

RESEARCH METHODS IN RURAL DEVELOPMENT

**Discipline of Rural Development
School of Continuing Education
Indira Gandhi National Open University**

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BLOCK 1
RESEARCH IN RURAL DEVELOPMENT



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BLOCK 1 INTRODUCTION

Block 1, research in rural development, will introduce you to the fundamentals of rural development. The units in this block have been carefully chosen to introduce you to various research techniques applied to empirical inquiry. You can use these techniques as you plan and execute your dissertation for your master's degree in rural development.

Unit 1, 'Introduction to Research: Purpose, Nature and Scope,' will describe what is scientific research and how it is different from research. Further, this unit will introduce the conceptual foundations of scientific research, i.e., facts and theory, the relation of hypothesis with facts and theory and processes of theory building. This unit will depict how scientific methods will be used in social science research and the limitations or possibilities of the uses of scientific methods in social science research. This unit will also talk about complexities in observation as a method where the ambiguities between the observer and its subject are the main barrier in scientific research. This chapter ends with describing exploratory, diagnostic and evaluative research in rural development.

Unit 2, 'Research in Rural Development: Regional and National Perspectives,' included a wide range of topics relating to both natural and human resources in rural development. This chapter groups the areas of research in rural development such as rural development, voluntary actions in rural development, integrated rural development programmes, development of women and children in rural areas, employment-generating programmes, area development programmes, rural infrastructure development fund, public distribution system, labour and wages, the status of employment, agricultural wages, education, health, social development, Gokul gram yojana, integrated wasteland development and various other schemes.

Unit 3, 'Research Process I: Identification and Formulation of the Research Problem,' discusses the selection, definition, statement, and evaluation of research questions, as well as the formation of hypotheses in various types of research. In this unit, we will learn that inductive or deductive methods, analogies, consultations, etc., can be used to derive a hypothesis. A strong hypothesis must make a prediction, be straightforward and unambiguous, and indicate the anticipated relationship between the variables. A hypothesis may be expressed in the question, null, or declarative form. Depending on the needs of various forms of research, such as experimental research and descriptive research, hypotheses are formed and articulated in different ways.

Unit 4, 'Research Process II: Preparing a Research Proposal,' is a continuation of unit 3. It discusses the six main stages of the research process: problem selection and formulation, hypothesis development, study design selection, data collecting, data analysis, and interpretation and generalisation. There are numerous research activities at each level that can be pursued gradually. In a research proposal, these actions are described in detail. Students should remember that the many processes involved in a research endeavour are not separate or exclusive. They do not always follow one another in any particular order. Thus, the researcher must constantly anticipate the needs of the upcoming phases at every stage of the research project.

UNIT 1 INTRODUCTION TO RESEARCH: PURPOSE, NATURE AND SCOPE

Structure

- 1.0 Introduction
- 1.1 Objectives
- 1.2 Meaning of Research and Scientific Research
 - 1.2.1 Research
 - 1.2.2 Scientific Research
- 1.3 Conceptual Foundations of Scientific Research
 - 1.3.1 Facts and Theory
 - 1.3.2 Hypothesis and its relation with facts and theory
 - 1.3.3 Theory as Tool of Research
 - 1.3.4 Process of Theory-building
- 1.4 Scientific Approach
 - 1.4.1 Use of Scientific Method in Social Science Research
 - 1.4.2 Possibilities and Limitations of Use of Scientific Method in Social Sciences
 - 1.4.2.1 Complexity of Subject Matter
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 - 1.6.1 Characteristics of Research
 - 1.6.2 Types of Research
 - 1.6.2.1 Fundamental Research
 - 1.6.2.2 Applied Research
- 1.7 Scope of Research in Rural Development
- 1.8 Let Us Sum Up
- 1.9 Check Your Progress: The Key

1.0 INTRODUCTION

Research is a process by which one acquires reliable, valid and meaningful information about a phenomenon. It may be broadly defined “as a systematic

inquiry towards understanding a complex social phenomenon”. Research is a scientific approach to acquire reliable knowledge. The most important characteristic of this approach is its thrust on objectivity. In this unit, we will discuss the question how far the scientific approach is useful in studying the problems of the society, how can we acquire reliable knowledge about various aspects of human experience with the help of this approach and how far this approach be valuable in understanding social phenomena? In this unit, our approach would be first, to understand the meaning of the terms ‘research’ and ‘scientific research’, to examine the nature of scientific method, its application in social science research and its assumptions and finally to take a close look at the approach to find out how it can help the rural development professionals to understand the problems of rural development.

1.1 OBJECTIVES

On the completion of this unit, you should be able to :

- explain the meaning and importance of research;
- state the purpose of research;
- describe the nature of research; and
- identify the areas of rural development in which research is being increasingly undertaken.

1.2 MEANING OF RESEARCH AND SCIENTIFIC RESEARCH

1.2.1 Research

When we observe certain objects or phenomena, we are often unaware of our biases, we do not question them and so we attribute our observations entirely to the objects or phenomena being observed. In this process, it is possible to arrive at right decision on the basis of wrong reasons or vice versa. This questions the process of observation. Was the observation error free? Every method of knowing has certain limitations. While observing are we aware of our limitations? Any study to create new knowledge or aims to increase existing fund of knowledge may it be through observation or by some other methods, is called research if it takes into account the biases, the errors and limitations in order to arrive at objectivity. As such, research may be described as systematic and critical investigation of phenomena toward increasing the stream of knowledge.

Research in rural development is the application of research methods to the production of knowledge that rural development professionals need to solve problems they confront in the practice of rural development. The knowledge is useful in appraising the effectiveness of methods and techniques of rural development. It provides information that can be taken into consideration by

development professionals prior to making decisions, that affect their clients, programmes, services or agencies such as use of alternative intervention techniques or change or modification of programme/client objectives and so forth.

Following are some of the examples where research methods are used in rural development:

- a community worker is interested in obtaining information about the actual or potential effectiveness of the individuals, couples or families in a rural community,
- a group worker wishes to assess the extent to which a technique of research plays an effective role the group discussion to increase knowledge of members of a self-help group;
- a community organizer wants to know the views of the community before he/she takes a decision to change the programme objectives;
- the director of a community welfare centre wants to know whether an income generation scheme is as effective as a self-help group in enhancing women's empowerment; and
- an administrator is concerned about effectiveness of implementation of new programme launched and therefore, the administrator may like to use knowledge generated by research in the process of implementation. These are some of the situations, which call for application of research methods and techniques in rural development.

Research offers an opportunity for all development professionals to make differences in their practice. There is no doubt about the fact that development professionals will be more effective practitioner guided by the findings of research. Research deals with those methods and issues, which are useful in evaluating programmes and practices.

1.2.2 Scientific Research and Scientific Method

Science aims at analysis, description, explanation and understanding of various problems. Research is a special endeavour which involves systematic and critical investigation in order to increase the quantum of objective knowledge. It is easier to define scientific research. It is a "systematic and critical investigation of the problems in order to arrive at objective knowledge. It is scientific because it is orderly undertaken. There are a number of scientific methods which are used in scientific research. All of them are scientifically used to arrive at objective knowledge. The human and subjective peters are not taken into account in the application of scientific methods.

Check Your Progress 1

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

- 1) Explain the nature of ‘scientific research’ and ‘scientific method’. Illustrate your answer with examples from the area of rural development.

