PG SW S2-03 (DSC)

TWO YEAR MASTER'S DEGREE COURSE

(CBCS in Accordance with NEP 2020)

SEMESTER- II

Social Work Research and Statistics

SOCIAL WORK

Surya Kumar Bhuyan School of Social Sciences

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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CONTENTS

Social Work Research and Statistics

Unit 1- Introduction to Social Work Research: **7-22**

Meaning And Definition Of Research; Nature And Significance Of Research; Characteristics Of Research; Definition And Meaning Of Social Research; Importance And Characteristics Of Social Research.

Unit 2- Social Research and Social Work Research: **23-34**

Distinctive Features of Social Work Research; Scope And Need of Social Work Research; Steps in Social Work Research,Scientific Methods; Research Ethics.

Unit 3- Types of Social Work Research: **35-54**

Intervention Research and Practice based Research; Action research, Needs Assessment Studies; Situational Analysis, Monitoring and Evaluation.

Unit 4- Research Designs: **55-66**

Meaning And Definition Of Research Design; Components Of Research Design: Title Of The Study, Statement Of The Problem, Review Of Previous Studies, Objectives Of The Study, Formulation Of Hypotheses, Methods Of Data Collection, Tools For Data Collection, Sampling; Need and importance of research design; Features of good research design.

Unit 5- Types Of Research Design: **67-93**

Exploratory Research Design; Descriptive Research Design; Experimental Research Design; Diagnostic Research Design, Survey and Case Study Methods; Difference Between Quantitative And Qualitative Research Designs.

Unit 6- Research Methodology: **94-104**

Identification of the Problem; Formulation of the Problem; Literature Review; Formulation of Objectives and Hypothesis; Concepts and Definition; Methods Of Data Collection

Unit 7- Sampling: **105-128**

Meaning of Sampling; Types of Sampling Methods: Probability and Non Probability Sampling with Advantages and Limitations of Each Category.

Unit 8- Methods of Data Collection: **129-150**

Data Collection: Meaning;Sources of Data Collection; Tools for Data Collection: Interviewing, Questionaire, Observation, Focused Group Discussion; Concept of Interview Schedule and Interview Guide

Unit 9- Processing of Data: **151-160**

Editing and Coding; Classification and Tabulation of Data; Diagramatical Reresentation of Data; Graphical Representation of Data

Unit 10- Basic Statistics for Social Research: **161-174**

Meaning and Definition of Statistics; Functions of Statistics; Importance of Statistics in Social Research; Frequency Distribution and Tabulation

Unit 11- Applications of Statistics: **175-198**

Measures of Central Tendency / Averages; Measures of Variability / Dispersion

Unit 12- Measures of Association: **199-211**

Correlation Coefficient; Chi-Square (χ^2) Distribution; t-Distribution; F- Distribution and Analysis of Variance .

Unit 13- Interpretation and Presentation of Statistical Data: **212-230**

Tabulation of Data:Parts of Table, General Rules for Making Tables, Types of Table; Diagrammatic Representation of Data: General Rules of Drawing Diagrams, Types of Diagram; Graphical Representation of Data: General Rules for Constructing Graphs, Types of Graph; Analysis of Findings, Limitations and Scope for Further Research

Unit 14- Qualities Of Researcher: **231-243**

Maintaining Objectivity, the Unbiased Approach, Curiosity To Know The Unknown, Desire To Understand The Cause And Effect Relationship Of Social Problems, Desire To Discover New And Test Old Scientific Procedures, Patience, Alert Mind, Courage And Consciousness.

Unit 15- Writing Research Report: **244-262**

Research Report: Meaning and Significance; Different Steps in writing the Report; Contents of a Research Report; Precautions in Writing Research Reports; Research Report Writing; Concept of Research Proposal and Research Abstract.

COURSE INTRODUCTION

Social Work Research and Statistics is one of the course of second semester of the MSW programme of this University. The course discusses in details about the basic idea of research and the ways of doing research. The course begins with a discussion on the meaning and concept of research, and then discusses in details the important aspects related to social science research. Apart from emphasis has been put on the important aspects of social work research.This course therefore attempts to discuss lucidly the preliminary concepts and methods of research. This course comprises of 15 units and has been divided into two blocks. The first block comprises seven units and the second block comprises eight units.

This course comprises of fifteen units. The first unit of the course of Social Research. This unit will help you to understand the meaning, definition,nature and significance of research.Apart from it, this unit will also discuss the meaning, characteristics and importance of Social Research. The second unit deliberates on the distinctive features, scope, need and steps of Social Work Research. The third unit will introduce you to the types of social work research. In this unit we will discuss intervention research and practice based research, action research, needs assessment studies, situational analysis, monitoring and evaluation.The fourth unit deals with the research design. This unit explains about the meaning, definition, need and importance of research design, features of good research design, components Of research design like title of the study, statement of the problem, review of previous studies, objectives of the study, formulation of hypotheses, methods of data collection, tools for data collection, sampling.The fifth unit discusses about the types of research design. This unit will help you to understand the conepts of exploratory research design, descriptive research design, experimental research design, diagnostic research design, survey and case study methods. Thit unit also discuss the difference between quantitative and qualitative research designs in details. The sixth unit will help you to acquire knowledge about the research methodology. In this unit we will discuss the various aspects associated with research methodology like identification of the problem, formulation of the problem, literature review, formulation of objectives and hypothesis, concepts and definition, methods of data collection etc. The seventh unit deals with the sampling technique. This unit will help you to understand the concept of Sampling and types of sampling methods like probability and non probability sampling .

The eight unit will discuss about the methods of collection of data. This unit will help you to acquire knowledge about the meaning, sources, tools of data collection like interviewing, questioner, observation and focused group discussion. Apart from it, you will also learn about the concept of interview schedule and interview guide. The ninth unit deliberates on processing of data. In this unit

you will learn about editing and coding of data, classification and tabulation of data, diagramatical representation of data and graphical representation of data. The tenth unit will help you to understand about the basic statistics for social research. This unit will help you to learn the meaning and functions of Statistics and importance of Statistics in Social Research. Apart from it, this unit also explains the frequency distribution. The eleventh unit of the course discusses about the application of Statistics. This unit will help you to understand the measures of central tendency / averages and measures of variability / dispersion. The twelfth unit deals with the measures of association. Thus, the topics like correlation coefficient, chi-square distribution, t-distribution, F- distribution and analysis of variance have been discussed in this unit. The thirteenth unit of this course describes the interpretation and presentation of statistical data. In this unit, we will discuss about the tabulation of data, diagrammatic representation of data, graphical representation of data, analysis of findings, limitations and scope for further research. The fourteenth unit deals with qualities of a researcher. In this unit we will discuss about the maintaining the objectivity, unbiased, cause and effect relationship. The final unit deliberates on the writing of research report. This unit will help you to acquire knowledge about the concept, significance, steps and contents of research report writing.

While going through a unit, you will notice some along-side boxes, which have been included to help you to know some of the difficult, unseen terms. Again, we have included some relevant concepts in "LET US KNOW" along with the text. And, at the end of each section, 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.

UNIT 1: INTRODUCTION TO SOCIAL WORK RESEARCH

UNIT STRUCTURE

1.1 Learning Objectives
1.2 Introduction
1.3 Meaning and Definition of Research
1.4 Nature and Significance of Research
1.5 Characteristics of Research
1.6 Meaning and Definition of Social Research
1.7 Importance and Characteristics of Social Research
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 -

- understand the meaning of research
- analyze the objectives of research
- identify the essential components of research
- know about the importance of social research.

1.2 INTRODUCTION

While enquiry or reason could be exercised over anything that we come into contact with, research is beyond the day to day exercise of enquiry. Terminologically, ‘research’ is composed of two parts-‘re’ and ‘search’. It means ‘revisiting’ or ‘re-examining’. The distinctiveness of research from day to day enquiry could be seen from its precise

objectives, the methodologies and the ethics of doing research. While most of the everyday enquiry is based on 'what' question, research in social sciences is primarily interested in 'why' questions. Research attempted to bridge the knowledge gap by relying on the existing knowledge resources. Thus it attempts to provide new knowledge claims. However, all these claims must be verified. None of the claims are true for all the times. Here, the significance of methodology comes into play. Methodology consists of a collection of norms and principles that helps the researcher to carry on research. The norms and principles must be explicit. Moreover, it must be clarified that there is no such thing as strict rule in research methodology, since these methodologies are always evolving. So, rules in research methodology are evolving, rather than fixed.

As already mentioned, research is a work that indicates going to something which has already been searched. However, during the process, the questions that the research is attempting to answer, make those questions the core of the work. So it's a process of moving from periphery of existing knowledge to the core. Here, 'core' indicates some major or central ideas. The assumption that lies behind carrying on research is that what has already been done is not quite enough. So through research one can try to make it right or better.

In this unit we shall try to understand the meaning of Research. We shall also learn about how research is conducted in social science.

1.3 MEANING AND DEFINITION OF RESEARCH

Research is a systematic and scientific inquiry to find new knowledge and question the validity of the existing knowledge. Research is a careful study that is done to find and report new knowledge about something. It is the activity of getting information about a subject.

Further, in order to conceptualise the concept of 'scientific research' it can be defined on a systematic, controlled, empirical and

critical investigation of hypothetical propositions about the presumed relations among natural phenomena.

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 L.V Redman and A.V. H.Mory, 'a systematised effort to gain new knowledge we call research'.

1.4 NATURE AND SIGNIFICANCE OF RESEARCH

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 2.6 of unit 2.
- **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.

Significance 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 employmentposts 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.

1.5 CHARACTERISTICS OF RESEARCH

Characteristics of Research can be outlined as follows:

- 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.

1.6 MEANING AND DEFINITION OF SOCIAL RESEARCH

According to **Pauline V. Young**, 'social research may be defined as a scientific undertaking which, by means of logical and systematised techniques aims to: i) discover new facts or verify and test old facts ii) analyse their sequences, interrelationships, and causal explaination… iii) develop new scientific tools, concepts and theories which would facilitate reliable and valid study of human behaviour'.

According to O.R Krishnaswami and M. Ranganathan, 'Social sciene research is a systematic method of exploring, analyzing and conceptualizing human life in order to extend, correct or verify knowledge of human behaviour and social life'.

1.7 IMPORTANCE AND CHARACTERISTICS OF SOCIAL RESEARCH

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.



Demography : It is the Statistical study of human populations.

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.

The importance of social research lies in fulfilling the following objectives:

- **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.

Characteristics of Social Research:

In the field of social sciences the designing of a research study is very complex . Every design has its own strength and weakness and at the same time there is no such thing as a single correct design. Nevertheless a good research design should posses the following characteristics.

- **Objectivity:** The objectivity of the procedure(either collection of data or scoring of the responses or both) may be judged by the degree of agreement between the final scores assigned to different individuals by more than one independent observer. The more subjective the observation, recording and evaluation of the response, the less the different observers agree. Therefore any research design should permit the use of measuring instruments which are fairly objective at which every observer or judge seeing a performance arrives precisely. This ensures the objectivity of the collected data to be used for the analysis and findings.
- **Reliability:** The test retest approach is the most effective measure of reliability as it refers to 'consistency' throught out a series of measurements. Suppose if a respondent gives a response to a question he/she is expected to give the same response to that question whenever he is asked in other form. But if the respondent keeps on changing his/her responses to the same type of questions then the interviewer will be facing a difficulty in considering which of the responses is genuine. The researcher should frame this question in such a way that the respondent cannot but give only one genuine response. Though there are some methods in determining the reliability of the responses given by a respondent like.
- **Validity:** As in case of reliability, there are a good number of procedures for establishing the validity of test, such as validating the present data against a concurrent criterion or a future criterion or a theory etc. However, any measuring instrument is said to be valid when it measures what it proposes to measure.
- **Generalisation:** The next important aspect of a good research design is to ensure that the measuring instruments used in a research investigation yield objective, reliable and valid data

for 'generalisation' of the findings. It will thus help an investigator in his attempt to generalize the findings, provided he/she has taken care in defining the population, selecting the sample and using the appropriate statistical analysis while planning his/her research design.

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.



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

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Q 4 : What is meant by Social Research?
(Answer in about 30 words.)

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1.8 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.

- 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.



1.9 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.



1.10 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: Social research refers to research conducted by social scientists from various disciplines dealing with human life, human behaviour, social groups and social institutions.



1.11 MODEL QUESTIONS

Answer the following questions in about 300-500 words.

Q 1: Discuss the characteristics and objectives of research.

Q 2: What is meant by the nature of research.

Q 3: Outline the importance of research.

Q 4: Analyse the importance and characteristics of social research

*** ****** ***

UNIT 2 : SOCIAL RESEARCH AND SOCIAL WORK RESEARCH

UNIT STRUCTURE

2.1 Learning Objectives
2.2 Introduction
2.3 Distinctive Features of Social Work Research
2.4 Scope and Need of Social Work Research
2.5 Steps in Social Work Research
2.6 Scientific Methods
2.7 Research Ethics
2.8 Let Us Sum Up
2.9 Further Reading
2.10 Answers to Check Your Progress
2.11 Model Questions

2.1 LEARNING OBJECTIVES

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

- discuss the features of social work research
- explain the use of research in social work
- analyse the scope and need of social work research
- classify the steps involved in social research work.

2.2 INTRODUCTION

Social work research is a means or approach which is similar to the already popular case, group and community work, generally regarded by people as actual social work. Since social work research is very complex in terms of both, the individual and the society, therefore social workers are often encouraged to develop increasing number of theories and hypothesis with reference to the root causes of the problems faced by their clients.In this unit we will discuss in details about the social work research.

2.3 DISTINCTIVE FEATURES OF SOCIAL WORK RESEARCH

Social work research facilitates the use and generalization of facts and explanations that have been systematically built. These help solve social problems and enhance human functioning. Two main purposes of social work research are as follows :

- To achieve a better fit between human needs and welfare goals,
- To increase the likelihood that these goals can be attained.

The function of social work research is to contribute to the development of a dependable body of knowledge, to serve the goals and means of social work. A social worker needs to know about research because it helps in documenting how interventions are helping clients, finding out the most pressing needs of the local community, leading focus groups on important topics, analysing responses, reading a complicated research report related to the population of clients, using the findings of a research report to improve practice, etc.

All these tasks have one thing in common; they involve the use of research skills. Also, they are among the most important tasks that professional social workers are expected to address. Social work research is the application of research methods to the production of knowledge that social workers need, to solve problems they confront in the practice of social work.

