is occasionally used to study unique individual cases. Longitudinal case studies are studies that gather copious amounts of data on a single person or small groups of people. For example, a five-year study of children learning to read would be a cohort longitudinal study.

  Thus, a longitudinal study, like a cross-sectional one, is observational. In this case the researchers do not interfere with their subjects. However, in a longitudinal study, researchers conduct several observations of the same subjects over a period of time, sometimes lasting many years.

  It is to be noted here that there are a range of different types of longitudinal studies: cohort studies, panel studies, record linkage

studies etc. These studies may be either prospective or retrospective in nature.

- **Narrative Research:** This is a literary form of qualitative research. Narrative research is all about collecting and telling a story or stories (in detail). Researchers write narratives about experiences of individuals, describe a life experience, and discuss the meaning of the experience with the individual.

  Narrative research aims to explore and conceptualise human experience as it is represented in textual form. Aiming for an in-depth exploration of the meanings people assign to their experiences, narrative researchers work with small samples of participants to obtain rich and free-ranging discourse. The primary emphasis remains here on storied experience. Generally, this takes the form of interviewing people around the topic of interest, but it might also involve the analysis of written documents. Narrative research as a mode of inquiry is used by researchers from a wide variety of disciplines, which include anthropology, communication studies, cultural studies, economics, education, history, linguistics, medicine, nursing, psychology, social work, and sociology. It encompasses a range of research approaches including ethnography, phenomenology, grounded theory, narratology, action research, and literary analysis.

- **Phenomenology:** Phenomenology is an approach to qualitative research that focuses on the commonality of a lived experience within a particular group. Typically, interviews are conducted with a group of individuals who have first-hand knowledge of an event, situation or experience.

  The main purposes of phenomenological research are to seek reality from individuals' narratives of their experiences and feelings, and to produce in-depth descriptions of the phenomenon.

- **Grounded theory:** Grounded theory involves the collection and analysis of data. The theory is "grounded" in actual data, which means the analysis and development of theories happens after the

researcher collects the data. It was introduced by Glaser & Strauss in 1967 to legitimize qualitative research. However, it's use isn't limited to qualitative studies; it is a general method that can be applied to many areas of research.

The methodological strategies of grounded theory are aimed to construct middle-level theories directly from data analysis. The inductive theoretical thrust of these methods is central to their logic. The resulting analyses build their power on strong empirical foundations. These analyses provide focused, abstract, conceptual theories that explain the studied empirical phenomena.

- **Ethnographies:** Ethnographic research is a qualitative method where researchers observe and/or interact with a study's participants in their real-life environment. Initially, ethnography research method was popularised by anthropology, but is used across a wide range of social sciences.

  The objective of this type of research is to gain insights into how users interact with things in their natural environment. This research provides an in-depth insight into the user's views and actions along with the sights and sounds they encounter during their day. It provides the researcher with an understanding of how those users see the world and how they interact with everything around them.

  Ethnography research methods include direct observation, diary studies, video recordings, photography and artefact analysis such as devices that a person uses throughout the day. Observations can be made anywhere from the user's workplace, their home or while they are out with family and friends. The length of the studies can vary depending on the research that is being conducted. They can range from a couple of hours of observation to studies that last several months.

- **Case study:** A case study is a research technique that is used to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the

social sciences, psychology, anthropology, ecology and also in professional field like management.

This method of study is especially useful for trying to test theoretical models by using them in real world situations. For example, if an anthropologist were to live amongst a remote tribe, whilst their observations might produce no quantitative data, they are still useful to science.

Some argue that because a case study is such a narrow field, its results cannot be extrapolated to fit an entire question and that they show only one narrow example. On the other hand, it is argued that a case study provides more realistic responses than a purely statistical survey.

The argument between case study and statistical method also appears to be one of scale. While many 'physical' scientists avoid case studies, for Psychology, Anthropology and Ecology they are an essential tool. It is important to note that a case study cannot be generalized to fit a whole population or ecosystem. Yet, they offer greater insights into certain specific cases.

- **Convergent-parallel approach:** The convergent-parallel approach is concurrent approach and involves the simultaneous collection of qualitative and quantitative data, followed by the combination and comparisons of these multiple data sources (i.e., the two methods are ultimately merged). This approach involves the collection of different but complementary data on the same phenomena. Thus, it is used for the converging and subsequent interpretation of quantitative and qualitative data. This approach is often referred to as the concurrent triangulation design (single-phase) because the data is collected and analysed individually but at the same time.

  A basic rationale for this design is that one data collection form supplies strengths to offset the weaknesses of the other form, and that a more complete understanding of a research problem results from collecting both quantitative and qualitative data. For example, quantitative scores on an instrument from many individuals provide

strengths to offset the weaknesses of qualitative documents from a few people. Alternatively, qualitative, in-depth observation of a few people offers strength to quantitative data that does not adequately provide detailed information about the context in which individuals provide information (e.g., the setting).