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1.3 CONCEPTUAL FOUNDATIONS OF SCIENTIFIC RESEARCH

1.3.1 Facts and Theory

Social sciences primarily deal with human behaviour, which is, by and large, complex and dynamic in nature. One cannot, therefore investigate under guided conditions as in natural and physical sciences. This creates many problems to the researcher such as the problems of subjectivity and individualistic generalisations etc.

Scientific research starts with facts and then moves towards theorising. To be useful, facts must be organised, and the primary purpose of the scientific method is to develop a mechanism of organising the facts, as they accumulate, and become meaningful from the standpoint of their objectives. Through empirical investigations, scientists gather many facts. As these facts accumulate, there is a need for integration, organisation, and classification in order to make the isolated findings meaningful.

When isolated facts are put in a perspective by integrating them into a conceptual scheme, which promote greater understanding, we approach the domain of science. This makes it is clear that the facts have been already put in proper scientific perspective. Significant relationship in the data must be identified and explained. In other words, theories must be formulated. Theory may be defined as “a set of interrelated constructs (concepts), definitions and propositions that present a systematic view of a phenomena by specifying relations among variables, with the purpose of predicting and explaining the phenomena(Kerlinger,1973).

Theory knits together the results of observations, enabling scientists to make general statements about variables and relationships among variables. For example, in Boyle’s Law, a familiar generalization summarizes the observed effects of change(s) in temperature on the volumes of all gases by the

statements – “When pressure is held constant, temperature of gas increases and its volume is increased but when the temperature of gas decreases, its volume is decreased”. This statement of theory, not only summarizes previous information but also predicts other phenomena by telling us what to expect of any gas under any change(s) in temperature.

Just as fact underlies theory, theory underlie facts – each raising the other like a spiral to an increasingly precise scientific formulation. Facts derive their significance from theoretical framework into which they bring facts into focus. This is well stated by Van Dalen (1973).

“.... there is a constant and intricate relationship between facts and theory. Facts without theory or theory without facts lack significance. Facts take their significance from the theories which define, classify and predict them. Theories possess significance when they are built upon, classified, and tested by facts. Thus, the growth of science is dependent upon the accumulation of facts and the formulation of new or broader theories.”

This is particularly true in the early stages of scientific development, since in its early stage, research must confine its efforts to seeking answers to highly specific and particularised problems. In the later stage, it tends to strive towards unity by breaking down the very barriers that had made its earlier progress possible. Scientific theories attempt to organise the tiny, rigorously defined bits of knowledge into a more meaningful and realistic structure. This is precisely the function of theory.

1.3.2 Hypothesis and Theory

A hypothesis, when accepted, explains a small number of facts and the relationship between them. Generalization, as the term denotes, is a hypothesis based on broader phenomena. Theory explains even more facts and their inter-relations. Theories themselves range from the simple to the more sophisticated reality of facts. Finally, a theory is a proved hypothesis and thereafter, it becomes a law or a general principle.

In spite of the strong case that has been made for the role of theory in research, it will be appreciated that a theory has to be amended or abandoned when the discovery of new facts can no longer accommodate it. Alternatively, it may be subsumed by a wider, more embracing theory when it is realized that the situation which is contained by the theory is one instance of a more general case. Theories generated by the means that we have indicated, do not lead to ‘eternal truth’; rather, they should be looked upon as useful conceptual frameworks which are adequate for present purpose or a given situation. Thus every theory is subject to modification as and when we get new facts and evidence that contradict the generalizations made earlier. Both the theory and the poet are closely interlinked. They affect each other.

1.3.3 Theory as a Tool of Research

There are several purposes to be served by a theory in the development of science. We shall briefly consider three of them here. First, theory summarizes and puts in order the existing knowledge in a particular area. It permits deeper understanding of data and translates empirical findings into a more easily retainable and adaptable form. The theory of oxidation, for instance, places into focus many of the chemical reactions common to everyday life.

Secondly, theory provides a final explanation for observed events and relationships. It identifies the variables that are related and the nature of their relationships. A theory of learning, for example, could explain the relationship between the speed and efficiency of learning and such other variables as motivation, reward and practice.

Lastly, theory permits the prediction of the occurrence of phenomena and enables the investigator to postulate and, eventually to discover hitherto unknown phenomena. At the time when the 'Periodic Table' was being completed, for instance, certain gaps were noted in the sequence of the elements. Since, theory provides uniformities, scientists try to look for the other missing elements. Theory, therefore, stimulates the development of new knowledge by providing space for further inquiry. Theory can be used as a tool of further research. It is system of deduction of relevant propositions to be tasked again.

1.3.4 Theory-building process

It is important to stress that good theories are not born out of imagination, they do not originate merely through arm chair reflection. A theory is built upon collected facts. The investigator then searches, makes intelligent guesses as to how the facts are ordered, adds missing ideas or links, proves hypothesis and puts forward a theory. From a theory built, hypothetical statements can be deduced to look for further facts which are consistent or otherwise with the deductions made to build a wider generalization. Various concepts used to classify and order facts consist of the conceptual framework of the theory. Theories are entirely based on facts or evidences. They are important practical tools which enable us to advance our knowledge.

Theories always involve terms which refer to concepts in the light of which facts are to be observed. The terms or concepts of a theory are referred to as constructs which implies imagination of the scientists. However, the theory-building is a process and a theory built is a proved hypothetical proposition. It plays important role on scientific research because it can be used by the scientist as a tool of further research as it is a logic-directive system of research. A theory is a beginning and the end of scientific research if it is properly conceived and used.

Check Your Progress 2

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

1) Describe briefly the role of theory in scientific research.

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1.4 SCIENTIFIC APPROACH

It is obvious that it would be impossible to comprehend the nature and content of research without an appreciation of a method. The method used in scientific research is usually designated as scientific because it consists of three basic steps: systematic hypothesis formulation, systematic observation, systematic collection, classification and interpretation of facts. With these steps, scientific method brings about not only verifiability of the facts, but also it lays the confidence in the validity of conclusions (Lundberg, 1946).

Further, Lundberg (1946) says that scientific method consists of systematic observation and scientific investigation. It aims at discovering facts as they actually are and not as they are desired to be and as such the investigators can have critical confidence in their conclusions. Second, the scientific method consists of objectivity, universality and predictability. It makes it possible to predict about a phenomenon with sufficient degree of accuracy.

1.4.1 Use of Scientific Method in Social Science

Social sciences primarily deal with human behaviour, which is, by and large, complex and dynamic in nature. One cannot, therefore investigate the human behaviour under guided conditions as in natural and physical sciences. This creates many problems to the researcher such as the problems of subjectivity and individualistic generalizations, etc.

The problem arising out of the nature and content of social sciences does not seriously diminish the importance of scientific method in social research. The scientific method can be acceptable for the study of social phenomena so far as, it helps to arrive at valid generalizations.

1.4.2 Possibilities and Limitations of Use of Scientific Method in Social Sciences

As described above, the social sciences deal with human beings. Hence, the subject of educational research poses much greater complexity than that in natural sciences. The usual criticism is that social science research largely emanates from ill conceived notion of research and its application in complex

human setting. The social researcher needs the wisdom to choose research methodologies that are responsive to the problem. This is in contradiction to the obsessive use of complex quantitative method. The issue is that of a careful balance between quantitative and qualitative techniques of research depending on the nature of the problem, sample and the nature of the data.