Social work is a practice profession. On the other hand, the major objective of social work research is to search for answers to questions raised, regarding interventions or practice effectiveness. In other words, social work research attempts to provide knowledge about interventions or treatments that really help or hinder the attainment of social work goals. In addition, it also helps in searching for answers to problems or difficulties faced by social work practitioners, in the practice of their profession. Ultimately, it helps building a knowledge base for social work theory and practice. It is

obvious that in social work research the study of a problem is from the point of view of professional social work. The designing of research problems, data collection and its interpretation will have to be attempted in a manner as would be useful to professional social work, which would add new knowledge to the social work theory and practice and improve the efficiency of professional social workers. Social work research is regarded as the systematic use of research concepts, methods, techniques and strategies to provide information related to the objectives of social work programmes and practices. Thus the unit of analysis of social work research could be individuals, groups, families or programme of the agency. That is, social work research typically focuses on assessment of practitioner's work with individuals, groups, families, communities or appraisal of agencies or programmes that involve continued efforts of practitioners with many clients.

2.4 SCOPE AND NEED OF SOCIAL WORK RESEARCH

Scope of Social Work Research :

Scope of social work research include situational analysis, policy research, participatory action research, impact assessment and others. In social work profession, research skills are important since it is both a science and an art. As social workers, there is a lot of dependence on data base that provides information about the client's situations, a group or community problem. Empirical data base is an important pre-requisite for social work intervention. When knowledge on various social situations cannot be found in prevailing literature or when there is a need to study the effectiveness of interventions, social workers conduct their own research. Social work research is an important stream of research as it not only strives to penetrate into deep rooted social issues, but also strives to find solving techniques for such issues. Social workers continuously access data from multiple sources, file the progress of clients in individual or group interactions and write reports. These are documented and recorded.

Social work research draws heavily from such primary data as well as secondary data.Research design, data collection and analytic strategies in social work research vary as a function of unit of analysis and programme of agencies of a social work practitioner. Social work research is the use of scientific methods in the search of knowledge, including knowledge of alternate practice and intervention techniques, which would be of direct use to the social work profession and thus, enhance the practice of social work methods. Social work research focuses on or confines itself to select aspects of behaviour and alternate models of behaviour modification. Social work research helps to find ways and means to enhance social functioning at the individual, group, community and societal levels. It lays special emphasis on evaluation. This is one of the reasons that social work research is also understood as evaluative research. Within social work research, varieties of evaluative researches are undertaken. Some of the researches are on impacts or effects, efficacy and effectiveness. Evaluation of agencies and their projects and programmes are some of the specialized areas of social work research.

The Need Social Work Research:

- To improve and enlarge the technique of diagnosis and treatment as they are used in social work practice
- To develop the efficiency and define the functions of social work, as practised
- To appraise and measure the community's need for social work service
- To add to the general knowledge of the etiology of social pathology that might later require social work treatment.

The functions of social work research may be conceived to include the production of knowledge of different sorts. The functions will be fully discharged only as knowledge is increasingly systematized. This implies the development of useful concepts and the explication of their

relationship, i.e., theory building.

Social work research may be conducted to know the efficacy of different methods of social work, as to search for alternative interventions and treatments. It is also helpful in identification of needs and resources, evaluation of programmes and services of agencies, etc.

The Uses of Social Work Research:

- To identify and measure the need for service
- To measure the services offered as they relate to needs
- To evaluate the result of social work intervention
- To judge the efficacy of specific techniques of offering services
- To study the methodology of social work.

2.5 STEPS IN SOCIAL WORK RESEARCH

The main steps of social work research are discussed below:

- **Selection of the subject:** On the basis of experience and available facts, a social worker has to formulate social problems. In the case of research, he/she either deals with specific aspects or includes total aspects of the problem. The problem selected has to be relevant to the study that he/she makes and the branch of the social work, which he/she is going to study.
- **Formulation of hypothesis:** For social work, after selecting the problem the social worker has to form social ideas related to it. This process is known as 'hypothesis'. According to George Lundberg, 'hypothesis is a tentative justification, the validity of which remains to be tested'. In its most elementary stage, the hypothesis may be in high, imaginative ideas, which become the basis for action or investigation.
- **Construction of the research design:** For social work research, it is necessary to prepare a promulgated research design. The research design enables the social worker to carry on his work systematically. There are certain drawbacks in the

preparation of the research design, but once the design has been prepared, it is easy to test the hypothesis, analyse data and take other steps.

- **Survey of the literature research design:** Mere selection of problem is not sufficient. For proper understanding of the problem the social worker has to survey the literature related to that problem.
- **Investigation and study of material related to the problem:** No study is complete in itself. There are various matters and topics related to the problem.
- **Collection of data:** After preparing the research design, the process of date collection begins. For this, the first step is collection of facts pertaining to the problem.
- **Tabulation of collected data:** Mere collection of data is not sufficient for research. By collection we get everything at one place, but for proper study, it is necessary that the data should be systematically tabulated and classified. This step helps the social worker to proceed in a correct direction.
- **Analysis and interpretation of data:** Once data has been tabulated and classified, the social worker proceeds to analyse and interpret it. Based on the tabulation, a social worker is able to know that which data belongs to which field and what are its characteristics. These things can be found out through analysis and interpretation.
- **Verification of the problem and hypothesis:** After analysis and interpretation, the social worker has to verify the problem and the hypothesis. Without verification, it is not possible to arrive at any correct result.
- **Generalization:** If one hypothesis has been proved to be correct as a result of verification, certain general principles can be laid down. The basis of these general principles is the outcome of the analysis and verification of data.



Date : Are individual facts, statistics or informations; often numeric.



CHECK YOUR PROGRESS

Q 1: What are the two main purposes of social research? (Answer in about 20 words)

.....

.....

Q 2: How does social work help social workers?
(Answer in about 20 words)

.....

.....



ACTIVITY

1. Which is the national academy of India in the field of social sciences that has its headquarters in Allahabad?
2. Name some famous personalities who have contributed to social work research in India.

2.6 SCIENTIFIC METHOD

In Social Science, conventionally either qualitative or quantitative methods were employed to study human society. However, in recent times, the mixed method, i.e. combination of both qualitative and quantitative methods is preferred. It is thought of as giving more accurate and reliable results than simply relying on either of the one. Although qualitative and quantitative methods are thought of as different, these are different in style and specific technique only. The goal of both is to make inference about social facts. Let us discuss these three methods.

2.6.1 Quantitative Research

Quantitative research uses numbers and statistical methods. It tends to be based on numerical aspects of the studied phenomenon. It is mainly concerned with the 'what' questions

of human science. It uses measurements. This technique is easily replicable by other researchers. Statistics is the main tool of this research. Different surveys come under its purview. Hammersley nicely provides a very useful definition of quantitative method. According to him "The term 'quantitative method' refers in large part of the adoption of the natural science experiment on the method for scientific research, its key feature being quantitative measurement of the phenomena studied and systematic control of the theoretical variables influencing those phenomena".

Thus, the logic of this research is to:

- collect data using standardised approaches on a range of variable
- search for pattern of causal relationships between these variables and
- test given theory by confirming or denying precise hypotheses.

(We will discuss in detail about quantitative research in unit 5 of this course)

2.6.2 Qualitative Research

It covers a wide range of approaches. Qualitative research is carried out in 'real life' setting. The objective is to take detailed descriptions of individual's behaviour and thoughts to illuminate their social meanings. These are not based on numerical measurements. Qualitative methods include in-depth interviews, ethnographic study, group analysis etc. It is much more descriptive and analytical in nature. It primarily deals with 'why' questions of social sciences. Usually, qualitative research is preferred on area studies. This is because in area studies the focus is on the history and culture of a particular area, and the particular area is discussed in full detail. Significantly the researcher in the qualitative research is likely

to adopt an approach in which there is no precise initial specification of research issues and concepts. Here qualitative methods help. At the same time, for geographical features, explaining interrelation of various phenomena, such as caste and income level, qualitative research would help. Hence, the mixed method would be followed. We will discuss in detail about qualitative research in unit 5 of this course.

2.6.3 Mixed Method

As has been said, mixed method is nowadays preferred by the researchers. It can give the study a more detailed picture of both its quantitative and qualitative aspects. For instance, in studying the demography of a particular place, for population growth rate, gender ratio, birth and death rate etc quantitative method, using



CHECK YOUR PROGRESS

Q3: Fill in the blanks:

a) Quantitative research uses __ methods.

.....

.....

b) Qualitative research primarily deals with __ questions of social sciences.

.....

.....

2.7 RESEARCH ETHICS

Research ethics is a broad set of norms and principles that the researchers are expected to follow rather than some strict rules. Some of the research ethics are mentioned below:

- **Contribution to the existing literature:** The researcher should be well aware that they are contributing towards finding new facts and truth claims. It should not be repetitive of what has already been said or studied.
- **Applicability:** The researcher should attempt to provide insights which are applicable to ameliorate human conditions. These days, applied research is making popularity among the researchers because of the emphasis on applicability of the research.
- **Principle of informed consent:** Particularly in qualitative research, the participants must be made aware of the work going on. Their participation should be with their voluntary consent and that too an informed consent. Informed consent means that the participants are well aware of the fact that they are being studied under some research work. Many a times, the participants are unaware of the fact that it is simply research and not some government survey that is being carried on. The researcher should make an attempt to make them aware about this aspect.
- **Principle of damage avoidance:** After the research work is being published, many a time the subject population is subjected to harassment or prejudice. Therefore, the researcher should try to maintain the anonymity of the participants so that no harms would occur to them after the work is published.



2.8 LET US SUM UP

- Social work research is highly significant for social scientists and social workers who study social relationships and seek answers to a wide range of social questions.
- The knowledge of specific issues, at times only for gaining a

better understanding is intellectually satisfying.

- Social work research is also practically useful for the social work to be able to do something better, in a more efficient manner.
- It helps to contribute to practical concerns.
- Social work research is the use of scientific methods in the search of knowledge, including knowledge of alternate practice and intervention techniques, which would be of direct use to the social work profession and thus, enhance the practice of social work methods.
- Social work research may be conducted to know the efficacy of different methods of social work, as to search for alternative interventions and treatments.



2.9 FURTHER READING

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2.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Two main purposes of social work research are as follows:

(i) To achieve a better fit between human needs and welfare goals.

(ii) To increase the likelihood that these goals can be attained.

Ans to Q No 2: Social work research helps social workers in dealing with social problems or problems related to their clients (individual, group or community).

Ans to Q No 3: a) statistical; b) why.

2.11 MODEL QUESTIONS

Q 1: List the steps involved in the process of social work research.

Q 2: Write a note on the uses of research in social work.

Q 3: Discuss the distinctive features of social work research.

Q 4: Explain the scope and need of social work research.

Q 5: Explain the concept of scientific methods.

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UNIT 3 : TYPES OF SOCIAL WORK RESEARCH

UNIT STRUCTURE

3.1 Learning Objectives
3.2 Introduction
3.3 Intervention Research and Practice-Based Research
3.3.1. Action Research: Nature, Objectives, Principles and Areas
3.4 Need Assessment Studies
3.4.1 Methods of Gathering Information for Need Analysis
3.5 Situational Analysis
3.5.1 Identification of the Problem
3.5.2 Information Requirements for Situational Analysis
3.6 Monitoring and Evaluation
3.6.1 Monitoring
3.6.2 Evaluation
3.7 Let Us Sum Up
3.8 Further Reading
3.9 Answers To Check Your Progress
3.10 Model Questions

3.1 LEARNING OBJECTIVES

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

- define intervention research and practice-based research
- analyse need assessment studies
- discuss the process of situational analysis
- estimate the value of monitoring and evaluation
- classify the steps involved in social research work.

3.2 INTRODUCTION

This unit discusses different research approaches like intervention research, practice-based research or action research.

Need assessment is carried out to find people or communities, who can be helped through social work research. Like need assessment, situation analysis too, generally comprises an information database that is required to plan programmes and initiatives, Monitoring and evaluation are very important components of a good social work research, at its every level. Though the concepts of monitoring and evaluation function hand in hand like one unit, practically, they are two different sets of departmental activities. In spite of being related, they are different. In this unit, we will basically study the different types of social work research.

3.3 INTERVENTION RESEARCH AND PRACTICE BASED RESEARCH

Action research is one of the recent developments in the field of research. Understanding the process of action research is fundamentally valuable for community workers. Unlike other forms of social researches, action research deliberately sets out to create change. **Action research** is a series of cycles that begin and end with research and incorporate planned action to bring change. It has its roots in community development programmes. Modern action research brings together social research methodology and community organization/development programmes. Mc Taggart argues that this convergence has occurred because it has been demonstrated over and over again that research findings from one context do not necessarily work when applied to new contexts. Instead, people must conduct substantive researches themselves on the practices that affect their lives.

Thus, involvement of people, for whom the action research is conducted, is the key to action research. For this reason, perhaps, some authors prefer to call action research as ‘participatory action research’. This type of action research always contains the following:

(i) The researcher,

(ii) Involvement of individuals who are fundamental to the issue being researched, and

(iii) Focus on action to bring social change.

Action research intends to solve practical problems through research and planned actions. In this research, emphasis is on solving problems through adoption of alternative practices, suggested by a research study. The two distinct purposes of action research are: (i) to find causes of the problem, and (ii) to suggest actions to resolve the problem.

Action research is a functional form of research that considers knowledge as a source of power. It eradicates the gap between research and social action. Action researches are of many forms. However, the majority of these have similar features like: regular or widespread knowledge, focus towards achievement of power, aimed at making people more aware and conscious, and Result in political activity.

3.3.1 Action Research: Nature, Objectives, Principles and Areas

Nature

The ultimate object of action research is to solve the practical problems with the help of research techniques. Action research, like social research, seeks to identify the exact nature and magnitude of a problem and analyses the causes in all their variety and intensity. It, however, assumes a distinct character of its own in a significant measure, when it comes to the action to solve a social problem. Action research emerges from situational needs and a solution is designed with respect to the situation. Unlike other social researches, action research is increasingly becoming a team work, where researchers collaborate with practitioners and subjects/ beneficiaries participate in the research process. The researcher takes the initiative and leads the team.

Thus, action research is a team work wherein other partners: beneficiaries and stake-holders have to put in conscious effort in the research process. It is a self-evaluative process where the research team evaluates the outcome of the exercise. It is initiated by the practising individual or group. Hence, it becomes necessary for the researchers to understand the problem as it exists and develop the action research design. It is concerned with social data, which is more complex than physical data.

The basis of all social interactions, whether it is a large complex group or a small cohesive group, is expectations of behaviour, which in turn is a result of many factors. The complex nature of social data reduces the power of exact solution of the problem. Most of the subject matter of action research is qualitative and does not admit quantitative measurement. In action research, it is difficult to segregate the cause and effect. It is because many times the cause is also the effect. This makes it very clear that the social data typically poses certain problems when it is analysed for taking action to solve social problems.

Action research comprises the following characteristics:

- To work together with people to change ourselves and the structure around us
- To empower people to become partners in the research process
- To address inequalities
- To solve social problems
- To encourage the democratic process

Objectives

Action research has the following objectives:

- To search for answers to questions raised while trying to resolve social problems.