- **Explanatory sequential approach:** The explanatory-sequential approach is a sequential approach and is used when the researcher is interested in following up the quantitative results with qualitative data. Thus, the qualitative data is used in the subsequent interpretation and clarification of the results from the quantitative data analysis. In many instances, because the quantitative research design is the emphasis, a generic qualitative research design is used in explanatory approaches. The rational for this approach is that the quantitative data and results provide a general picture of the research problem; more analysis, specifically through qualitative data collection is needed to refine, extend or explain the general picture. However, either the qualitative or quantitative data (or both equally) may be the primary focus of the study.
- **Exploratory sequential approach:** This approach may be seen as reverse to the explanatory sequential mixed method research approach. In the exploratory sequential mixed method, the qualitative and quantitative data collection and analysis is in a sequence of phases. Here, in the first phase, researchers collect qualitative data and then analyze the data, the results of which direct the next, quantitative phase, which could be a survey or some other form of quantitative data collection. Thus, the qualitative analysis provides critical fodder for developing specific research questions for the quantitative phase which involve a questionnaire, survey, or other form of quantitative data collection. The rationale for this approach lies in first exploring a topic before deciding what variables need to be measured.
- **Complex designs with embedded core designs:** The embedded approach is a nested approach and is used when one type of data

(qualitative and quantitative) is most critical to the researcher. This approach is used when different questions require different types of data (qualitative and quantitative). The embedded approach is appropriate when one type of data clearly plays a secondary role and would not be meaningful if not embedded within the primary data set. The embedded approach is also useful when the researcher logistically cannot place equal priority on both types of data or simply has little experience with one of the forms of data. Many variants of the embedded approach have been proposed, such as the embedded narrative and ethnographic designs.



CHECK YOUR PROGRESS

Q 4: State whether the following statements are True (T) or False (F)

(i) The research design starts with the selection of problem. (T/F)

(ii) The Descriptive research design is not based upon the theory. (T/F)

Q 5: What is meant by Experimental Research Design? Answer in about 50 words.

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Q 6: Mention the steps in research design. Answer in about 40 words.

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7.7 LET US SUM UP

- While undertaking research, defining the research problem is central to entire process of research. To define the research problem precisely, the researcher has to prepare the research design
- In a nutshell, the overall strategy that a researcher chooses to integrate different components of research in a most logical way is known as Research Design.
- An efficient and appropriate design must be prepared before conducting a research. It reduces the inefficiencies, flaws and gives us an idea for organizing our research. It is needed for providing the comprehensive review on the particular topic.
- A good research design must be flexible, appropriate, efficient, as well as economical in conducting the research.
- The different types of research designs help the researcher to select the model for the study.
- While arriving at a particular research design, we must consider that there are three major approaches to research, viz., quantitative, qualitative and mix-method research designs.



7.8 FURTHER READING

(1) Kothari, C.R. (2008). Research Methodology, Methods and Techniques. New Delhi: New Age International Publishers

(2) Cooper, D. & Schindler P. (2015). Business Research Methods, Tata McGraw Hill.

(3) Goode and Hatt (1952). Methods im Social Research. New Delhi: Surjeet Publications.

(4) Willis, J. W. (2007). Foundations of Qualitative research: Interpretative and Critical Approaches. Sage.



7.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (i) False (ii) True

Ans to Q No 2: A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Thus, the research design provides the researcher a conceptual framework within which the research is conducted. Thus, it may be called a blueprint for the collection, measurement and analysis of data.

Ans to Q No 3: Some of the important features of research design include:

- It should minimize bias and maximise the reliability of data.
- The source and methods of data should be well defined.
- The research should be well linked with the theoretical background.
- Study of sample and sample techniques should be well defined.
- The tools of data analysis should be clearly defined.
- Steps to be taken to get the plan executed should be defined.

Ans to Q No 4: (i) True (ii) False

Ans to Q No 5: An experimental research design establishes the relationship between the cause and effect of a situation. It was stated that experimental studies are ones that are concerned with the testing the casual hypothesis. Such studies require procedures that will not only reduce bias and increase reliability, but will permit drawing inferences about causality.

Ans to Q No 6: The steps of the research design include the Selection and definition of a problem, Source of data, Nature of study, Object of study, Social-Cultural context, Temporal Context, Dimension, Basis of Selection and Techniques of data collection.



7.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Write a short note on the concept of Research Design.

Q 2: Discuss the features of Good Research Design.

Q 3: Describe Descriptive research design.

Essay-type Questions (Answer each question in about 300-500 words)

Q 1: Explain the steps in Research Design.

Q 2: Write an essay on various type of Research Design.