Although, the problems of discovering principles of human behaviour are many but they are not difficult to resolve. Social scientists will need to carry out observations as carefully as are done in natural sciences. The subjective and qualitative judgments need to be supplemented by more exact and quantitative measurements which are not so easy to achieve in the case of the study of human behavior. This is a drawback in social research. Whereas, exact sciences tend to become increasingly quantitative in their units, measures and the terminologies. In social sciences, most of the matter is qualitative and does not approve easily the quantitative analysis.

Research adopts both quantitative and qualitative analyses of facts. Social sciences have not been able to establish generalizations equivalent to theories of the natural sciences to predict events accurately. Perhaps, social sciences may not realise the objective of science as completely as natural sciences do. In fact, there are several limitations involved in the application of the scientific approach in social sciences. Let us try to explain those limitations.

1.4.2.1 Complexity of Subject Matter

A major obstacle is the complexity of the subject matter in social science research. Natural scientists deal with the physical and biological phenomena. A limited number of variables that can be measured precisely are involved in the explanation of many of these phenomena, and it is possible to establish universal laws. For example, Boyles' Law on the influence of pressure on the volume of gases, which deals with relatively uncomplicated variables, formulates the relationship between phenomena that are apparently unvarying throughout the universe.

On the other hand, social scientists deal with the human subjects. They are concerned with the subject's behaviour and development both, as an individual and as a member of a group. There are so many variables acting independently and in interaction, that must be considered in any attempt to understand complex human behaviour. Each individual is unique in the way he or she develops in the personality and in social and emotional behavior. The behaviour of human beings in groups and the influence of the behaviour of group members on an individual differ from context to context. A group of youth leaders in one situation will not behave like youth leaders in another situation. There are youth leaders, their siblings, relatives, and community people, each with variables that contribute to the behavioural phenomena observed in a setting. Thus, researchers must be extremely cautious about making generalisations, since the data obtained in one group situation may not be valid for another group.

1.4.2.2 Difficulties in Observation

Observation as a tool of science is more difficult in the social sciences to conduct than in natural sciences. Observation in social sciences is more subjective because it frequently involves interpretation on the part of the observer. For example, the subject matter for investigation is often a person's responses to the behaviour of others. Motives, values and attitudes are not open to inspection. Observers must make subjective interpretations when they decide that behaviours observed indicate the presence of any particular motive, value or attitude. The problem is that social scientist's own values and attitudes may influence both the observations and the assessment of the findings on which they base their conclusions. Natural scientists study phenomena that require little subjective interpretation.

1.4.2.3 Difficulties in Replication

A chemist can objectively observe the reaction between two chemicals in a test tube. The findings can be reported and the observations can be easily replicated by others. This replication is much more difficult to achieve in social sciences. Even within a community, one cannot reproduce a given situation in its totality with precision. A particular social event is singular at a given point and it cannot be repeated for purposes of observation.

1.4.2.4 Interaction between an Observer and Subjects

An additional problem is that mere observation of social phenomena may produce changes that might not have occurred otherwise. Researchers may think that X is causing Y, when, in fact, it may be their subjective observation that X causes Y. For example, in the well-known Hawthorne experiments, changes in the productivity of workers were found to be not due to the varying working conditions but due to the fact that the workers knew they had been singled out for investigation. Investigators are human beings and their presence as observers in a situation may change the behaviour of their human subjects. The use of hidden cameras and tape recorders may help minimize the interaction in some cases, but much of research in social science includes the responses of human subjects to human observers.

1.4.2.5 Difficulties in Control

The range of possibilities of controlled experiments on human subjects is much more limited than in natural sciences. The complexities involved in research of human subjects present problems in 'control' that are unparalleled in natural sciences. In the latter, rigid control of experimental conditions is possible in the laboratory. Such control is not possible with human subjects. The social scientists must deal with many variables simultaneously and must work under conditions that are much less precise. They try to identify and control as many of these variables as possible, but the task is very difficult.

1.4.2.6 Problems of Measurement

Experimentation must provide for measurement of the factors involved. The tools for measurement in social sciences are much less perfect and precise than the tools of the natural sciences. We have nothing that can compare with the precision of the ruler, the thermometer, or the numerous laboratory instruments. We have already pointed out that an understanding of human behaviour is complicated by the large number of determining variables acting independently and in interaction. The multivariate statistical devices available for analysing data in social sciences take care of relatively few of the factors that are obviously interacting. Furthermore, these devices permit the researcher to attribute the variance only to factors operating at the time of measurement. Factors that have influenced development in the past are not measurable in the present, and yet they significantly influence the course of development.

Since research in behavioural sciences including research in education is complicated by these factors, researchers must exercise caution in making generalisations from their studies. It will often be necessary to conduct several studies in an area before attempting to formulate generalisations. If initial findings were consistently confirmed, then, one would have more confidence in making broad generalisations.

Despite these handicaps, social sciences have made great progress, and their scientific status can be expected to increase as scientific investigation and methodology become more systematic and rigorous in their research activities.

Check Your Progress 3

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

- 1) Describe briefly the limitations of use of scientific method in social sciences.

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1.5 CLASSIFICATION OF RESEARCH

Though each research study has its own specific purpose, we can classify research studies by its purposes into the following categories:

1.5.1 Exploratory or Formulative Research

Studies are known as exploratory or formulative research when they aim at gaining familiarity with a phenomenon, to achieve new insights into it, to formulate a more precise research problem or to develop hypotheses.

1.5.2 Descriptive Research

The research studies which are intended to portray accurately the characteristics of a particular situation or a group or individual are termed as descriptive research. The chief purpose of these studies is to describe reality. Descriptive researches, for example, might deal with such questions as, what are people's attitudes toward development, what is the extent of child labour, or how many people avail the services of the primary health centres?

1.5.3 Diagnostic Research

Diagnostic studies are concerned with determining the frequency with which something occurs or with which it is associated with something else. That is, these studies are concerned with discovering and testing whether certain variables are associated, for example, do more rural people vote for a particular political party than the urban people or whether the students with public school background are better placed in jobs than those who do not come from that background of schooling.

1.5.4 Evaluative Research

Evaluative research focuses on evaluation or monitoring of programmes/services to determine whether and to what extent they have achieved their goals and whether they did so in the less costly or most expensive fashion. Evaluation research can also determine whether a programme has unintended consequences that are either desirable or undesirable (Monette, et.al., 1986).

Check Your Progress 4

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

1) Explain the types of research with suitable examples.

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1.6 NATURE OF RESEARCH

Research, as explained earlier, is systematic and scientific investigation of a phenomena. It identifies the variables, collection and analysis of data in order

to find answers to certain crucial questions. These answers contribute to increase human knowledge. Orderliness and objectivity are the hallmarks of research. Research has to have an organic unity. The knowledge produced through research needs to be verified. In fact, research is considered to be a formal, systematic, intensive process of carrying on the scientific basis of analysis. It involves a more systematic structure of investigating, usually resulting in some sort of formal record of procedures and results or conclusions.

1.6.1 Characteristics of Research

The major characteristics of any research are: objectivity, reliability and verifiability, precision and design of research. Let us look at these characteristics.

Objectivity: Ideally, research is beyond the subjective bias of the researcher. The researcher makes deliberate efforts to eliminate personal preference resisting the temptation to seek only such data that supports his / her hypothesis. The emphasis is on testing the hypothesis. The researcher is willing to suspend personal judgment and permit the data and logic to lead independently to a sound conclusion. Objectivity is achieved through standardization of research instruments, choosing appropriate research design and analytical tools and ensuring dependability of data.