- It is an attempt to provide knowledge about interventions or treatments that can really help in resolving social problems
- It also helps in searching for answer to problem or difficulties faced by practitioners in the practice of their profession.

Principles

According to Mc Taggart and Wadsworth, the principles of action research are as follows:

- Involves people in the research process as co-researchers in all decisions related to content and method
- Gets started quickly
- Starts on a small scale and gains momentum
- Is explicit about collecting data
- Seeks contradictions
- Is explicit about power relation
- Engages with politics
- Ensures validity of the research by moving between reflection and action, several times in your inquiry cycles.

Areas

In a very broad sense, action research concerns itself with the problems faced by social activists/practitioners. It encompasses those questions, which are encountered in working with people or in planning or administering social services, which are capable of being solved through research and which are appropriate for social investigation. Action research utilizes the same scientific methods and techniques as social research. This is the reason that when some research designs/procedures of social research are not suitable to action research, it becomes necessary to develop tools that would be appropriate for action research.



CHECK YOUR PROGRESS-2

Q 1: What does participatory action research contain? (Answer in about 20 words)

.....

.....

Q 2: Give any two characteristics of action research. (Answer in about 20 words)

.....

.....

3.4 NEED ASSESSMENT STUDIES

Need assessment is a process of identifying health and social service requirements in a geographic and social arena, whereas need analysis is a process of prioritizing identified needs. Bradshaw (1977) describes four types of needs:

(i) Normative need: Standard or expect need defined by professionals or others in authority.

(ii) Felt need: This is the wish list of the target group, which equates with wants

(iii) Expressed need: The need of the target population expressed overtly in some form, e.g., waiting lists for service.

(iv) Comparative need: The need of the community or group, determined through comparison with other communities.

Need assessment is important for adequate planning because:

- It assesses the needs of the community and by providing a snapshot of the needs, it empower the community to seek action.
- It allow us to advocate for change and provide information about gaps in service.
- It determines who uses existing services and what barriers to service exist.

- It allows an informed allocation of resources, policy formulation and planning of services.
- It assists in evaluating whether the service is responding effectively to community needs.

3.4.1 Methods of Gathering Information for Need Analysis

Three methods are used to gather information for need analysis. These are: Social Indicator Analysis, Social Area Survey and Community Group Approach (Siegel, Attkisson and Carson, 1987).

- **Social indicator analysis:** Social indicators are used to give an overall picture of the population, its characteristics, the size of the potential at risk categories and consequently the potential service users. The most accessible form of social indicator is national census records. Other type of accessible records include bureau of statistics, government statistics, etc. The data from these sources can be used to determine risk factors within a group and also provide preliminary indication of the potential use of services at the local level. Following are the highlights of social indicator analysis:
  (a) Population characteristics
  (b) Target group size
  (c) Characteristics of target group
  (d) Comparison between regions and communities
  (e) Historical trends
  (f) Size of potential service users
- **Social area survey :** Social area is used to determine the felt and expressed levels of need. This is useful for estimating a range of possible solution or services. Survey includes an analysis of the demand for services, an examination of the resources of existing services and survey of clients. Social area surveys are used for the following:

(a) Demand for services : In assessing needs of a particular community or target group, it is important to examine the range of existing services to ascertain their presence, their use, their popularity, the level of interagency cooperation and gaps in service delivery. This information may be collected by interview or survey with agency personnel.

(b) Analysis of service resource : This comprises information gathered through interviews or through surveys from agencies. This includes staffing level, range of services provided, client profile data, numbers of referrals, accessibility and availability of services, etc.

(c) Community surveys : This will elicit information about felt needs and about ongoing social problems. These surveys may include either random community surveys or target-specific surveys, which are designed to determine the level of need.

- **Community group approach :** This approach is useful when a rapid appraisal of a community's need is necessary and/or resources to conduct a need analysis are limited. Community group approach can give a clearer idea of a community's priority or needs. This approach can be used on the following platforms:

(a) Community forums: Community forums are open meetings of community members called to discuss a particular issue. They provide an opportunity to gather information about needs and desirable services. They are quick and inexpensive ways of gathering data. Community forums allow a range of views, serve as catalyst to action and make it possible to identify those who are willing to help.

(b) Focus groups: Focus groups are small homogenous groups representative of the target population and of key informants, brought together to discuss pertinent issues. Various focus group discussions may be held with community members,

service providers, target group members and other group of stakeholder.

Impact assessment

Impact assessment is a process of analysing, monitoring and managing the intended and unintended consequences, both positive and negative, of planned interventions (policies, programmes, plans, projects) and any change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

Policy research

Policy research is a process of determining policies that can most achieve a given set of goals, in light of the relations between policies and goals. It has non-university groups as its main intended audience (although the results may, in practice, also interest academic audiences). For the most part, such research attempts to apply social scientific findings to the solution of problems identified by people at large.

Baseline study and intervention

A baseline study simply defines the ‘pre-operation exposure’ condition for the set of indicators that will be used to assess achievement of the outcomes and impact expressed in a programme's logical framework. When compared with the condition of the same indicators at some point during implementation (mid-term evaluation) and post-operation implementation (final evaluation), the baseline study forms the basis for a ‘before and after’ assessment or a ‘change over time’ assessment. Without baseline data, to establish pre-operation conditions for outcome and impact indicators, it is difficult to establish whether change at the outcome level has even occurred, Baseline studies in social sciences, in a nutshell, are studies made for comparison purposes.

3.5 SITUATIONAL ANALYSIS

Situational analysis is cyclic in nature. It is initiated by creation of plans; i.e., the problem is identified and a plan is put in place to resolve it. This is followed by implementation and monitoring of the plan. After being monitored and evaluated, it undergoes review and adjustments. The review decides the degree of adjustment that the implementation needs to undergo. The iteration is incessant, till successful completion (or abandoning) of the plan.

Situational analysis is the initial step to devise a plan

The steps in formulating a plan are as follows:

- Identification and prioritication of problematie situations that affect the target population or its definite sectors
- Specification of the preferred outcome to be realiced by focusing on the priority problem indicated in the situational analysis
- To give a wide direction on ways to attain the declared goals, objectives and targets.
- To interpret policies and strategies into precise activities that can be implemented
- Identification of programmes and projects that can be financed and put into practice in terms of fixed schedules or time frames.

Orbeta (1994) built a combined planning framework for social sectors by merging it with close determinants of the outcome of the social sector and that of the social sector service prochetion delivery and financing system. The famework provides a foundation to entity the problem, provides likely results and prioritizes the procedures needed to solve the problem. A simple version of the structure used here comprises:

- Situational analysis
- Formulation of goals objectives and targets
- Development of policies and strategies

- Identification of programmes and projects
- Investment programming or budgeting.

3.5.1 Identification of the Problem

The process of identifying a problem is abstract in nature. This action classifies the concerns and problems that need to be attended to. It addresses a number of issues like:

- The type of problem
- The reason for the problem
- Potable cases of the problem
- Seriousness of the problem
- The people/groups affected by the problem
- Location of those affected by the problem
- Characteristics of the problem
- Steps taken to resolve the problem.

Quantitative as well as qualitative information is needed to resolve these.

3.5.2 Information Requirements for Situational Analysis

The category of the target populace determines the background: (i.e., physical financial, social, cultural and political), within which the population exists. Concurrently comprises a profile of the population, on the basis of the areas of concern. This is achieved by making use of pointers that indicate quantitative social and economic outcome together with a detailed analysis of the cultural and legal environment.

Table 3.1 shows the sample of data to be used in the profile.

Table 3.1 Profiling Data

Perspective	*Category of information*
Socio-demographic	Content and dispersal of population Households and family formation Health and health services Learning and exhational services Housing conditions Peace and order status
Economic activity	National accounts Labor force participation Wages Household income and expenditure patterns Poverty
Socio-cultural and political	Political structure Political participation Relevant laws, stantes, policies Predominant social structure Gender roles in the household Time use Decision-making patterns in the household

3.6 MONITORING AND EVALUATION

Evaluation and monitoring work concurrently. Monitoring gives the basic data that answers the majority of questions. Evaluation is converting that data to provide logical value.

3.6.1 Monitoring

Monitoring is the systematic collection and analysis of information as a project progresses. It is an effort to make

a project or an organization more efficient and effective. Monitoring is an outcome of pre-set goals and activities designed in the planning phase of work. It helps in ensuring that the work flows per the schedule and keeps the management informed about the corresponding problems. Monitoring becomes a precious tool for the management if it is used proficiently and comes across as an effective base for evaluation. It enables one to determine whether the available resources are sufficient and are being used well, whether the capacity one has is sufficient and appropriate and whether one is doing what one plans to do.

In monitoring, data is collected regularly and progress is measured with respect to programme objectives. There are three main domains of information required in a monitoring system:

(i) Inputs: These are resources that conduct and carry out the project or the programme. These may include employees, funding, resources and time.

(ii) Process: This is a group of activities in programme resources.

(iii) Outputs: This is the instant outcome that a programme gives by executing activities (e.g., quantity of merchandise distributed, number of staff undergoing training, people reached, or number of people served).

Monitoring takes care of the following issues:

- The degree of realization of planned activities
- The progress made to achieve the set goals
- The kind perspective, duration and time of the services provided and the people who avail this service
- The level of satisfaction that results from these services
- The quality of services provided
- The cost per unit service.

Monitoring also measures the extent to which a programme or project:

- Is undertaken consistently with every design or implementation plan
- Is aimed at the precise target group.

3.6.2 Evaluation

Programme evaluation refers to the purpose of research, rather than to any specific research methods. Its purpose is to gauge and improve the conceptualisation, design, planning, administration, implementation, effectiveness efficiency and utility of social interventions and human service programmes (Rossi and Freeman, 1993).

The three broad objectives of programme evaluation are:

- To assess the ultimate success of programmes
- To assess problems in implementation of programmes
- To obtain information needed in planning and development of programmes.

Programme evaluation can be further classified as summative and formative. Summative evaluations are concerned with the ultimate success of a programme and decisions about its selection from alternative options and its continuity. Formative evaluations are focused on obtaining information that is helpful in planning the programme and in improving its implementation and performance.

Evaluation of the outcome and efficiency of programmes may assess whether they have any unintended harmful effects, whether success is being achieved at a reasonable cost and how the ratio of its benefits to its cost compares with the benefits and costs of other programs with similar objectives. This approach to evaluation is sometimes called the goal attainment model of evaluation. It refers to formal goals and mission of the programme.

Evaluation is comparison of the impact of the actual project with agreed Strategic plans. It considers what one sets out to do, what one has accomplished and how it has been accomplished. It can be formative (taking place during the life of a project or organization, with the intention of improving the strategy or way of functioning of the project or organization). It can also be summative (drawing knowledge from a completed project or an organization that is no longer functioning).

Evaluation means making use of social research methods to methodically explore a programme with efficiency. The uses of evaluation are as follows:

(i) Validating alterations within the core group (e.g. transformations in risk behaviour).

(ii) Assess the extent to which the goals have been achieved. It is the process to check the efficiency and usefulness of a programme or a project.

(iii) Tracking the result and effects of programmes or projects on a broad scale, instead of the programme or project level:

(a) Outcomes: Short-term or intermediary outcome achieved by executing the activities of programmes.

(b) Impact: Long-term effects (e.g., changes in health status). Specialization in any academic line with broad district, regional, or national coverage.

The questions that are addressed by evaluation are as follows:

1. What kind of results are detected?
2. What is the meaning of the results?
3. What are the effects of the programme?

The purpose of evaluation is to learn about the effect of the result of one or more projects or programmes. It is a challenge to carry out evaluations due to the following reasons:

- The process involves laborious study and design that comprises groups that control or compare.
- It tries to find how one project or programme is different from others, within the same target group or geography.
- The workforce needed for coordinating and guiding the design and implementation of evaluation is usually scarce, especially if it is an external agency. There is dearth of skills required in evaluation design, data collection techniques (in terms of both, quantity and quality), study, review and diffusion.
- Lack of monetary resources (NGOs has a large number of priorities and hence, it may be difficult for them to come up with funds needed for evaluation)

Results and evaluation of the effect is closely linked with process monitoring. The evaluator can make use of process information to learn about the reasons and ways related to interventions achieving their effects. Using the same, he can also know about the aspects that affect the outcome. If the results are analysed without paying attention to the implementation of the programme, they may prove to be faulty, depending on the efficiency of the intervention.



NGOs : Non govenmental organizations (NGOs) are voluntary group of individuals or organizations, usually not affilated with any government. Such organizations are formed to provide services or to advocate public policies



CHECK YOUR PROGRESS-3

Q 3: Define the term 'monitoring'.
(Answer in about 20 words)

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Q 4: Name the three main domains of information required in a monitoring system. (Answer in about 20 words)

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Q 5: What are the three broad objectives of programme evaluation? (Answer in about 40 words)

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Q 6: On what basis does a social worker formulate social problems? (Answer in about 10 words)

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3.7 LET US SUM UP

- Social work research helps in the development of a set of principles that make it possible to understand and predict every human interaction.
- Additionally, due to its social orientation, it is practically being used more and more to guide the solution of immediate problems of human relations.
- Social work research is especially significant in providing solutions to many operational and planning problems of society and industry.

- Action research descriptive, exploratory research and motivational research, are regarded as critical and their results are helpful in many ways.
- In quantitative research, mathematical, logical and analytical methods are used to understand and solve problems.



3.8 FURTHER READING

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3.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Participatory action research action research always contains the following:

(i) the researcher.

(ii) involvement of individuals who are fundamental to the issue being researched, and

(iii) focus on action to bring social change.

Ans to Q No 2: Action research comprises the following two characteristics:

(i) to work together with people to change ourselves and the structure around us, and

(ii) to empower people to become partners in the research process.

Ans to Q No 3: 'Monitoring' is the systematic collection and analysis of information as a project progresses.

Ans to Q No 4: The three main domains of information required in a monitoring system are:

(i) inputs, (ii) process and (iii) outputs.

Ans to Q No 5: The three broad objectives of programme evaluation are:

(i) To assess the ultimate success of programmes.

(ii) To assess problems in implementation of programmes.

(iii) To obtain information needed in planning and development of programmes.

Ans to Q No 6: A social worker formulates social problems on the basis of experience and available facts.



3.10 MODEL QUESTIONS

Short-Answer Questions

Q 1: What common characteristics does every type of action research have?

Q 2: What are the principles of action research, according to McTaggart and Wadsworth?

Q 3: What are the four types of needs as described by Bradshaw?

Q 4: What are the steps in formulating a plan to perform a situational analysis?

Long-Answer Questions

Q 1: What are the nature, objectives and principles of action research?