Reliability and Verifiability: This is an important characteristic of every research. Research methods and findings presented to the professional community for other researchers to analyse, confirm or reject them. Research is a social enterprise and its information is open for public scrutiny. This characteristic of research, i.e. verifiability, is related to the criteria of objectivity and precision. Only through further investigation or replication of studies can the results of a single study be confirmed or revised. Through this process, a body of new knowledge is developed and new questions identified. Reliability is obtained by repeating the results to ensure consistency and to ensure the responses to be true.

Precision: Precision in scientific research is achieved through the uses of statistical methods and techniques. As such, research conclusions convey the exact meaning to the reader, e.g. measures of central tendency, variability, reliability, correlation, regression etc. are the most precise expression in quantitative research which explains or represents the truth. Precise language describes the study accurately so that the study may be replicated or the results correctly used.

Design: In a scientific research, the researcher has to have a very specified design of carrying out the investigation. This will simply mean that any scientific inquiry will, in general, undergo the following steps:

- defining of the problem,
- statement of the hypothesis,

- collection and analysis of data,
- testing and confirmation or rejection of hypothesis, and
- reporting of results.

Only if the research has been carried out by using a specified process, it can be replicated for verification:

Verifiability is achieved primarily through two different approaches: first, analyzing the same data on the same sample through alternative analytical tools (statistical methods), second, replicating the study on a different sample.

1.6.2 Types of Research

Research studies may be broadly classified into two categories, namely, fundamental or basic research, and applied research. This classification is based on the goal or objective of the research study.

1.6.2.1 Fundamental Research

This type of research aims at obtaining the empirical data that can be used to formulate, expand or evaluate a theory. This type of research study is not oriented in design or purpose towards the solution of practical problems. Its essential aim is to expand the frontiers of knowledge without any intention of practical application. Of course, the findings may be eventually applied to practical problems that have social value. For example, advances in the practice of medicine are dependent upon basic research in biochemistry and microbiology. Likewise progress in rural development has been related to progress in the discovery in the general laws of development through basic research in economics and sociology. The primary concern of basic research, however, is not only the creation and growth of knowledge but also for its application.

1.6.2.2 Applied Research

Applied research is directed towards the solution of an immediate, specific and practical problem. This is a research performed in relation to actual problems and under conditions in which they are found in practice. Through applied research, development professionals are often able to solve their problems at the appropriate level of complexity. For instance, to understand group dynamics in a rural setting, we may depend on basic research for discovering more general laws of group dynamics operating in the rural setting, but applied research must be conducted in order to determine how these laws operate in the rural setting. This approach is essential if scientific changes in rural development are to be effected.

It needs to be noted that there is not always a sharp line of demarcation between basic and applied research. Certainly, applications of theory help in solving practical problems. We apply theories of group dynamics in the community. On the other hand, basic research may depend upon the findings of applied research to complete its theoretical formulations. An experiment in

group dynamics in a community could shed some light on a group dynamics theory. Furthermore, observations in a practical situation serve to test theories and may lead to the formulation of new theories.

Check Your Progress 5

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

1) Describe the two types of research studies?

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1.7 SCOPE OF RESEARCH IN RURAL DEVELOPMENT

Research re-examines the existing body of knowledge, concepts and theories and tries to evolve a systematic theory and valid concepts. In the area of rural development, research is conducted to know the efficacy of different programmes of rural development so as to search for alternate strategies /interventions for effective implementation of the programmes.

Identification of needs and resources, evaluation of programmes and services in the areas of rural development of governmental and non-governmental organizations/agencies are some of the areas in which researches are undertaken. Research maybe conducted to find out the problems faced by development professionals / workers in governmental and non-governmental organizations/agencies and communities in its concern for rural development. Thus, research in rural development embraces the entire gamut of rural development; concepts, theories, methods, programmes, services and the problems faced by development professionals / workers in their practice.

The broad areas of research in rural development may be categorized as follows:

- i) Village as a Community,
- ii) Class, castes and occupational patterns,
- iii) Rural economy,
- iv) Land reform measures and its effects,
- v) Peasant movements,
- vi) Self-help groups and women's empowerment,
- vii) Watershed management,

- viii) Rural poverty,
- ix) Poverty alleviation,
- x) Panchayati raj System,
- xi) Cooperative movements, etc.
- xii) Entrepreneurial activities,
- xiii) Rural change, development and modernization.

In each of the broad areas listed above, a number of research topic could be identified. Some examples are:

- 1) Studies to identify and assess the developmental needs of rural community.
- 2) To measure the effectiveness of existing programmes and services.
- 3) To evaluate the programmes and services of rural development.
- 4) To assess the efficacy of methods and techniques of offering programmes and services.
- 5) Studies in methodology of rural development.

The list is not exhaustive, it's only an exemplary list which enlists broad areas which are very frequently studied by social workers.

Check Your Progress 6

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

- 1) Identify the basic areas of research in rural development and explain them briefly.

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1.8 LET US SUM UP

Any study to create new knowledge aims to increase existing fund of knowledge. It is possible through observation or by some other methods of research. The scientific research is a systematic, systematic and critical investigation of the phenomena in order to describe, explain and finally understand them and their relations.

Scientific research starts with facts and then moves towards theorizing. Theory may be defined as “a set of interrelated constructs (concepts),

definitions and proposition that present a systematic view of a phenomena by specifying relations among variables, with the purpose of predicting and explaining the phenomena.

There are several purposes to be served by a theory in the development of scientific knowledge. First, theory summarises and puts in order the existing knowledge in a particular area. Secondly, theory provides a provisional explanation for observed events and relationships. Lastly, theory permits the prediction of the occurrence of phenomena and enables the investigator to postulate and, eventually discover unknown phenomena. A theory is a logies-deductive system. Its proper use depends on the scholarship of the researcher. Scientific method consists of three basic steps: systematic observation, classification and interpretation of data.

We can classify research studies by its purposes into the following categories: Exploratory or Formulative Research, Descriptive Research, Diagnostic Research and Evaluative Research.

The major characteristics of any research, are objectivity, precision, design and verifiability. Broadly, research studies are of two types: Fundamental or Basic Research and Applied Research. The major aim of Fundamental or Basic Research is to expand the frontiers of knowledge without any intention of practical application. Applied research is directed towards the solution of an immediate, specific and practical problem.

1.9 CHECK YOUR PROGRESS: THE KEY

- 1) Any study to create new knowledge aims to increase existing fund of knowledge, may it be through observation or by some other methods of research. As such, research may be defined as systematic and critical investigation of phenomena toward increasing the stream of knowledge. We may define scientific research as a systematic and critical investigation about the phenomena to describe, explain and finally to understand them and their relations.
- 2) Theory summarises and puts in order the existing knowledge in a particular area. It permits deeper understanding of data and translates empirical findings. It also provides a provisional explanation for observed events and relationships. Theory permits the prediction of the occurrence of phenomena and enables the investigator to postulate and, eventually, to discover unknown phenomena. Theory, therefore, plays a significant role in scientific research by providing a sound theoretical framework for further inquiry.
- 3) There are several limitation involved in the application of the scientific method in social sciences. Some of the important limitations are: complexity of subject matter, difficulties in observation, difficulties in replication, interaction between an observer and subjects, difficulties in control and problems of measurement.