Q 2: Explain the various methods of gathering information for need analysis.

Q 3: Discuss the steps involved and the information requirements for situational analysis.

Q 4: Discuss the various tools for monitoring and evaluation.

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UNIT4: RESEARCH DESIGN

UNIT STRUCTURE

4.1 Learning objectives
4.2 Introduction
4.3 Meaning of Research Design
4.4 Components of Research Design
4.5 Need and Importance of Research Design
4.6 Features of a Good Research Design
4.7 Let Us Sum Up
4.8 Further Reading
4.9 Answers to check your progress
4.10 Model Questions

4.1 LEARNING OBJECTIVES

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

- understand the meaning of research design
- discuss the need and importance of research design
- identify the features of a good research design.

4.2 INTRODUCTION

Research, as we all know, is the search for knowledge. It is the process through which one acquires knowledge about any natural or social phenomena. Social workers too are continuously engaged in research relating to social phenomena. But for any kind of research to proceed in the right direction, there has to be a particular design or plan. Though the term design conveys several meanings, but in the context of research, it points to a plan, blueprint or outline of the research which specifies the objectives, methods of data collection and analysis, probable outcomes so on and so forth. The research design articulates what data is required, what methods are going to

be used to collect and analyse this data, and how all of this is going to answer the research questions of a particular research. It is therefore the statement of essential and fundamental elements of a study that provides basic guidelines of conducting the research. In the previous units we have learned about Qualitative and Quantitative Research. To conduct any of this type of research we need to have a research design. In this unit we will try to understand the meaning of research design, its need and importance in research and features of a good research design.

4.3 MEANING OF RESEARCH DESIGN

Research Design is a very vital step in the research process. In simple words, the research design is an elaborated plan or model which throws light into how the entire research would be conducted. The Oxford Dictionary of Sociology defines 'Research Design as a strategic plan for a research programme, setting out the broad outline and key features of the work to be undertaken, including the methods of data collection and analysis to be employed and showing how the research strategy addresses the specific aims and objectives of the study, whether the research issues are theoretical or policy oriented'. Research design therefore stands for advance planning of the methods to be adopted for collecting the relevant data and techniques to be used in their analysis, keeping in view the objective of the research. Research design, infact, has a great bearing on the reliability of the results arrived at and as such constitutes the firm foundation of the entire edifice of the research work . Just as we need a ready architectural design or blueprint before the construction of a building so that we can have it as per our aspiration, similarly in case of research too, we need a research design to guide and direct us to achieve our results. The Research design will give a detail outline regarding the various aspects of the research from its objectives to the ways or methods in which data shall be collected and analysed. It would not only state the objectives of any particular

research but also describe the way in which the research shall process to realize those objectives. It is therefore often acknowledged as the master plan for executing a research project Thus before the actual process of research or data collection begins, one must have the research design in hand to guide him/her in collecting and analysing data. In social work research as well, framing a research design is the first and a very vital step. The research design is mostly about the following——

- What is the study about?
- Why is the study being made?
- Where will the study be carried out?
- What type of data is required?
- Where can the required data be found?
- 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 analyzed?
- In what style will the report be prepared?

4.4 COMPONENTS OF RESEARCH DESIGN

As discussed earlier, Research Design outlines how the research will be carried out. Therefore it addresses itself to certain key issues as mentioned below.

- Title of the study, '…should be brief, precise and project the scope in generalized terms.'
- Statement of the Problem, '…should be unambiguous, precise and the usage should be clear, simple and concise.'

- Review of Previous studies- '…should be a brief survey of a relevant literature in the subject concerned and presented subjectwise. Studies should be reviewed critically and from there further research is called for'
- Definition of Concept or Theoritical Principles involved, '…should be defined in general times and be linked with the study.'
- Coverage and Scope of the Study, '…should consider geographical, temporal and functional dimension.'
- Objectives of the study, '…should explain the main purpose precisely and in the form of question or an explanation to a particular issue.'
- Formulation of Hypothesis, '…should be empirical, conceptually clear, specific, close to things observable and related to the body of theory.'
- Methods of Investigation, '…depends upon the nature of study but researcher should define the methodology and techniques adopted.'
- Sampling design-'…definition of the universe or population, size of the sample and representatives of the sample should be defined.'
- Constructing of Schedule or Questionnaire-'…questions should be in a order or a form. Open ended questions are designed to permit a free response. The questions to be asked should have a direct bearing on the problem, avoiding the personal questions and multiple meaning.'
- Data Collection, '…depends upon the subject matter the unit of enquiry and the scope of the study.'
- Analysis of Data, '…to fulfil the objective or hypothesis the researcher should analyse the data and subject to the

appropriate statistical analysis beside tabulation. Tabulation of results in a meaningful way is by itself a technique and an art. The data given in the tables must be in self-explanatory form.

- Interpretation of Results-'…researcher should draw inference based on usual test for significance and relate with previous findings, for a wider field of generalization.'
- Reporting and Findings: Reporting should be clear, specific, simple and related relating to the objective of the study. Researcher must report what has been discovered to ensure proper directions to other researchers in carrying out of similar researches.'

4.5 NEED AND IMPORTANCE OF RESEARCH DESIGN

From the above discussion we have already learned that research design is the guide to research. It is, as we know by now, a broad plan of action which encompasses almost everything related to the way in which a particular research is to be carried out. Since the research is carried out as per the research design laid down in advance, hence it is very crucial in research. Let us now discuss in details the need for a research design:

We all know that if we travel to places which we have not visited earlier or which we are not familiar with, we will need a map or a tour guide. Without a map or a tour guide, there is every possibility that we might get lost. The similar is the case with research design. The significance of research design lies in the fact that that it facilitates the conduct of the research by guiding the researcher on how he/she should proceed, how the researcher should collect data, which data are relevant, what should he/she do with the data so on and so forth. It gives direction to the research and helps the researcher to conduct an efficient research and gather as much data as required without wastage of time and money. If a researcher conducts research without

formulating a research design in advance, there is every possibility that he/she may go hay way. In this case, because the researcher won't have a clear plan regarding the way to proceed systematically, he/she might get confused regarding data collection and also might end up wasting time in collecting data not essential for that particular research. Thus he/she might have to spend a lot of time and money in the process which might just turn out to be a futile exercise. So it is very important to formulate a research design prior to conducting the research. As we all know that a building cannot be constructed without a blueprint or an architectural design, similarly there is also a need for a research design prior to the conducting of the research if it is to be an efficient research. Hence in absence of the research design there is every possibility that the researcher will face a lot of confusions and uncertainties and finally land up in a total mess.

Further, in absence of a research design, many researches may fail to serve the purpose for which they have been taken up. Research conducted without a research design may even lead to misleading conclusions. The researcher should therefore very carefully prepare the research design in order to avoid futility of the research. He/she should prepare the research design in such a way that the process of conducting research and collecting data becomes easier and at the same time scientific. Thoughtful designing of the research design would enable the researcher to avoid ambiguity.

The research design helps the researcher to organise his ideas in a form whereby it will be possible for him to look for flaws and inadequacies. Since in the research design the researcher would systematically organise his/her ideas and outline the entire strategy regarding how he/she is going to conduct the research, this would help him/her to identify and also rectify any errors that he/she might commit while conducting the research.. Thus the research design would not only facilitate the researcher to stick to the right path/ direction of conducting research but also to correct the accidental mistakes that he/she might commit and which might mess up the

entire research project. It is therefore utmost necessary to prepare an efficient and appropriate design before starting the process of data collection.

Another very important aspect of the research design is that it also helps others to get an idea about what that particular research is all about and how is it conducted. Going through the research design, one can give his/her reviews, comments and suggestions about the research and this is very beneficial for the researcher. The researcher can get comments and suggestions from his/her teachers, experts and also peers and incorporate them to enrich the study. He/she can also get to know about flaws and mistakes, if any, in his/her research and can correct it. In the absence the research design, it will be difficult for the critic to provide a comprehensive review of the proposed study.

From the above discussion it is understood that research design is utmost necessary for conducting the research in an efficient, scientific and methodical way. Its importance is summarised in the following points:

- Research Design is like a map. It provides direction to the study. It helps the researcher to proceed in the right direction and prevents the research from being merely a directionless and aimless empirical wandering.
- Formulation of research design helps in minimising uncertainty, ambiguity, confusion and practical haphazard related to any research problem.
- It helps the researcher to collect and analyse data scientifically and systematically.
- It enables the researcher in identify and segregate relevant data's and facts from the irrelevant ones.
- In certain cases, the design acts as a tool to control the level of accuracy desired.

- It reduces inaccuracy increases the reliability of the research
- It prevents wastage of time and money.
- It provides a clear overview about the research to others
- Gets rid of bias and marginal errors.



CHECK YOUR PROGRESS

Q1: True or False :

a) Research design is formulated after conducting the research.

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b) Research design minimises uncertainties and confusions

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Q2: Why is research design similar to a map? (Answer in about 20 words)

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4.6 FEATURES OF A GOOD RESEARCH DESIGN

We know that the research design which provides direction to the researcher to carry out his/her research scientifically is very important for the research. Let us now try to understand the features of a good research design:

- Systematic, Scientific, Efficient, Economical and Flexible are all characteristics of a good research design.
- The design which gives clarity regarding what's and how's of research, which maximises reliability of data collected and analysed and minimises errors and biases is considered to be an appropriate and scientific research design.

- For a **good research design**, all the components of research should go together with each other in a coherent way. The theoretical and conceptual framework must match with the research goals and purposes. In the same way, the data gathering method must fit with the research purposes, conceptual and theoretical framework and method of data analysis.
- Further, the design which gives the smallest experimental error is supposed to be the best design in many investigations.
- Similarly, the design which helps the researcher to gather maximum information or data and also provides an opportunity for considering many different aspects of a problem is considered most appropriate and efficient design in respect of many research problems.

Thus, the question of a good design is related to the purpose or objective of the research problem and also with the nature of the problem to be studied. A design which may be quite appropriate for a particular study may not be the same for another study. One single design cannot serve the purpose of all types of research problems. But there are certain aspects that a good research design for a particular research should focus on and they are:

- The means of obtaining information
- The nature and skills of the researcher and his staff, if any
- The objective the problem to be studied
- The nature of the problem to be studied, and
- The availability of time and money for the research work



CHECK YOUR PROGRESS

Q3: True or False

a) The research design which maximises bias is a good research design.

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b) One single design cannot serve the purpose of all types of research problems.

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.....



4.7 LET US SUM UP

- The research design articulates what data is required, what methods are going to be used to collect and analyse this data, and how all of this is going to answer the research questions of a particular research.
- Research design therefore stands for advance planning of the methods to be adopted for collecting the relevant data and techniques to be used in their analysis, keeping in view the objective of the research.
- Just as we need a ready architectural design or blueprint before the construction of a building so that we can have it as per our aspiration, similarly in case of research too, we need a research design to guide and direct us to achieve our results.
- Research design enables the researcher to conduct the researcher systematically and scientifically.
- Research design facilitates efficient research and prevents wastage of time and money.

- Research design provides direction to the study. It helps in minimising uncertainty, ambiguity, confusion and practical haphazard related to any research problem.
- Absence of a research design, many researches may fail to serve the purpose for which they have been taken up. In fact lack of research design may even lead to misleading conclusions.
- A design is considered to be good if it can minimise bias and maximise the reliability of data collected and analysed.



4.8 FURTHER READING

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4.9 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q No 1: (a) False (b) True

Answer to Q No 2: Just as a map guides our way, and gives us direction similarly research design guides us regarding the way we should proceed in our research work

Answer to Q No 3: (a) False (b) True



4.10 MODEL QUESTIONS

A) Short Questions (Answer each question in about 150 words)

Q1 : Define research design.

Q2 : Explain the different components of a research design.

B) Long Questions (Answer each question in about 300-500 word)

Q1 : Explain the need and Importance of research design.

Q2 : Discuss the different features of a good research design.

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UNIT 5: TYPES OF RESEARCH DESIGN

UNIT STRUCTURE

5.1 Learning Objectives
5.2 Introduction
5.3 Exploratory Research Design
5.4 Descriptive Research Design
5.5 Experimental Research Design
5.6 Diagnostic Research Design
5.7 Survey Method
5.8 Case Study Method
5.9 Difference between Quantitative and Qualitative Research Design
5.10 Let Us Sum Up
5.11 Further Reading
5.12 Answer to Check Your Progress
5.13 Model Questions

5.1 LEARNING OBJECTIVES

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

- know about the meaning of exploratory research design and its importance in social research.
- understand the different components and concepts associated with case study methods.
- explain the diagnostic research design
- understand in detail the survey method of research designs
- distinguish between quantitative and qualitative research design.

5.2 INTRODUCTION

The term ‘design’ means “drawing an outline” or planning or arranging details. It is a process of making decisions before the

situation arises in which the decision has to be carried out. 'Research Design' is planning a strategy of conducting research. It plans as to: what is to be observed, how it is to be observed, how to record observations, how to analyse/interpret observations, and how to generalize . Research design is, thus, a detailed plan of how the goals of research will be achieved.

A research design is the systematic and logical planning for action. It provides direction to research project. In precise, it may be called as a plan for collecting and analysing data in an efficient and relevant manner. It is a blue print and therefore at its best only tentative changes in the design are permitted and are dictated by considerations during the operations of the project. In other words, a research design is not a highly specific plan to be followed without deviation but rather a series of guide-posts to keep one headed in the right direction. Research design has been defined by different social scientists in different terms. In this unit, we will discuss in details about the various types of research design.

5.3 EXPLORATORY RESEARCH DESIGN

The main purpose of exploratory research is to gather information which will help in future for formulation of a precise research problem. On the basis of the collected facts the researcher may be able to formulate sound hypothesis for further research. It may also enable the researcher to get himself/herself acquainted with the phenomena which he/she expects to investigate at a later stage. The aim of an exploratory or formulative study may be clarification of concepts, establishing priorities for future research and collection of data about the actual conditions which affect an intended research. An exploratory research employs exploratory design.

Requirements of Exploratory Design

The essentials for exploratory or formulative design are:

- **Review of pertinent literature:** While proceeding in the path of research, the researcher has to take help from the work already done by his/her predecessors. By doing so he/she will not only save himself/herself from the problem of trial and error but also minimize the expenditure of his/her energy.
- **Experience survey:** Because of the complicated nature of social problems a researcher may not be in a position to collect all the required materials about a particular problem from one place. At times the researcher has to contact the persons who have earned enough experience to understand and analyse the social reactions.
- **Analysis of insight stimulating cases:** Analysis of insight stimulating cases includes all those events, incidents and phenomenan that stimulate the researcher. Such cases invoke in the investigator the thinking required for the formulation of the hypothesis. In this regard the attitude of the investigator, intensity of the case study and integrative power of investigators appear to be very important.