- 4) Research studies can be classified by its purposes into four categories, namely, exploratory or formulative, descriptive, diagnostic and evaluative researches.
- 5) Research studies may be broadly classified into two categories, namely, fundamental or basic research and applied research. The major aim of Fundamental or Basic Research is to expand the frontiers of knowledge without any intention of practical application. Applied research is directed towards the solution of an immediate, specific and practical problem.
- 6) The broad areas of research in rural development may be categorised as follows:
 - i) Village as a Community,
 - ii) Class, castes and occupational pattern,
 - iii) Rural economy,
 - iv) Land reform measures and its effects,
 - v) Peasant movements,
 - vi) Self-help groups and women's empowerment,
 - vii) Watershed management,
 - viii) Rural poverty,
 - ix) Poverty alleviation,
 - x) Panchayatiraj System,
 - xi) Cooperative movements.
 - xii) Entrepreneurial Activities
 - xiii) Rural development, changes and modernization.

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UNIT 2 RESEARCH IN RURAL DEVELOPMENT: REGIONAL AND NATIONAL PERSPECTIVES

Structure

- 2.0 Introduction
- 2.1 Objectives
- 2.2 Rural Development
- 2.3 Voluntary Actions in Rural Development
- 2.4 Integrated Rural Development Programme
- 2.5 Development of Women and Children in Rural Areas
- 2.6 Employment Generating Programme
- 2.7 Area Development Programmes
- 2.8 Rural Infrastructure Development Fund
- 2.9 Public Distribution System
- 2.10 Labour and Wages
- 2.11 Status of Employment
- 2.12 Agricultural Wages
- 2.13 Education, Health, Social Development
- 2.14 Gokul Gram Yojana
- 2.15 Indira Awaas Yojana
- 2.16 Integrated Wasteland Development
- 2.17 Integrated Tribal Development Agency
- 2.18 Jawahar Gram Samridhi Yojana
- 2.19 Concurrent Evaluation of Million Wells Schemes
- 2.20 Poverty Alleviation Programmes
- 2.21 District Rural Development Agencies (DRDAs)
- 2.22 Panchayati Raj in Rural Development
- 2.23 People's Participation
- 2.24 Employment Guarantee Scheme
- 2.25 Role of Cooperatives in Rural Development
- 2.26 Socio-Economic Surveys
- 2.27 Let Us Sum Up
- 2.28 Check Your Progress: The Key

2.0 INTRODUCTION

Rural development aims at increasing the opportunities for rural people in respect of health, knowledge and skill development, income and participation in decision-making. It also aims at creating a conducive environment in reducing social and economic inequalities and conflicts by bringing all present and potential natural resources to most optimal use, conservation and development.

Rural Development encompasses a broad spectrum of subjects related to integrated natural and human resources. The research studies available on these areas have to be compiled in an exhaustive manner. The following are research areas in rural development:

- Rural Development
- Voluntary Actions in Rural Development
- Integrated Rural Development Programme
- Development of Women and Children in Rural Areas
- Employment Generating Programmes
- Area Development Programmes
- Rural Infrastructure Development Fund
- The Public Distribution System
- Labour and Wages
- Status of Employment
- Agricultural Wages
- Education, Health, Social Development
- Gokul Gram Yojana
- Indira Awaas Yojana
- Integrated Wasteland Development
- Integrated Tribal Development Agency
- Jawahar Gram Samridhi Yojana
- Concurrent Evaluation of Million Wells Scheme
- Poverty Alleviation Programmes
- District Rural Development Agencies
- Panchayati Raj in Rural Development
- People's Participation
- Employment Guarantee Schemes
- Role of Cooperatives in Rural Development
- Socio-Economic Surveys

In this Unit an attempt has been made to introduce you to different areas of research on rural development. Under each area, a synoptic view of research studies has been projected covering objectives, methodology and findings of the studies.

2.1 OBJECTIVES

On the completion of this Unit, you should be able to:

- analyse the trends of research in rural development in a few selected areas;
- state the different research methodologies used in researches undertaken on rural development;
- list the findings of studies conducted in India and abroad, and
- work out further research priorities in rural development.

2.2 RURAL DEVELOPMENT

Rural development is a broad area of research. There have been several attempts to conduct studies on some selected dimensions of this area. Some of the major research studies on various dimensions of this area were conducted by Richa (2004), Madhu (2003), Krishnakumar (2003), Haloi (2002), Thaha et.al. (2002), Srivastava, Rao (2002), Rao and Shridhar (2002), Badari (2000), Purushothaman (2000), Francken and Bhagat (2000), Acharya (1996); World Bank, (1995a), Mohiuddin; Prasad, Yadapanavar, Achari (1988). The common findings from these studies are that the organisational structures for rural development are generally integrated within a larger system of overall economic growth and social development. Within each approach/strategy or perspective adopted for rural development in these studies, certain overall policy statements are needed on the roles and functions of the organizational structures. However some unique policy making models of regional and national levels are already existing for rural development. There are some diagnostic studies (Mohiuddin, et.al.1988) which were conducted to highlight organisational effectiveness, its strength and weakness and the areas of opportunities for future change and development in rural areas.

Richa (2004) has made an attempt to examine inter-state disparities in rural infrastructure in India and its impact on agricultural development and rural poverty through a cross sectional study of six major states. The study reveals that extreme disparities continue to persist with respect to the availability of economic and social indicators in rural areas at the state level. Correlation and multiple regression analysis have been used to study the relationship between rural infrastructure and agricultural development and rural poverty. Economic and social infrastructure was found to have a strong positive effect on agricultural productivity and a strong negative, effect on rural poverty.

Indicators such as irrigation, rural roads, and institutional credit and rural literacy were identified as being most critical in enhancing agricultural productivity, while in the case of rural poverty infrastructural facilities particularly irrigation, rural roads, post offices, bank credit, educational qualification and literacy were identified as more vital factors. The analysis provides inputs for improving policy initiatives.

The study conducted by Madhu (2003) in Nigeria has drawn international attention. In this study the researcher has made an attempt to examine the role of Institutional Framework for Rural Development Administration. The study reveals that different bodies pursue rural development in most developing countries, and each of them operates with their various defined objectives. Moreover, the author feels that, rather than building up rural development traditions within their national administrative set-up, the countries including Nigeria continue to practice the system of creating ad hoc bodies to implement their programmes of rural development. The result is that neither coordination nor sustainability of rural development is achieved. There is need for a strong institutional framework for the administration of rural development in Nigeria and other developing countries.

Kumar (2003) in his study on decentralised planning and sustainable development examines the decentralised planning exercise undertaken in Kerala with mass participation during the Ninth Five Year Plan. The study tries to examine two water resource harvesting projects undertaken at the local level in the state. Kumar observes that the popular participation has ensured the successful completion of these projects but beyond that the process of decentralised planning raises many questions. In the process of making projects “incentive compatible”, the local bodies are constrained to ignore their preoccupation with considerations of egalitarianism. The study argues that this could probably lead to macro-economic price mechanism making its in direct entry into the pricing of public utilities.

Krishnamurthy (1989) studied the problems and prospects of rural development in the state in terms of structural determinants by identifying the different structures of the rural community in order to understand the resource distribution and control over resources by different groups. The study further examined the familiarity of rural people of different development programmes and identified the felt-needs and aspirations of the different groups.

Chaudhary (1988) was of the opinion that factions and factionalism affect adversely the ongoing process of rural development but he also explored as to how factions can be used for rural development.

Charyulu, et.al. (1988), conducted case studies of rural workers organizers scheme, anti-poverty beneficiary group and voluntary organizations. The socio-economic and political profile of the beneficiaries was examined. The study identified and demarcated the problems of policy, programmes and

organisations. It also examined the relative merits of the schemes and also studied the impact of these schemes on rural poor.

Panda (1988), made an attempt to examine the processes and programmes of rural development in India and to suggest an alternative approach for rural development.

An attempt was made by George et.al. (1988) to compare the rural development schemes in South Asia. The studies were based mainly on secondary data. They examine the strategies of rural development, various programmes implemented in this connection, problems faced in the implementation, administrative structure for rural development and the impact on poverty alleviation in the South Asian region.

Another study undertaken in south, west and east districts of Sikkim examines the problems of rural development in Sikkim with special reference to agriculture and concludes that rural development programme is very much bureaucratic-oriented. (Dasgupta and Sahistaram, 1987).

To assess the impact of rural development on the living conditions among Scheduled Castes and Tribes, Pandey (1989) conducted a study to find out the impact on income, asset distribution, monthly consumer expenditure, nutritional level, indebtedness, capital formation, housing condition and educational level of the scheduled caste and tribal households in the ten sample villages. The study finds that large number of the respondents expressed satisfaction with the development programmes. Study revealed that the impact of development was higher on families near the poverty line when compared to others.

Check Your Progress 1

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

- 1) Identify some of the important areas of research in Rural Development and explain their problems.

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2.3 VOLUNTARY ACTION IN RURAL DEVELOPMENT

A study undertaken by Despande (1987) took an overview of the activities of voluntary organisations engaged in resolving the problems of rural

development in general and development of the rural poor in particular. Highlighting the contributions of voluntary organisations, the researcher explains the activities pertaining to socially deprived castes and communities. He also analysed their contributions in rural development of backward regions.

The study undertaken by Narayana (1988) to examine the organisation and management of voluntary organisations reveals that building up a viable organizational base becomes problematic for most voluntary agencies. The organisational pattern observed is a blend of traditional Indian organisation and western professional organisation.

Arul (1988) studied a voluntary organisation called Association of Seva Farms to examine the role of voluntary actions in rural development. This is a study of the functioning of Association of Seva Farms a voluntary organisation engaged in rural development in Natham block of Tamil Nadu with an intention of drawing lessons for rural development efforts at large. It notes that Association of Seva Farms, helps the people to evolve their programmes resulting in great assortment of schemes. The study also identifies certain lessons for rural development elsewhere.

2.4 INTEGRATED RURAL DEVELOPMENT PROGRAMME (IRDP)

This programme was initiated in 1978 with a view to integrate different activities in a micro-level planning framework at the local, block and district levels in the revised Sixth Plan. However, while the canvas was extended from selected districts to the whole country, the programme was simplified mainly as a small loan-cum subsidy scheme for generating self-employment among families identified below the poverty line, i.e. those whose annual incomes did not exceed Rs. 3500 (1980 prices). Since, there were subsequent alterations in the Seventh and Eighth Plans, it was decided to refinance some of those families who had not been able to cross the poverty line and up to 30 per cent coverage was to be made for women because this was a family targeted programme. The investment output ratio was raised to exceed 2.5-3 against 1.5 in the Sixth Plan and investment schemes were diversified to include rural industries and occupations. The cost of the programme was equally shared between the Centre and states.

Rath (1995) studied the programme and critically evaluated the scheme. He questioned the administrative structure of the scheme, the excessive centralization in decision-making and the process of utilization of loan by the poor. He stated that the programme hardly made any impact on the poor as also pointed out by Dreze (1990). These are four studies based on large samples undertaken by the RBI, NABARD, Planning Commission and Institute of Financial Management Research (IFMR). They concluded that the IRDP has been able to impact poor families but these studies found that

there are regional variations as more than half the sample households in each study had received IRDP funds but only 20-50 percent had crossed the poverty line. An overwhelming majority of the respondents expressed satisfaction with the IRDP. Studies done on regional variation revealed that more developed regions and the families near the poverty line showed a better performance when compared to other regions (Subbarao, 1985; Rao and Rangaswamy, 1988 and Kurien 1987). In an elaborate study based on concurrent evaluations in the mid-eighties, concluded that the assistance went to the deserving poor, the communities had adequately participated in beneficiary selection, the assets distributed were sectorally balanced and the record of repayment was done. Kurien's findings show that the data from the concurrent evaluation studies was generally viewed with skepticism. However, the government has admitted that the IRDP has not been as successful as expected since the numbers crossing the poverty line were few and the majority remained below the poverty line (GOI, 1992).

Bogaert and Chank (1987) undertook an action research project and evaluated the effectiveness of the IRD Programme by comparing terminal results with the data of the benchmark survey conducted for this purpose. They observed that economic conditions of the beneficiaries did not improve in a significant manner due to assistance and intervention of the NGOs, poor organizational set-up and the lack of motivation of delivery mechanism.

Balakrishna and Rangacharyulu (1987) conducted an action research on IRDP Monitoring in Vikarabad block of Ranga Reddy district of Andhra Pradesh. The objectives of this action research were to assess the monitoring and compliance of the guidelines for implementation of IRDP, to find out the problems faced in implementation and monitoring and to devise appropriate innovations for effective remedial action. Among the problems recognized in implementation of IRDP include inadequate staff, lack of wholehearted involvement of the borrowers in the activities taken up, conversion of IRDP loans into consumption loans, absence of the extension officer in the block to look after IRDP work and the attitudinal resistance.

A case study of Gulbarga District in Karnataka was conducted by Naik, (1988) to assess the economic impact of IRDP. This study examined the income and employment generation and asset formation under IRDP implemented in Gulbarga district of Karnataka. The study revealed that income, employment generation and asset formation was much below the expected level.

Similar study was undertaken in Kerala state to identify various schemes implemented under social forestry programme and to assess the impact of social forestry programmes on income and employment generation in rural areas and the extent to which these programmes were successful in meeting the basic needs of the rural population (Varghese, 1987). The study has not come out with satisfactory results.

Singh (1987), conducted an evaluation study of Integrated Rural Development Programme in Bichpuri Block, Agra District. The study was based on the data collected from IRDP beneficiaries of block. In all 64 beneficiaries (8 from each selected scheme financed by IRDP) from each popular schemes having at least 15 beneficiaries financed under the IRDP, were selected and interviewed for this study. The study evaluates the impact on the economic status of the beneficiaries financed under IRDP, the financial viability of the selected schemes and identification of the problems of beneficiaries. The analysis shows that by adopting IRDP the average family income of sample beneficiaries. The analysis shows that by adopting IRDP the average family income as a whole improved. The total man-days of employment increased from about 658 in pre-assistance period to about 951 in post-assistance period. On the whole, 39.06 percent of sample of beneficiaries were lifted above the poverty line.

Another study was undertaken in Madurai district of Tamil Nadu with the objectives to find out whether the beneficiaries are provided with substantial assistance under IRDP for generating additional income and to examine the opinion of the people towards official machinery. The study observes that there is an increase in income after IRDP assistance but the official machinery is not very cooperative. It was also observed that majority of people are not aware of various schemes under IRDP (Murugesan and Selvaraj, 1988).