5.4 DESCRIPTIVE RESEARCH DESIGN

The purpose of descriptive research design is to describe some event, situation, people, group or community or some phenomenon. Fundamentally it is a fact finding exercise which focuses on relatively far dimensions of a well defined entity, aiming at precise and systematic measurement of some dimensions of a phenomenon. Usually a descriptive design involves detailed numerical descriptions, such as distribution of a population of a community by age, sex, caste or education. The researcher may also take recourse to descriptive design for estimating the proportion of people in a particular geographical locality with respect to their specific view or attitudes.

However the procedure followed in descriptive design is broadly analogous, notwithstanding the differences evinced in their field, formulation of hypothesis, objectives, for treatment of the problem and in matters of field expansion.

5.5 EXPERIMENTAL RESEARCH DESIGN

Experiment has been regarded as the sole basis of scientific method for fairly long time and it was on this basis that social sciences were denied the place of science. The use of this method has primarily been made in the physical sciences where the subject-matter can be given the laboratory treatment under controlled conditions. But this method which for a fairly long time remained the exclusive domain of the physical scientists is gradually finding favour with social sciences as well. Experiments now play an important part in researches in Psychology, Sociology and Anthropology, although social experiments are slightly different from the physical experiments as accounts of the limitations placed upon them by the nature of the subject matter with which the social sciences have to deal.

A social experiment has been variously defined by the writers. Jahoda and others, regard social experiment as a method of testing hypothesis. Greenwood suggests that, an experiment is the proof of a hypothesis which seeks to hook up two factors into a causal relationship through the study of contrasting situations which have been controlled on all factors except the one of interest the latter being either the hypothetical case or the hypothetical effect".

According to Festinger," the essence of an experiment may be described as observing the effect on a dependent variable by manipulation of independent variables."

The basic factor in case of experimental method is, thus the control over the subject of study and manipulation of an independent variable to study its effect upon the dependent variables. The control

and manipulation of independent variable although fundamental to experimental method is nevertheless a rather loose term. It is not so much the control as such but the degree of control that one can exercise. It is because of this difference in the degree of control that there is wide variety of opinion regarding the social experiments.

Types of Experiments

Social experiments may be divided into various classes according to the type of setting, nature and extent of control and the technique adopted for manipulating the variables. Greenwood has mentioned the following types of experiments:

- **Trial and Error Experiment** : This may be called as the earliest form of experiment. Under this method the researcher does not prepare a structured plan of study. He/she prepares a hypothesis and tries to test it on actual social conditions, wherever, they may be found. As the study is not rigidly planned his technique will undergo a constant modification in the light of experience. For example he may start his studies on a small group but later on finding that it was unsuitable may enlarge it or change it altogether.This type of experiment may hardly be called scientific and usually entails much fruitless labor and waste of time.

- **Natural Experiment** : It is also known as field experiment. This name has been given to this method because the experiment is conducted in the natural setting. It is different from the from the field study or field observation because in case of field experiment we try to manipulate the independent variable while in case of field study we simply observe the phenomena taking place without any kind of manipulation.

  Natural experiment has been used for studying a wide variety of techniques and methods such as advertising technique, training methods, effect of group decision and group

participation, effectiveness of political propaganda and the like. As an illustration we can cite the experiment carried on by Coch and French regarding the effect of participation by the employees in planning upon their resistance towards it. The hypothesis in this case was that greater the participation on the part of employees in planning to meet the changed condition, the less would be their resistance to the change. The experiment was conducted in a mill. Certain changes were introduced in the working of the factory. In the cases of control group no participation of labor was allowed. The new changes were simply explained to the workers by the production manager. In case of the second group the representative of the workers were allowed to discuss things. In the third group total participation was allowed. In this way it was possible to study the effect of different type of participation and also varying degree of participation upon the resistance of the workers towards change. The hypothesis in this case was found to be correct as it was proved that in all cases where the workers were allowed to participate in deciding the change the resistance was almost negotiable.

- **Ex-post-facto Technique :** This technique is generally used to study the varying influence of two identical factors. Thus for example, suppose it is proposed to study the influence of Hindi and English education upon future adjustability in life, we shall take an equal number of students in each group keeping in mind that other variables like age, economic status, intelligence etc. should be matched in both cases. After, say, ten years we shall again try to locate those persons and see how they are placed in life. The difference between the two may be attributed to the nature of education received.

- **Laboratory Experiment:** A laboratory experiment has been defined by Festinger' as one in which the investigator creates a situation with the exact conditions he wants to have and in which he controls some and manipulates other variables. The major difference between field experiment and laboratory experiment is that in field experiment the nature of experiment is studied in the natural setting with degree of control. A field experiment is studied in the natural setting with control over independent variables, but for a laboratory experiment the setting is artificially created. Thus, for example, if we make an experiment with the school boys in the school itself it would be field experiment, but if we create a small classroom and experiment upon it, it will be laboratory experiment. In a laboratory experiment the phenomenan is artificially created and is naturally subject to greater control and manipulation.

5.6 DIAGONISTIC RESEARCH DESIGN

The diagonistic research design endeavours to find out the relationship between express causes and also suggests ways and means for the solution. Thus the diagonistic studies are concerned with discovering and testing whether certain variables are associated. Such studies may also aim at determining the frequency with which something occurs or the ways in which a phenomena is associated with some other factors.

Diagonistic studies are mostly motivated by hypothesis. A primary description of a problem serves the basis so as to relate the hypotheses with the source of the problem. Here only those data which form and corroborate the hypotheses are collected. With regards to the objective of diagonistic research design, it is based on such knowledge which can also be motivated or put into practice to

find solution of the problem. Therefore it is obvious that the diagonistic design is concerned with both the cause as well as the treatment.

Diagonistic studies seek immediate to timely solution of causal elements. The researcher before going through other references, endeavours to remove and solve the factors and the causes responsible for giving rise to the problem.

The research design of diagonistic studies demands strict adherence to objectivity for elimination of any chances of personal bias or prejudice. Utmost care is taken while taking decisions regarding variables, nature of observation to be made in the field, the type of evidence to be collected and tools of data collection. Simultaneously the research economy should be carefully calculated. Any faulty decision in this regard will result in wastage of time, energy and money.

Usually the first step in such designing is accurate formulation of a research problem wherein the research objectives are precisely stated and principal areas of investigation are properly linked. Otherwise the investigator will find it difficult to ensure the collection of required data in a systematic manner. Simultaneously, the clarification of concepts and the operational definition of the terms should be ensured so as to make them amenable to measurement.

At the next stage, certain decisions regarding collection of data are taken. In this regard, the researcher should always calculate in mind the advantages and disadvantages of the method to be employed and at the same time the nature of research problem, type of data needed, degree of desired accuracy etc. should be considered. Again, while collecting data, efforts should be made to maintain objectivity to the maximum possible extent.

In order to surmount problem of the financial constraints and paucity of time, a representative sample of the research universe should be drawn so as to gather relevant information. A wide range of sampling techniques are prevalent which must be made use of appropriately by the researchers.

At the stage of analysis of data, the researcher must take proper care in placing each item in the appropriate category, tabulating of data, applying statistical computation and so on.

5.7 SURVEY METHOD

The survey method is used to collect data of existing phenomena and to justify current practices or conditions or to make plans for improving them. The term 'Survey' has come from two words, 'Sur' and 'Vor', which mean ''to see'' a particular thing from a high place. In Natural Sciences it is used for measuring the things and in Social Sciences, it indicates the investigation of social problems, the technique of collection of data through interview, questionnaire and books etc. Many philosophers and scholars have defined the term in different ways. According to P.V.Young, " Social surveys are concerned with (i) the formulation of a constructive programme of social reform and (ii) amelioration of current conditions of a social pathological nature, which have definite geographic limits and definite social implications and significance, (iii) these conditions can be measured and compared with situations which can be accepted as models". It is claimed that Young's definition of social survey is quite appropriate. Mark Abrams has defined social survey as a '' process by which quantitative facts are collected about the social aspect of a community's position and activities". Hence, from the above definitions it is clear that social survey in a broad sense provides the basis for theory construction, and the implications for social planning and reform.

The concept of social survey is not new. With a prolonged history, it is both ancient and persistent. The history of social survey may be dated back to 447-425 B.C. when Herodotus wrote his own account on the effects of climates upon the traditions, religions, beliefs and behavior of people along with the effects of natural disasters and war upon the social relations and economy. A German Scholar

Earnest Engel, an economist and statistician by profession, contributed a lot to social survey by formulating an original theory based on the study of family budgets. In the United States Sorokin, Zimmerman and Trompton have contributed immensely to survey. Whereas Zimmerman and Trompton have applied Leplay's techniques in their study of Ozark regions and some other communities, Lind's 'Middle Town', Lloyd Warner's 'Yankee City' and Ralph Linton's 'Plain Valley' are categorized as geographical and cultural studies. Leplay's methods and techniques were also adopted by Charles Booth in England. By engaging the services of some young and energetic scholars like Beatrice Potter, Octavia Hill, Graham Balfour, Clara Collett, H. Llewellyn Smith and others, Booth conducted very remarkable surveys and presented a factual account of the matter. In all his works, Booth maintained objectivity and made empirical and scientific approach. Although H.C. Preston was inspired by Booth and made impressive studies of poor people, his book ''Bitter Cry of Outcast London''(1883) was more dramatic and emotional than realistic in character. A far more extensive study was made by B.S. Rowntree in the early 20th century.

Development of the survey movement in the United States may be dated back to 1890 with Jacob Ries' extensive work on the economic conditions of the slum dwellers in thickly populated towns. The year 1902 witnessed the publication of "Battle of the Slums". Thereafter "The Commission for Rented Houses" was established in New York at the behest of President Roosevelt, in in order to collect relevant data regarding the conditions of people living in rental accomodations. Lincoln Steffen's survey of economic and political condition of seven industrial town of the states in1904 gave impetus to social survey movement of that country. In 1917 Mary Richmond published her classic book "Social Diagonsis", based on her social case work. She also tried to evaluate the significance of representative character of sampling. However Pacel Kellog and his associates conducted the most scientific survey in the first decade of the 20th century. Theirs was the most well

organized and systematic survey which attempted to understand the nature and effects of urbanization and modernization upon society. Between 1927 and 1931 the Regional Planning commission of New York conducted a survey of the problems and difficulties of the people in rented houses. Philip Klein and his associates organized an extensive survey of the social service in Pittsburg and also a study of related problem. Among the private individuals who conducted Social Surveys in the United States, the names of Ann W. Shyne , Otto Pollak and Donald Young deserve mention

Stages of Social Survey Method

There are different stages for conducting a social survey. They are as follows:

- **Selection of problem:** As social survey deals with social problems, selection of the problem is the first stage. Therefore unless and until the surveyors are not sure of the nature, character and clarity of the problem, they should not embark upon social survey. The social surveyor is not supposed to deal with every problem or any kind of problem. Rather as a careful observer the social surveyor must examine the clarity and definiteness of the problem he comes across in a community. Such a consideration must take into account the practical and utilitarian aspect which has its significance in the life of a community. Such a consideration must also take into account the practical and utilitarian aspect which has its significance in the life of a community.
- **Defining the purpose:** After the problem is chosen the surveyor attempts on defining the objective of the survey by making the purpose transparent so as to give direction to proceed, because in the absence of a crystal-clear definition of the aim the survey becomes directionless like a raddarless ship in the deep sea. The success of a survey and the capability of a surveyor is gauged only in relation to the attainment of goals.

Hence when goals are not clearly defined the surveyor will grope in the dark. The goal may be generic or specific it may be for collection of census data or for knowing the living conditions of the working class specifically. In any case the goal must be well-defined.

- **Defining the problem under investigation:** After having chosen the problem and having defined the goals, the surveyor endeavors to determine the scope, nature and character of the problem. For example, if the surveyor wishes to study the problem of drug addiction among the college youths he should define what he means by the term ''drug addiction'". He should also clarify different types of drugs causing addiction and the quantity of drugs taken per day indicating addiction.
- **Preparation of a schedule:** The constituent factors involved in the problem and its various elements need to be analysed so as to present a constructive programme. This necessitates the formulation of a detailed and systematic list in order to gather the relevant information around as well as directly on the subject of study.
- **Constitution of a commission:** All the official surveys are undertaken after constituting a commission headed by a director and some members who determine the policy and oversee its execution. The commission for survey is empowered to collect various types of data relevant to the study. It has to access to classified material considered appropriate for the purpose of survey. If the situation warrants the commission may be divided and sub-divided into various committees and sub-committees to deal with specialized matters.
- **Setting limits:** Determination of scope is the hall -mark of any scientific study. Understanding a problem necessitates systematic investigation into a limited and properly defined

subject matter. Unless the scope is determined before the beginning of a survey, no phenomenan can be studied properly. Determination of scope takes into account the political and administrative division, different economic levels, biological bases, bases of social status, geographical base etc.

- **Setting time limit:** Not only cost estimate and trained investigators but also time estimate is essential for any successful survey. Whereas some problem need immediate solution , some others may require gradual transformation, some surveys are also required to be conducted within specific time intervals. The problems which are of topical importance undergo the process of gradual change. But some problems like displacement of population, resettlement etc. need to be tackled immediately.
- **Decision about the means of information:** Depending on the type of survey, different techniques of collection of information are employed. The preliminary data collected through primary survey are mostly obtained through questionnaire, schedule and even through direct interviewing of informants. On the contrary secondary data are obtained through secondary survey on the basis of official and non-official reports and also through published and unpublished materials of primary survey.
- **Determination of the units of survey:** In order to make the field workers free from any kind of dilemma and to ensure smooth collection of data, the unit of survey should be defined in definite and unambiguous terms. The units should be stable, harmonized, simple and feasible.
- **Refinement of data:** As far as practicable, it must be determined before undertaking the actual survey as to what extent the materials collected can be refined. If it is a qualitative survey, the determination of accuracy and refinement should be directly

proportional to the availability of manpower, finance and time. However despite the availability of the maximum amount of funds, time and man power, it is never possible to obtain cent per cent accuracy in qualitative survey.

- **Selection and training of field workers and researchers:** While making selection of the primary investigators, the nature and scope of social survey should always be borne in mind. Intellectual acumen should not only be the basis of selection. Along with that the selecter should also lay emphasis on the personal qualities like pleasant personality, a good sense of humour, tactfulness, ability to establish rapport with the informants and the like. After their selection, they will have to be properly trained so as to deal with various types of information in the field.
- **Preparedness for cooperation of the informants:** Unless the cooperation of the informants is obtained, there will the problem of non-response as well as want of accurate information. Therefore prior to the survey being actually undertaken, it is essential to cause preparedness and responsiveness among the informants so as to obtain accurate information by the fieldworkers. The informants must be assured that the information given by them will be kept strictly confidential.
- **Choice of survey technique:** Determination of survey technique must be made before starting it, depending upon the scope and the nature of the survey. In case questionnaire or schedules are chosen, this must be prepared beforehand to avoid delay in surveying.
- **Conduct of field work:** After completion of the requirements as shown above, the field workers should get ready to go to the informants for collection of data. At this stage care must be taken to contact the informants keeping in view their

convenience. The field workers should be properly trained to establish rapport with the respondents as to elicit accurate information. Supervision is also required in the field work.