Based on the data collected from Basti (Basti block), Garhwal (Khirsu block), Budaun, (Basauli block) and Etah (Aliganj block) districts of Uttar Pradesh, Verma, et.al., 1988 examined the process of selecting the IRDP beneficiaries, criteria adopted in the selection and the impact of IRDP on scheduled castes and non-scheduled castes beneficiaries. The study shows that effective measures are needed to extend better services.

Selvary, (1987) assessed the impact of IRDP on the socio-economic conditions of the weaker sections of the society in Chengelpattu district of Tamil Nadu and found the similar results.

A study carried out in Meghalaya, Mizoram and Nagaland states to evaluate the performance of IRDP concludes that the programmes are partially successful in these states and only some beneficiaries have been able to come above the poverty line as a result of IRDP implementation (Srivastav, 1988).

As a part of the evaluation of the Integrated Rural Development Programme, Jose (1988) evaluated the effectiveness of IRDP in the case of both 'old' and 'new' beneficiaries but he found inadequacies and shortfalls in IRDP performance in Kerala and Laskshadweep.

A study, carried out by Tharakan, et.al., (1986) in Trivandrum district of Kerala state aims at (i) examining the practice and problems relating to identification of beneficiaries under the programme, adequacy of funds, utilization of loans and repayment performance. They suggest remedial

measures for the improvement in the performance of the programme.

An evaluation study conducted by Basu (1988), covering a sample of respondents from all the twelve districts of the state, highlights the socio-economic features of the IRDP beneficiary families, implementation of the programme and economic levels attained by the beneficiaries. The study notes that the average income generated by the IRDP assets in the state is Rs. 1430 with an average investment of Rs. 3683 per family. Eight per cent of the beneficiary families have crossed the poverty line of 6400 p.a. but 80 per cent of them are still in the process.

A research project undertaken by Sharma (1987) reviews human and physical resource endowments of Dholka and Dhandhuka taluks of Ahmedabad district of Gujarat, assesses the impact of various development programmes on the socio-economic conditions of the people and suggests coordinated development plan for the future.

A research study by Balaji (1986) based on survey and case studies, examines in a holistic manner the principal issues involved in the continuing and complex problems of rural poverty and rural development. The study calls for the effective government involvement in the role of facilitating and enabling the effective functioning of organisations, including well thought out programme of investment in infrastructure and social overheads, improving mechanisms for dissemination of information concerning rural development programmes and procedures, and also enlisting professionals as advisors for tackling rural problems.

Muthayya, et.al. (1987) undertook a study on motivational patterns of different types of beneficiaries of IRDP. This study was conducted in three blocks of Tanjavur, Madurai, Ramanathapuram in Tamil Nadu in order to examine the motivations and aspirations of IRDP beneficiaries and to evolve suitable strategy for the groups of beneficiaries. The study reveals that rural population perceives only land and financial assistance as sources of money but they do not perceive their own personal resources and efforts to earn money to improve their life situation. Although, majority of them have high aspiration to improve their material conditions of living.

2.5 DEVELOPMENT OF WOMEN AND CHILDREN IN RURAL AREAS

Development of Women and Children in Rural Areas (DWCRA), as one of the sub-schemes of IRDP, was initiated in 50 districts in 1982-83 and was expanded to all the districts gradually and continued till 1998-99. The performance of DWCRA had established that group approach centring on women produced better results than individual-oriented schemes of IRDP. However, the results and experiences were not uniformly encouraging across the states. Several evaluation studies pointed out that though the scheme had been conceived well but the concept and philosophy had not been understood

by implementing personnel. Unreliable quantitative performances of the IRDP and its poor qualitative performances have been reported (Rajakutty, 1997).

2.6 EMPLOYMENT GENERATING PROGRAMMES (EGP)

The practice of initiating public works to create jobs for the needy during times of droughts and famines is age-old. In the post-Independence period the earlier experiments of rural works programmes, crash employment programmes and the Pilot Rural Employment Project provided the experience to formally launch the EGS in Maharashtra in 1976, which was the forerunner to the all-India programmes in the 1980s and 1990s. In the 1970s, the urgency to initiate these programmes stemmed from the need to check rural to urban migration during the droughts, but in the 1980s and later, they have been considered to be necessary in combating unemployment among those who are available for work at the minimum wage for unskilled jobs.

The main problems associated with employment generating programmes are somewhat similar to those of the IRDP, despite these being self-targeting unlike the IRDP. Some of the problems are the corruption which is endemic, people's participation is woefully lacking, and estimates of projects are unrealistic, community assets created wither away rapidly both due to lack of upkeep and inaccurate engineering specifications and the wages are too low. Due to such problems, some of the states have tried to diversify the programme. Maharashtra Government has actively linked the EGS activities with infrastructure creation and agricultural development in a village under its 'ideal village scheme' but so far there has been little success. Field observations reveal that guarantees are only on paper; in reality jobs are not provided for weeks for want of funds and bureaucratic indifference. Also, in the absence of any appreciable impact on employment generation, the state is burdened with a sizeable problem of keeping a large contingent on its payrolls which is turning out to be non-viable (Acharya, 1990; GOI, 1992).

Interestingly, there have been few critics of wage programmes unlike the IRDP but none have proposed discontinuing them. There are many who have proposed improvements and expansion in the programme to combat poverty more effectively. Despite all this, the JRY, EAS or any similar state sponsored schemes, which began with a lot of promise, failed to live up to expectation, as beneficiary participation has been missing. Even the EGS in Maharashtra has slowed down after the mid-nineties.

2.7 AREA DEVELOPMENT PROGRAMMES (ADP)

Two major programmes of Area Development are Drought Prone Area Programme (DPAP) and Desert Development Programme (DDP). Rural Manpower Programme of 1978 was redesigned into DPAP and DDP for

mitigating the severity of scarcity conditions by organising NIRD, Hyderabad labour-intensive and production-oriented works through augmenting land and water resources. Watershed approaches have come to be the primary strategies under these programmes.

Since the introduction of watershed approach, land and water conservation and augmentation measures through DPAP, DDP and also EAS received substantial resources. Several Ministries (Agriculture, Rural Development, Environment and Forest) were sponsoring and implementing schemes of this nature. The guidelines and methodology, however, differed. These programmes produced mixed results.

A study of 32 watershed management projects representing 10 major agro-ecological regions spread over 14 states of India showed that such projects are economically sound, socially acceptable and environmentally desirable (Babu and Dhyani 1998 and The Citizens' Fifth Report 1999). Replication of such experiences, however, has been rather slow. The key to the success in all these areas had been the creation of many peoples' institutions at various levels to promote community involvement.

2.8 RURAL INFRASTRUCTURE DEVELOPMENT FUND (RIDF)

In the context of the need for stepping up agricultural growth rate to 4.5 per cent in the Ninth Five-Year Plan, emphasis was considered necessary for developing rural infrastructure in sectors like irrigation, roads, bridges, etc., as an essential requirement for better productivity of capital and labour. However, one of the basic limitations to create adequate infrastructure was lack of resources. Difficult financial position of the state governments, who are mainly responsible for development and maintenance of rural infrastructures has been a cause for concern. It was, therefore, considered desirable to create a fund out of the shortfall in commercial banks' lending for agriculture in the name of Rural Infrastructure Development Fund (RIDF) to be managed and operated by the National Bank for Agriculture and Rural Development (NABARD).