- **Organization, classification and statistical analysis of data:** The Data collected by the field workers under the supervision of the supervisors are then organized, classified and statistically analysed so as to be interpreted.
- **Drawing conclusion:** Conclusions are drawn from the findings based on analysed data. It is always necessary take the help of competent and able researchers not only to draw conclusions, but also to elucidate the conclusions.
- **Graphical representation:** The findings of a survey may be represented graphically so as to create lasting impression because of their attractiveness as well as ready intelligibility. Graphs have the capacity to bring to light the salient features of data at a glance without straining one's brain.

5.8 CASE STUDY METHOD

The case study method is a prominently used method of research. A case study can be defined as a holistic and in-depth study of an entity, a unit, person, event, etc. The case study research method enables the researcher to comprehend the subject in its entirety. The case study method is featured by its focus on bringing out the specificities and thereby developing a detailed understanding of the subject. It is perhaps this characteristic of the case study method that led Burgess to define the case study method as the 'social microscope'.

There are some common characteristics of the case study method. It facilitates the researcher to understand the uniqueness and particularities of the subject. This generally may not be possible in case of other research methods. While on the one hand, the case study research method enables the researcher to develop a general

understanding of the subject, on the other hand, at the same time, it reflects the specificity of the subject. This further enables the researcher to carry out an intensive and detailed study. It is often seen that the utility of the case study method of research is compared to that of other methods, particularly the statistical method. It is seen that while the statistical method generally provides an overall view or idea about the study, the case study method on the other hand provides the entire details of the subject. In the domain of social science research, the entity of the 'individual' holds a significant place. In case of the statistical research method, the 'individual' becomes obsolete. On the contrary, in the case study method, the idea of the 'individual' becomes significant because here the individual is considered as the whole and hence analyzed in its entirety. The case study method of research may employ several techniques while conducting a study. The techniques could be historical, descriptive, interview, etc, depending on the desired motive behind the study.

The case study method is also often analyzed in terms of the survey method of research. This is because the case study research is, often, also conducted as a supplementary method of study along with the survey method. In this context, the case study method can be further comprehended well by analyzing it in terms of the survey method. The case study, as mentioned above, caters to a detailed and intensive study, unlike the survey method which has a more broad based focus. This brings one to the aspect that while the survey method emphasizes on a plethora of units with the help of a selected sample, the case study method on the other hand emphasizes on a single unit. Further, while the findings of a study based on the survey method can be generalized, on the other hand, that of the case study method cannot be generalized. Again, the studies conducted on the basis of the survey method may be used to test hypothesis about large entities, social units, etc., those based on the case study method may be able to test hypothesis about specific entities.

5.9 DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE RESEARCH DESIGN

QUALITATIVE RESEARCH

Qualitative Research is a detailed, in-depth collection and analysis of quality data based on small samples, intended to provide insight and understanding.

Qualitative research addresses issues that grasp the subjective meaning from the perspective of the participants. It is a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data. The primary aim of a qualitative research is to provide a complete, detailed description of the research topic. It is usually more exploratory in nature. The research situation is designed to be as open possible that enables the researcher to analyse the social situation. The researcher serves as the primary data gathering instrument in qualitative research. Here, the researcher employs various data-gathering strategies, depending upon the thrust or approach of his/her research. Qualitative Research is primarily subjective in approach as it seeks to understand human behaviour and reasons that govern such behaviour. Thus, qualitative data is characterized by exhaustive and distinct attributes or categories that do not possess numerical magnitude. The researcher has the scope to use certain open techniques through which the person conducting the study collects information by observing phenomena and interacting with the respondents in its natural setting. Some of the most significant data-gathering strategies used in qualitative research are individual in-depth interviews, structured and unstructured interviews, focus group discussions, narratives, content or documentary analysis, ethnography or participant observation and archival research.

- **Ethnography/ Participant Observation:** The researcher involves oneself in a social setting for a considerable amount of

time (sometimes months, years) to observe, experience and listen with the objective of having an in-depth understanding of a particular cultural group which is the subject of study.

- **Focus Group Discussions:** It is a kind of an interview with a group people on a specific topic or issue where each of the selected members discusses their views on the subject. It aims to reveal how the group participants view a particular issue that they might be facing.
- **Semi-structured and Unstructured Interviews:** Qualitative research makes use of semi-structured or unstructured interviews with open-ended questions. A respondent has the freedom to express his/ her views, feelings and experiences without any restriction, time or word limit. It helps the researcher to get an in-depth understanding of the research problem as the interviewee expresses hi/ her experiences and knowledge on the particular topic.
- **Content Analysis:** It is a technique to analyse documents and texts that seek to interpret information for the study. Content analysis is applicable to different forms of unstructured information such as transcripts of interviews, open-ended questionnaires, case studies, archival materials etc. It seeks to bring out a pattern of information that can contribute to the research.
- **Case-study Method:** It is a research strategy that investigates a social phenomenon in its natural context. The “case” may be an individual, a community, a cultural group, an organization, an event or an action, existing in a specific time and place. The case study research design is useful for testing whether scientific theories and models actually work in the real world.

Advantages of Qualitative Research

- It provides liberty to the researcher to do an in depth study of the particular topic. The aim is to deliver a complete detailed description of a social reality.

- The semi-structured and unstructured interviews and participant observation methods employed in qualitative research helps in bringing about an unexplored domain of knowledge.
- The research design formulated for qualitative research may gradually evolve as the study advances and further explores the area of study.

Disadvantages of Qualitative Research

- Researcher tends to become subjectively immersed in the subject matter.
- Limited use of statistical data results in generation of non-statistical data in qualitative research which has less generalizeability.
- Qualitative research is more time consuming both in the processes of collection and analysis of data.

QUANTITATIVE RESEARCH

Quantitative Research techniques seek to quantify data and apply some form of statistical analysis.

Quantitative Research focuses more in counting and classifying features and constructing statistical models and figures to explain what is observed. Quantitative research techniques seek to quantify data and apply some form of statistical analysis. Quantitative data possesses the characteristic of numerical magnitude. Only measurable data are gathered and analyzed in quantitative research and thus it is objective in its approach. It only seeks precise measurements and analysis of target concepts to answer his/her inquiry. Quantitative Research makes use of tools such as questionnaires, surveys, statistical measurements and other equipment to accumulate numerical or measurable data. Quantitative research is mostly based on hypotheses which are to be tested. A hypothesis formulates a relation between two or more variables or phenomenon that needs to be statistically tested in a quantitative research.

Some of the important techniques of data collection and analysis in quantitative research are:

- **Hypothesis :** A hypothesis is a tentative assumption about relation between variables or an explanation of a research problem.
- *Close ended questionnaire:* Close-ended questionnaires gives options of specific answers one of which the respondent has to select. The multiple answers are already stated against each question. The close-ended questions are easier for quantitative analysis.
- **Structured Interviews:** Similar to the close-ended questionnaires, structured interviews consist of a set of questions of close-ended nature which the researcher asks the respondents. The respondents do not get much scope of elaboration of their views on a particular topic.
- **Experimental Research:** It attempts to establish a cause and effect relationship among the groups of participants that make up the independent variable of the study. In experimental research, the cause (the independent variable) is under the control of the researcher.
- **Use of Statistics:** Statistical methods are used extensively in pure science and social science disciplines. Quantitative research using statistical methods starts with the collection of data, based on the hypothesis or theory. Usually a big sample of data is collected – this would require verification and validation before the process of data analysis. Software packages such as SPSS (Statistical Package for Social Sciences) are used for this purpose.
- **Measures of Central Tendency:** It seeks to bring out an average for a distribution of values and has three different forms of average:- (a) Mean- here, all the values in the distribution are summed up and then divided by the number

of values. (b) Median- This is the mid-point in a distribution of values. (c) Mode- This is the value that occurs most frequently in a distribution.

- **Measures of Dispersion:** The amount of variation in a sample or a distribution of values is measured by using: (a) Range- it is the difference between the maximum and minimum value in a distribution of values. (b) Standard Deviation- The average amount of variation around the mean, it is calculated by taking the difference between each value in a distribution and the mean and then dividing the total of the differences by the number of values.
- **Correlation coefficient:** It is the measure of the relationship between two variables.
- **Multiple Regression:** It shows the degree to which multiple factors (independent variables) impact change in an outcome (dependent variable).
- **Chi-square test:** It is used to analyze data reported in categories, test is interested in seeing if two or more groups differ with respect to nominal variables. For example- the relationship between gender and educational qualification is statistically significant.
- **t-test:** *This* test used to see whether a difference between the means of two samples is significant.
- **ANOVA *(analysis of variance)* :** It is a technique which helps researchers discover if there is a significant difference between the means of more than two groups.

  Quantitative data may be represented in the form of tables, graphs and diagrams after analysis.

Advantages of Quantitative Research

- Data is in the form of numbers and statistical methods are used to procure objective results.

- Quantitative data has more generalizeablity is able to test hypotheses.
- Quantitative analysis requires lesser time compared to qualitative analysis and it can analyse result collected from huge sample size using statistical methods.

Disadvantages of Quantitative Research

- Use of close ended questionnaire and structured interviews in quantitative research may limit an indepth analysis of the research problem.
- This approach measures the responses of a large number of individuals to a limited set of questions. The analysis of relationships between variables creates a static view of social life.

Difference between Quantitative and Qualitative Research

Quantitative research generates numerical data or information that can be converted into numbers. Qualitative Research on the other hand generates non-numerical data. Quantitative research is based on the quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon that is relating to quality or kind. Qualitative research is especially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour. The following table shows some of the major differences between Quantitative and Qualitative research.

Table 5.1: Differences between Quantitative and Qualitative Research

Variables	Quantitative Research	Qualitative Research

Theory	As a starting point to be tested	As an end point to be developed
Data collection	Standardized	Open
Analysis of data	Statistical analysis of numerical data	Interpretative analysis, content analysis of interviews, discussions, observation, etc.
Knowledge generated	Establishes relationships, causation	Describes meaning, discovery
Report	Report statistical analysis Basic element of analysis is numbers	Report rich narrative, interpretative. Basic element of analysis is words/ ideas, observation.

CHECK YOUR PROGRESS

Q.1: What is the main purpose of an exploratory or formulative design? (Answer in about 20 words)

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.....

Q.2: What is descriptive research design? (Answer in about 20 words)

.....



.....

Q.3: With what is the Diagnostic research design concerned?

(Answer in about 20 words)

.....

.....

Q.4: What is Experimental Research Design?

(Answer in about 20 words)

.....

.....

Q.5: What are the three components of Experimental Research Design? (Answer in about 20 words)

.....

.....

Q.6: List one advantage and disadvantage of the Case Study Method. (Answer in about 20 words)

.....

.....

Q.7: State the differences between Quantitative and Qualitative research.(Answer in about 20 words)

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5.10 LET US SUM UP

- Research design can broadly be classified into four types: Exploratory or Formulative Design, Descriptive Research Design, Diagonistic Research Design and Experimental Research Design
- The main aim of an exploratory study is clarification of concepts, establishing priorities for future research and collection of data about the actual conditions which affect an intended research.



- The main purpose of descriptive design is to describe some event, situation, people, group or community or some phenomena.
- The diagonistic research design endeavours to find out the relationship between causes and suggest ways and means for the solution.
- The core of experimental research design lies in drawing inferences by observation of human relations under conditions of control.
- The survey method is used to collect data of existing phenomena and to justify current practices or conditions or to make plans for improving them.
- The case study method is a prominently used method of research. A case study can be defined as a holistic and in-depth study of an entity, a unit, person, event, etc. The case study research method enables the researcher to comprehend the subject in its entirety.

5.11 FURTHER READING

1. Ackoff, Russell L. (1961). *The Design of Social Research* Chicago: University of Chicago Press.
2. Ghosh, B.N. (1982). Scientific Methods and Social Research, New Delhi: Sterling Publishers Pvt.Ltd.



5.12 ANSWER TO CHECK YOUR PROGRESS

Answer the following questions in about 300-500 words



Ans. to Q.No.1: The main purpose of exploratory or formulative design is to gather information which will help in future for formulation of a precise research problem.

Ans. to Q.No.2: A Descriptive Research Design is such a design which describes events, situation, people, group or community or some phenomena.

Ans. to Q.No.3: The Diagonistic Research design is concerned with the express characteristic and existing social problems.

Ans. to Q.No.4: Experimental Research design refers to systematic study of human relations by making the observation under conditions of control.

Ans. to Q.No.5: The three components of Experimental Research design are : comparison, manipulation and control.

Ans. to Q.No.6: Advantage: Research based on this method is easy to be conducted as it does not require any special condition or environment.

Disadvantage: The case study method is very time consuming.

Ans to Q. No 7 : Quantitative research generates numerical data or information that can be converted into numbers. Qualitative Research on the other hand generates non-numerical data. Quantitative research is based on the quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon that is relating to quality or kind. Qualitative research is especially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour.

5.13 MODEL QUESTIONS

Answer the following questions in about 300-500 words

Q.1: What are the essentials of an exploratory or formulative study?



Q.2: Describe in detail about descriptive research design?

Q.3: Define experimental research design and describe its types?

Q.4: Discuss the case study method of research design.

Q.5: Distinguish between qualitative and quantitative research design.

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UNIT 6: RESEARCH METHODOLOGY

UNIT STRUCTURE

6.1 Learning Objectives
6.2 Introduction
6.3 Identification of the Problem
6.4 Formulation of the Problem
6.5 Literature Review
6.6 Formulation of Objectives and Hypothesis
6.7 Concept and Definition
6.8 Methods of Data Collection
6.9 Let Us Sum Up
6.10 Further Reading
6.11 Answer to Check Your Progress
6.12 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 literature review
- describe the objectives and hypothesis of research methodology

6.2 INTRODUCTION

This unit deals with the discussion on research methodology. 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. In this unit we will discuss about the identification of research problem, literature review, formulation of research problem, objectives, hypothesis and methods of data collection in details.

6.3 IDENTIFICATION OF THE 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. There 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.

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 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.

6.4 FORMULATION OF THE 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 while stating the problem.

Researcher must understand the origin and nature of the research problem 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.

6.5 LITERATURE REVIEW

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.

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 problem should be clearly stated. Since it is called a ‘review’ a researcher should not merely read works but has to identify the limitations or the unexplored arenas of those studies and accordingly they should give attention to the limitations and the unexplored arenas.

6.6 FORMULATION OF OBJECTIVES AND HYPOTHESIS

The knowledge gained through review of literature helps a researcher to develop a clarity regarding the problem. Therefore in this stage the researcher defines the problem, identify the scope of the study and set the objectives of the study. In this stage the researcher also articulates the hypothesis of a study. The word hypothesis means a tentative statement about the solution of the problem. Hypothesis offers a solution to the problem that is to be verified empirically based on some rationale.



Thesis : A dissertation embodying results of orginal research and substantiating a specific view.

'Hypo' means composition of two or more variables which is to be verified.

'Thesis' means position of these variable in specific frame of reference.

This is the operational meaning of the term hypothesis. Hypothesis is the comparison of some variables which have some specific position or role of the variables i.e. to be verified empirically.

A tentative generalization or theory formulated about the character of phenomena under observation are called hypothesis. It is a statement temporarily accepted as true in the light of what is known at the time about the phenomena.

According to Theodorson and Theodorson (1969:191), "a hypothesis is a tentative statement asserting a relationship between certain facts".

Webster (1968) has defined hypothesis as "a tentative assumption made in order to draw out and test its logical or empirical consequences".

According to Franscis Abrahim, 'a hypothesis is a statement of the relationship between two or more variables'. For example, a researcher states that there exists a relationship between low level economic development and increase in youth unrest.

While formally stating the problem or the hypothesis of the study, the researcher is required to define the concepts. For instance in the example cited above one is required to provide measurable definition of the variables like economic development, youth, youth unrest etc. In other words, a hypothesis carries clear implications for testing the stated relationship, i.e., it contains variable that are measurable and specifying how they are related. A statement that lacks variables or that does not explain how the variables are related to each other is no hypothesis in scientific sense.

Following are a few examples of hypothesis:

- Group study increases higher division achievement.
- Suicide rate varies inversely with social integration

A hypothesis is described as a ray of light through which we may arrive at the truth.The hypothesis should be tested or verified by statistical mentods. A sucessfully tested hypothesis is a theory which explains a phenomena in the real world.

6.7 CONCEPT AND DEFINITION

One of the important step of research is to define concepts used in the hypothesis. Some concepts represent facts and other like attitudes, cannot be related to phenomena and can only be inferred.But the definition of concepts should be done in abstract terms to link the results of the study to the exixting body of knowledge. It also helps the researcher in the collection of data.The next step of research is to establish working definitions relating to the topic. This enables the researcher to translate the concepts into observable events to carry out the enquiry.

6.8 METHODS OF DATA COLLECTION

On the basis of the type of research, one has to select the appropriate ‘tools’ and ‘techniques’ of collecting data.In any type of research the most important aspect is accurate recording of the data.

On the basis of the type of research, the site for collecting data will vary. In social science research the site for collecting data is society itself. But in case of research in physical science data is recorded in laboratory or controlled situation. After the data is collected, a researcher is required to examine them to see whether his or her hypothesis is confirmed or rejected. Again, some data also lead to unknown and unexpected knowledge.We will discuss about the methods of data collection in unit 8 of this course.



CHECK YOUR PROGRESS

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

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Q 2: What is meant by hypothesis?. (Answer in about 20 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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6.9 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 ina 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.
- 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.
- Hypothesis is the comparison of some variables which have some specific position or role of the variables i.e. to be verified empirically.
- A hypothesis is described as a ray of light through which we may arrive at the truth.The hypothesis should be tested or verified by statistical mentods. A sucessfully tested hypothesis is a theory which explains a phenomena in the real world.
- On the basis of the type of research, one has to select the appropriate 'tools' and 'techniques' of collecting data.In any type of research the most important aspect is accurate recording of the data.



6.10 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

6.11 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 word hypothesis means a tentative statement about the solution of the problem. Hypothesis offers a solution to the problem that is to be verified empirically based on some rationale.

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.

6.12 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 importance of literature review in identifying the research problem.

Q 3: Discuss the different methods of data collection.

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UNIT 7: SAMPLING

UNIT STRUCTURE

8.1 Learning Objectives
8.2 Introduction
8.3 Meaning of Sampling
8.4 Types of Sampling Methods
8.4.1 Probability Sampling Methods
8.4.2 Non-Probability Sampling Methods
8.5 Let Us Sum Up
8.6 Further Reading
8.7 Answer to Check Your Progress
8.8 Model Questions

8.1 LEARNING OBJECTIVES

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

- put forward the meaning of sampling
- differentiate between population and sample
- discuss the advantages and disadvantages of sampling
- describe the different types of sampling techniques with appropriate examples.

8.2 INTRODUCTION

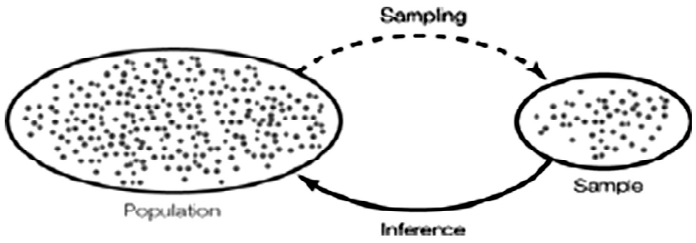
In any field of inquiry, we have a 'universe' or a 'population' which consists of all the items or individuals related to particular study. While initiating a survey or research the very first thing that would come to our mind is whether to consider the entire set of population or only a limited portion of it for the study. A population can be an entire class of student, the total number of people residing in a district, the available commercial products in the market, all patients in a hospital, total number of households in a village, all the workers of a factory, and so on.

Suppose we want to conduct a study to check the academic progress of the students of a school having 1000 students. In this case, if we take into consideration the records of all the 1000 students of the school without leaving anyone's data, then we are taking the entire "population" for the study. The field of inquiry in this case would be much larger. It will be extremely time consuming to check the records of all the 1000 students of the school to come to a conclusion. On the contrary, the same study can be done in a short span of time with the help of a relatively smaller set of data. For instance, instead of collecting data from the 1000 students, we can rather collect the data from 20 students from each class which might bring the total set of data to 200 assuming 10 classes in the school. This would reduce the amount of data to be collected to make conclusions about the students of the school making the study more convenient and less time consuming. This method of considering a part of the population is called 'sampling method', and the smaller group of the population considered for the study is called the 'sample'.

8.3 MEANING OF SAMPLING

Sampling is the process of selecting a few (a sample) from the bigger group (the population) for obtaining, estimating and/or predicting various attributes or characteristics of the bigger group. A sample is a subgroup of the population a researcher is interested in. Thus, from Figure 8.1, it can be seen that the larger sphere consists of the total units of data or population and the smaller sphere has a sample drawn from the population. Now, a researcher can make inferences or conclusions about the population based of the sample data.

Figure 8.1: Population and Sample



Supose we want to find out the average income of families living in a city. Let us consider the amount of effort and resources required to go to every family in the city to find out their income. Instead, a researcher can select a few families as sample and then, on the basis of findings of the sample an estimate of the income of families in the city can be obtained. Thus, a sample is a subgroup of the population we are interested in which facilitates inferences about the population.

The main principle behind sampling is that we get to know about the total units by observing a few units and extend our inference about the sample to the entire population. For example, to check if a bag of rice is of good quality or not we generally take a handful of rice from the bag and accordingly see if the quality of the bag of rice is good or bad. This is a very general example of sampling we use in our day to day life. There are certain basic principles of sampling as mentioned below:

- Sample units must be selected in a systematic and objective manner.
- Sample units must be clearly defined and easily identifiable.
- Sample units must be distinct from each other.
- Same units of sample should be used throughout the study.

While collecting a sample, a researcher must keep in mind the following points:

- **Nature of population:** Sampling depends on the nature of the population. Population can be either a finite or infinite one. For example, households of a village, number of workers in

an office are examples of finite population whereas output from a machine is an example of infinite population. Considerations for sampling, in both these case, would be different.

- **Sampling unit:** Each individual element of the population is called a sampling unit. It can be a district, village, an individual, etc. A researcher has to decide such sampling units appropriate for his study.
- **Sampling frame:** It is the operational definition of the population that provides the basis for sampling. It is also known as the source list.
- **Size of sample:** It is the number of items or sampling units to be selected from the population for the sample. The sample size should not be either too large or too small rather it should be optimum. There are definite ways of determining the optimum sample size for a study.

  Parameters of interest: Specific attributes of the population are called parameters. Likewise, the similar attributes of the sample are termed as the "statistic". The researcher should consider the question of the specific population parameters which are of interest. The purpose of sampling is to derive the population parameters based on the findings about the sample statistic. This process is known as generalisation.
- **Budgetary constraints:** Cost considerations are to be kept in mind and accordingly the size of sample should be considered.
- **Sampling procedure:** The researcher must decide the specific ways in which the sampling units are to be selected and the sample is to be drawn. This is termed as the sampling procedure. Appropriate sampling procedure ensures that it produces relatively small errors and minimises the systematic biases.
- **Sampling errors:** If sample size selected for study is very small or due to non-representative nature of the sample, the estimated results may differ from the actual population results. The

difference thus obtained between the sample results and the actual population values are referred to as the sampling error. Sampling errors can be reduced by increasing the sample size.

- **Characteristics of a good sample design:** Following are considered as some of the indications of a good sample design:
  - It must result in a truly representative sample.
  - It should result in small sampling error.
  - It should be feasible in terms of funds and other resources available for the research study.
  - It should be such that systematic bias can be controlled in a better way.
  - It should be such that the results from the sample study can be applied to the universe with reasonable level of confidence.



CHECK YOUR PROGRESS

Q 1: What is meant by sampling? (Answer in about 50 words.)

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Q 2: Distinguish between population and a sample? (Answer in about 50 words.)

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8.4 TYPES OF SAMPLING METHODS

Basically, there are two types of sampling methods, viz., probability sampling and non-probability sampling.

8.4.1 Probability Sampling Methods

In the probability sampling, selection of the each and every unit of the population into sample is determined only by the

probability or chance, and does not depend on any other considerations. In non-probability sampling selection of units of sample does not depend on probability or change but on other important considerations such as specific purpose and requirement of the study, judgement of the researchers, convenience of selecting the sample etc. The most importantly, probability sampling allows reasonable generalisations about the population parameters. Contrarily, generalisations are not carried out on the basis of non-probability samples. In the following we are discussing the different types of probability sampling.

- **Simple Random Sampling**

  Among the probability sampling methods, Simple Random Sampling (SRS) is the most popular and common one. In Simple Random Sampling every sampling unit of the population has an equal chance of being selected to the sample. Equal probability here implies that the each element in the population has got the same chance of being selected to the sample. The Simple Random Sampling preferably requires the following for effective implementation:

  - Complete list of units to be studied should be available;
  - Size of the universe should be known;
  - Sample size should be adequately specified;
  - Each unit should be ensured equal chance of being selected to the sample.

    Let us now discuss how to draw a simple random sample along with its different types. Simple Random Sample is drawn by the following methods:

  - **Lottery method:**

    Here, firstly the researcher needs to prepare the complete list of all the units of the population. Secondly, all the units

are to be written down in small pieces of paper. Next, all the pieces of paper to be put in a jar and mix well. Finally, the researcher has to select papers from jar the one by one and continue till the desired numbers of samples are not fulfilled. For example, suppose, a researcher wants to study the relationship between income and expenditure of the people in a certain village consisting of 300 households, with house numbers allotted from 1 to 300. The researcher then first has to write the house numbers on pieces of papers, then put them into a jar and accordingly select the slips with house numbers written on it. If the researcher wants to have a sample size of 100 households, he or she needs to pick 100 slips of papers and the numbers written on it will be the respective units to be selected.

- **Tippet table or table of random numbers:** The statisticians have prepared a set of tables called Tippet Table or Tables of Random numbers. A sample is framed with reference to these tables. Of these tables, Tippet's Table is most widely used. Using 41,600 figures, Tippet has involved 10,400 numbers comprising of four units each. In using this method, all items of the universe are first arranged in an order and then by using Tippet's Table the required numbers of items are selected as per the requirement of the sample size.

Sampling with or without replacement :

Random sampling can be selected using two different systems: sampling without replacement and sampling with replacement. Suppose we want to select a sample of 20 students out of a total of 80. The first student is selected out of the total class, and so the probability of selection for the first student is 1/80. When you select the second student there are only 79 left in

the class and the probability of selection for the second student is not 1/80 but 1/79. The probability of selecting the next student is 1/78. By the time you select the 20th student, the probability of his/her selection is 1/61. This type of sampling is called sampling without replacement. But this is contrary to our basic definition of randomisation; that is, each element has an equal and independent chance of selection. In the second system, called sampling with replacement, the selected element is replaced in the sampling population and if it is selected again, it is discarded and the next one is selected. If the sampling population is fairly large, the probability of selecting the same element twice is fairly remote. In most of the cases the second one i.e. sampling with replacement is adopted.

Advantages of Simple Random Sampling: The advantages of simple random sampling include the following:

- All elements of the population have equal chance of being selected in the sample;
- This method is free from personal bias of the investigator;
- It is the simplest of all the sampling methods and easier to conduct;
- This method can be used in conjunction with other methods in probability sampling;
- Degree of sampling error is low;
- The universe gets fairly represented by the sample drawn using this method.

Disadvantages of Simple Random Sampling: However, there are some disadvantages of simple random sampling like:

- It does not make use of the knowledge of population which the researcher may have;
- Sometimes, operationalisation of simple random sampling method, especially when an exhaustive list of the population units is absent, becomes very difficult.

- It cannot be used if the researcher wants to break the respondents into subgroups for comparison purposes.

● Stratified Sampling

This method of sampling is generally used when the population does not constitute a homogeneous group. According to this method of sampling, the population is divided into several sub-population or sub-groups called 'strata' having common characteristics. From each stratum, items are selected to make the sample. Since each stratum is more homogeneous than the total population, we are able to get more precise estimates for each stratum and by estimating more accurately each of the component parts; we get a better estimate of the whole. In brief, stratified produces better representations on several occasions. It is also important for the characteristic that becomes the basis of stratification to be related to the main variable that you are exploring.

Advantages of Stratified Sampling:

- The sample chosen can represent various groups and patters of characteristics in the desired proportions.
- It can be used for comparing sub-categories.
- It provides reliable and meaningful results.

Disadvantages of Stratified Sampling :

- It requires more time and efforts than simple random sampling.
- It is a comparatively complex method of selecting sample.
- This method is suitable only when complete knowledge about the diverse characteristics of the population is available. Hence, it has a limited scope.
- There is possibility of biasness while classifying the population into different strata.
- If size of population is already small, it may be difficult to further divide it into smaller groups or strata.

Systematic or Interval Sampling

According to this method, units of the population are numerically, geographically or alphabetically arranged and then every nth item of the population is selected for the sample. In simple terms, it is randomly selecting the first respondent and then every nth person after that; where 'n' is called the sampling interval.

For instance, if we want to collect a sample of 10 individuals out of 100, then first we would systematically arrange the people. Secondly, any one individual from the first 10 individual would be randomly selected. After that every tenth person would be selected for the sample. Like, if we first select the 5th person, then the sample would include the 5th, 15th, 25th, 35th, 45th, 55th, 65th, 75th, 85th, 95th individual. Thus, in systematic sampling only the first unit is selected randomly and the remaining units of the sample are selected at fixed intervals. The sampling interval is taken as N/n, where N is the population size from which 'n' number of units are to be selected as sample. Systematic sampling differs from simple random sampling as in the latter selection of sample units are independent of each other, whereas in the former the selection of sample units depend upon the selection of a previous unit.

Advantages of Systematic Sampling:

- It is considered as an improvement from a simple random sample as a systematic sample is spread more evenly over the entire population.
- It is an easier and less costly method of sampling.
- It can also be used when size of population is large. There is hardly any possibility of personal bias in this method.
- It is a rapid method and eliminates several steps otherwise taken in the other methods.

Disadvantages of Systematic Sampling:

- Every item in the population does not get the equal chance of being selected because only the first item is selected randomly.
- It ignores the units of population between two nth numbers. This may result in possibility of over representation or under representation of several groups.
- If there is some hidden periodicity in the population, systematic sampling will prove to be inefficient method of sampling. In practise, systematic sampling is efficient when list of population is available and they are of considerable length.



CHECK YOUR PROGRESS

Q 3: Define sampling error. (Answer in about 50 words.)

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Q 4: Mention the other name of probability sampling. (Answer in about 10 words.)

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● Cluster Sampling

Simple random and stratified sampling techniques are based on a researcher's ability to identify each element in a population. It is easy to do this if the total sampling population is small, but if the population is large, as in the case of a city, state or country, it becomes difficult and expensive to identify each sampling unit. In such cases the use of cluster sampling is more appropriate.

Cluster sampling is based on the ability of the researcher to divide the sampling population into groups (based upon

visible or easily identifiable characteristics), called clusters, and then to select elements within each cluster, using the simple random sampling technique. Clusters can be formed on the basis of geographical proximity (called area sampling) or a common characteristic that has a correlation with the main variable of the study (as in stratified sampling). Depending on the level of clustering, sometimes sampling may be done at different levels. These levels constitute the different stages (single, double or multiple) of clustering.

Advantages of Cluster Sampling:

- It is convenient to use cluster sampling when population is large or a large geographical area is taken for the study.
- The cost involved in this method is relatively less than the other methods of sampling.
- Respondents can be readily substituted for other respondents.
- It ensures flexibility in sampling.
- Characteristics of clusters can be estimated.
- It can be used when it is inconvenient to randomly select respondents.

Disadvantages of Cluster Sampling:

- Each cluster is not of equal size. For example while having clusters of towns and villages, each town or each village in the country is not of equal size.
- Comparison would not be on equal basis.
- Sampling error would be greater.
- In some situations, one individual might belong to two clusters and studied twice.
- It lacks representation.

- There could be homogeneity in one cluster but heterogeneity in the other.

8.4.2 Non Probability Sampling Methods

In our previous sections of this unit, firstly, we learnt about the concepts of sample and population and the differences between them. Secondly, types of sampling (probability and non-probability sampling techniques), particularly probability sampling techniques, were discussed in detail. In thissection, we will be learning about the non-probability sampling methods.

Non-probability sampling is a sampling procedure that does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Non-probability sampling is also known by different names such as deliberate sampling, purposive sampling and judgment sampling. In this type of sampling, items for the sample are selected deliberately by the researcher; their choice concerning the items remains supreme. In other words, under non-probability sampling, the organizers of the inquiry purposively choose particular units of the universe for constituting a sample on the basis that the small mass that they so select out of a huge one will be typical or representative of the whole. For instance, if a researcher wants to study the economic conditions of people living in a state, a few towns and villages may be purposively selected for intensive study on the principle that they can represent the entire state. The judgment of the organizers of the study plays an important part in this sampling design.

The prime difference between probability and non-probability sampling is that in the former type, each of the units of a population has the equal opportunity to get selected in a sample, whereas in the latter type, the sample is drawn based on some condition or willingness of the researcher. Hence all the units of the population do not have an equal chance of being included in the sample drawn.

There are five types of non-random sampling or non-probability sampling methods-

- **Convenience Sampling**

  It is also known as 'accidental' sampling. It depends upon the convenience of the researcher in finding the sample. As such, the researcher considers the people readily found in that instant for his/her sample. For example- if someone wants to study the use of library among college students, he/she would consider the number of readers in the library; based on the attendance he/she would draw the conclusion. This method of sampling is common among market research and newspaper reporters. Especially during elections, the media personnel take the opinions of the general public present in and around them. Again, approaching people standing in banks, grocery shops, malls, etc. and asking questions would also be an example of convenience sampling.

  Advantages of convenience sampling include the easy access to sample population and it is economic in terms of money and time. Disadvantages of convenience sampling include the biasness of the researcher, since only a certain units of the population are taken into consideration for the study.

- **Purposive Sampling**

  It is also known as 'judgemental sampling'. Here, the researcher makes a judgement as to who would be the best one to include in the sample in order to get the desired responses. As such, he approaches only those people who can provide him with the information he/she is searching for. For example, the TV reporters stopping certain individuals on the street in order to ask their opinions about certain

political changes constitutes the most popular example of this sampling method. However, it is important to specify that the TV reporter has to apply certain judgment when deciding who to stop on the street to ask questions; otherwise it would be the case of random sampling technique.

Let us consider another example. Suppose, a group of researchers wants to study the factors which lead a person to select ethical hacking as a profession. We know that ethical hacking is a skill which has been recently attracting youth. More and more people are selecting it as a profession. The researchers who understand what ethical hacking is will be able to decide who should form the sample to learn about it as a profession. That is when judgmental sampling is implemented. Researchers can easily filter out those participants who can be eligible to be a part of the research sample.

Economy in terms of money and time, avoidance of irrelevant units in the sample, better results when investigator is unbiased are some of the advantages of purposive sampling. On the other hand, personal biasness and unequal chance of getting selected in the sample are some of the limitations of purposive sampling. Since selection of the sample is governed by some pre-determined purpose, hence sample selection at times is considered to be partial.



CHECK YOUR PROGRESS

Q 5: What is meant by non-probability sampling? Answer in about 50 words.

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Q 6: Differentiate between probability and non-probability sampling. Answer in about 60 words.

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- **Quota Sampling**

  It is similar to stratified sampling with the only difference that in stratified sampling, population is divided into strata and units from each stratum are drawn randomly for the sample. Whereas, in quota sampling, there are certain fixed quotas based on which the sample is selected. The choice of the respondents is completely left to the interviewer. Let us consider the following example.

  Suppose, a researcher wants to study certain behaviour of the college students of a local college. Because the researcher can access this data, s/he knows that in this given population, 43% of the students are male and 57% are female. For a sample size of 1,000, the researcher knows that 430 males and 570 females will need to be interviewed from that population.

  Advantages of quota sampling: Advantages of quota sampling are-(i) It is relatively less expensive (ii) Convenient (iii) Requires less time (iv) does not require sampling frames.

  Disadvantages of quota sampling: Disadvantages of quota sampling are- (i) sample is not a true representative of the population (ii) presence of biasness of the interviewer (iii)amending results through a formal statistical way is not possible (iv) is not always fruitful in case of field works.



CHECK YOUR PROGRESS

Q 7: What is meant by quota sampling?

Answer in about 40 words.

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- **Snowball Sampling**

Snowball sampling is the process of selecting a sample using networks. It is also referred to as 'chain-referral' sampling. The researcher would first approach the respondents he/she knows and is available to him. As such, a few individuals in a group or organization are selected and the required information is collected from them. Then, these people provide references about other individuals they know who fall under the criteria of the researcher. Thus, they are asked to identify other people in the group or organization, and the people selected by them become a part of the sample. Information is collected from them, and then these people are asked to identify other members of the group and, in turn, those identified become the basis of further data collection. This process is continued until the required numbers of respondents have been interviewed or no other respondents are discovered. In other words, till the saturation point has been reached, in terms of data collection, the process of snowball sampling continues.

Advantages of snowball sampling: This sampling technique is useful if we know little about the group or organization we wish to study, as we need only to make contact with a few individuals, who can then direct us to the other members of the group. This method of selecting a sample is useful for studying communication patterns, decision making or diffusion of knowledge within a group. Researchers can collect data

from people who would have been otherwise difficult to approach. It is also economic in terms of cost and time, since it does not need to hire any extra research team for the purpose.

Disadvantages of snowball sampling: Firstly, the choice of the entire sample rests upon the choice of individuals at the first stage. If they belong to a particular faction or have strong biases, the study may be biased. Secondly, it is difficult to use this technique when the sample becomes fairly large. Thirdly, in this method it is difficult to determine sampling error. Fourthly, here we are not really sure about the size of the population and hence fixing a sample size becomes difficult. Moreover, the sample chosen might not always be the true representative of the population.

- **Volunteer Sampling**

In this method, the respondents himself/herself volunteers to give information he has. This implies respondents self-select to become a part of the sample. For example- if a researcher wants to study about the number of beneficiaries of a government policy and publishes it in newspapers with a contact number to send details, and people who have been benefited reply to it on their own, it would be an instance of volunteer sampling.

Advantages of volunteer sampling: Although this method is very rarely used, it has many advantages over the other methods. It is considered to be more ethical because respondents approach the researcher and provide information willingly. While doing so, generally they are not bias and speak the truth. Moreover, it is convenient and easy for the researcher since it involves no cost in approaching respondents for data collection.

Disadvantages of volunteer sampling: Sometimes, the sample chosen may not be representative of the population. As a result, there may be biasedness since the researcher makes little effort to control the sample composition, it includes only those respondents who voluntarily come forward. In this process most of the genuine respondents might be left from the sample.



CHECK YOUR PROGRESS

Q 8: How is the sample selected in purposive sampling? (Answer in about 60 words.)

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8.5 LET US SUM UP

- In any field of inquiry, we have a 'universe' or a 'population' which consists of all the items or individuals related to a certain area of study. A population can be an entire class of student, the total number of people residing in a district, the available commercial products in the market, all patients in a hospital, total number of households in a village, all the workers of a factory, and so on.
- Sampling is the process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group. A sample is a subgroup of the population you are interested in.
- The main principle behind sampling is that we get to know about the total units by observing a few units and extend our inference about the sample to the entire population.

- Basically, there are two types of sampling methods- probability sampling and non-probability sampling. In this unit, you will learn about the former and its types. In probability sampling every unit of the population has an equal and independent chance of being selected for the sample. Whereas, in non-probability sampling every unit does not have the equal chance of getting selected in the sample, rather the selection of units for the sample depends upon the researcher.
- Simple random sampling, stratified sampling, systematic sampling and cluster sampling are the types of probability sampling.
- The stratified method of sampling is generally used when the population does not constitute a homogeneous group. According to this method of sampling, the population is divided into several sub-population or sub-groups called 'strata' having common characteristics. From each stratum, items are selected to make the sample for the study.
- Non-probability sampling is that sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Non-probability sampling is also known by different names such as deliberate sampling, purposive sampling and judgment sampling.
- The prime difference between probability and non-probability sampling is that in the former type each of the units of a population has the equal opportunity to get selected in a sample, whereas in the latter type sample is drawn based on some condition or willingness of the researcher, hence all the units of the population do not have a equal chance of being included in the sample drawn.

- There are five types of non-random sampling or non-probability sampling methods- convenience sampling, purposive sampling, quota sampling, snowball sampling and volunteer sampling.
- Convenience sampling is also known as 'accidental' sampling. It depends upon the convenience of the researcher in finding the sample. As such, the researcher considers the people readily found in that instant for his/her sample.
- Purposive sampling is also known as 'judgemental sampling'. Here, the researcher makes a judgement as to who would be the best one to include in the sample in order to get the desired responses. As such, he approaches only those people who can provide him with the information he is searching for.
- Quota sampling is similar to stratified sampling with the only difference that in stratified sampling, population is divided into strata and units from each stratum are drawn randomly for the sample. Whereas, in quota sampling, there are certain fixed quotas based on which the sample is selected. The choice of the respondents is completely left to the interviewer.



8.6 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.

8.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: A 'population' consists of all the items or individuals related to a certain area of study. A population can be an entire class of student, the total number of people residing in a district, the available commercial products in the market, all patients in a hospital, total number of households in a village, all the workers of a factory, and so on. Whereas, a sample is a subgroup of the population we are interested in.

Ans to Q No 2: Sampling is the process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group.

Ans to Q No 3: If sample size selected for study is very small or due to non-representative nature of the sample, the estimated results may differ from the actual results. These are called sampling errors. Sampling errors can be reduced by increasing the sample size.

In probability sampling every unit of the population has an equal and independent chance of being selected for the sample. Whereas, in non-probability sampling every unit does not have the equal chance of getting selected in the sample, rather the selection of units for the sample depends upon the researcher.

Ans to Q No 4: Probability sampling is also known as 'random sampling' or 'chance sampling'.

Ans to Q No 5: Non-probability sampling is that sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Non-probability sampling is also known by different

names such as deliberate sampling, purposive sampling and judgment sampling.

Ans to Q No 6: In probability sampling, each of the units of a population has the equal opportunity to get selected in a sample, whereas in non-probability sampling, the sample is drawn based on some condition or willingness of the researcher, hence all the units of the population do not have an equal chance of being included in the sample drawn.

Ans to Q No 7: Quota sampling is similar to stratified sampling with the only difference that in stratified sampling, population is divided into strata and units from each stratum are drawn randomly for the sample. Whereas, in quota sampling, there are certain fixed quotas based on which the sample is selected.

Ans to Q No 8: In purposive sampling, the researcher makes a judgement as to who would be the best one to include in the sample in order to get the desired responses. As such, he approaches only those people who can provide him with the information he is searching for.



8.8 MODEL QUESTIONS

Long Questions. (Answer each question in around 300-500 words)

Q 1: Define sampling. State the advantages and disadvantages of sampling.

Q 2: Explain the characteristics of a good sample design.

Q 3: Differentiate between probability and non-probability sampling with examples.

Q 4: What is simple random sampling? Explain with examples.

Q 5: State the advantages and disadvantages of simple random sampling.

Q 6: What are strata? Give examples.

Q 7: Highlight the prime differences between probability and non-probability sampling techniques.

Q 8: Explain the types of non-probability sampling with appropriate examples.

Q 9: Explain the advantages and disadvantages of non-probability sampling techniques.

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