The impact of these projects on the poor, marginal and small farmers of the project were examined by Jose (2001). It was found that, in general, the change in livelihood patterns together with sharing pattern of benefits among various stakeholders was not significant.

2.9 THE PUBLIC DISTRIBUTION SYSTEM (PDS)

The PDS has been a part of the larger food policy, which has all along aimed at reaching inexpensive food to urban dwellers and to rural areas as well. At the same time the growers are offered a minimum guaranteed price and market for their crops so that production is not affected for want of markets and profits.

For procuring food the Government has, with breaks, followed a zoning policy, with restrictions in the movement of food grains. Thus, if surplus is found in, say, Punjab and Haryana, it would be procured there itself and distributed in deficit states rather than permit the grain to find markets at unusually high prices in far away deficit regions. This has reduced the inter-state variation in the availability of food (Suryanarayana, 1995).

In certain situations, 'ensuring physical availability of food' to the rural population is much more important than raising the level of income through poverty alleviation programmes (Suryanarayana, 1995). The next argument relates to price. A rise in food prices erodes the purchasing capacity of the net food buyers, particularly the poor, and hence stability in prices is essential. This is particularly because wages lag behind prices. The opponents find the whole operation beyond the administrative capacity of the Government, as a result the poor do not gain and the subsidies find their way to the corrupt and the undeserving. The underlying dictum that markets provide the highest welfare too is violated. A programme of food stamps has been favoured instead.

Acharya and Parikh, (1996) examined data on utilisation of PDS food from the 42nd round of NSS. His secondary data analysis show that at all-India level about 13 percent of the cereal purchase of a rural household originates from the PDS, it being about 11 per cent for the very poor and about 14 per cent for the non-poor.

Some empirical studies nevertheless show a positive correlation between food subsidy and quantities purchased from the PDS, subsidy and population coverage and subsidy and coverage of the poor (Suryanarayana 1995). Further, it has been found that the urban bias had been somewhat balanced out for sugar and rice, according to calculations made by Dev and Suryanarayana (1995). Revamping the PDS to targeting the arid/semi arid/hilly areas and tribal people in the Field studies show that the schemes are most ineffectively managed in tribal and backward areas because the users are unable to fight for their rights. Their involvement and interest are thus minimal (Acharya and Parikh 1996; World Bank 1996). Thus, like every other top-down programme that aims to target the beneficiaries, the PDS too suffers from similar set of inadequacies.

2.10 LABOUR AND WAGES

Independent studies show that the elasticities of labour absorption in several sectors have fallen in the recent decades. Absorption outside fell in the recent decades. Absorption outside agriculture is becoming increasingly difficult (Acharya, 1993; GOI, 1990). In the 1990s, construction activity, the most labour using sector, too has ceased to grow.

The limited possibility to absorb labour outside agriculture also stems from three interrelated factors. Non-agricultural activities grow more than

proportionately to growth in agriculture (World Bank, 1991), but agriculture itself has not shown a spectacular growth recently, particularly in the 1990s and generally in areas outside some green revolution belts, except perhaps in West Bengal. It is also seen that infrastructure growth has been very tardy, particularly in the rural areas of semi-arid and eastern states. As a result, most non-farm activities are non-viable there. The Rakesh Mohan Committee on infrastructure has been most explicit on this aspect. Governments have had fewer funds to spare for such activities following the fiscal squeeze in the 1990s. Finally, the quality of human resources is poor since basic schooling is yet to reach the hinterland, not to speak of its quality and relevance. It is now established that private rates of return to education are higher at the primary levels in rural areas than in any other category (Acharya, 1996; World Bank, 1995a). Yet, investments in this sector are low and the quality poor. This urban bias and a low priority accorded to spending on social sectors (expenditure on education is less than three per cent of the GDP in India compared to a figure double this in East and South East Asia) is a significant retarding factor in occupational diversification.

2.11 STATUS OF EMPLOYMENT

Casual wage work is the lowest paying occupation and a large number of workers and their households in this work category are below the poverty line (Dubey 1998). This is because, there is large unemployment and underemployment, owing to seasonality of agriculture and its allied activities. The activities are of low intensity, very often not providing work beyond 150 days a year and the wage paid is rarely beyond subsistence. The supply side causes have already been stated: these workers neither command physical resource nor human capabilities.

Literature on this subject is extensive (Vaidyanathan, 1994; Sen, 1994). Some field studies show that as labour intensity rises, the additional labour is hired rather than one's own. There are instances of backward bending supply curve of labour too, particularly of women, in several parts of the country (Acharya, 1992; Jose, 1989). Hired hands working for a wage are not necessarily asset less (Bremen and Mundle, 1991). Others suggest that with increased subdivision of holdings, the number of days of work available on land per worker is lesser—not more than two months each – and workers tend to join the casual labour force, in the vicinity of the village or even away from it (Acharya and Parikh, 1996). Yet others suggest that employment avenues in road building, soil conservation etc. are sustaining increased numbers (Dev, 1995). It is well-established that most small and marginal farmers and the landless workers have a living from more than one source.

2.12 AGRICULTURAL WAGES

Data on agricultural wages compiled by Acharya and Papanek (1995) shows an annual rise in real wages to the extent of 1.5 per cent in every state. A

three per cent growth rate means doubling of the real wage rate every 22 years. This continuous rise in wages, though not spectacular, perhaps explains why poverty proportions have not risen. Trends in wages show a close correspondence with the reduction in poverty proportions, which once again confirms the fact that it is the landless labourers who are the poorest and that a rise in their wages directly reduces poverty. A rapid rise in wages over the period 1975-87, as brought out by Acharya and Papanek (1995), or for the period 1970-85 as brought out in Jose (1988), also coincided with a near 8-15 per cent reduction in poverty over the 1970s and 1980s. The rise in wages slowed in the later period, particularly in the 1990s

2.13 EDUCATION, HEALTH AND SOCIAL DEVELOPMENT

A research study sponsored by the World Bank using household surveys spanning forty years, has demonstrated that continuous efforts towards development of human capital and infrastructure holds the key for poverty reduction (World Bank, 1998).

2.14 GOKUL GRAM YOJANA (GGY)

Gokul Gram Yojana, an innovative rural development programme for economic improvement of rural poor, was assessed by Chatterjee (2002). While highlighting the impact he identified a number of major constraints for effective planning and management of Gokul Gram Yojana.

To prepare a comprehensive development plan of the district using state of the art technology with people's participation using state of the art technology, Thaha, et.al. (2002) undertook a study entitled 'Comprehensive development model plan for a district for a sustainable development'.

2.15 INDIRA AWAAS YOJANA (IAY)

The studies on Indira Awaas Yojana (Vadivelu, 2000, Pancharmukhi, 2000) revealed that beneficiaries are happy to have received the assistance of housing. But there are problems like lack of basic facilities, lack of assistance, payment of bribe and involvement of official in the selection etc. This programme needs to be extended to see the poor irrespective of their social group. Prasad, et.al. 2001 while evaluating the Indira Awaas Yojana found that the status/quality of the houses constructed under the programme was found to be good with adequate space and facility for drinking water.

2.16 INTEGRATED WASTELAND AND DEVELOPMENT

There have been several attempts to conduct studies in this area. Badari (2000), Haloi (2002), Rao (2002), Rao and Shridhar (2001) are some of them.

These studies mainly focused on the problems of inter and intra sectoral co-ordination and linkages in implementations of integrated wasteland development project and suggesting/recommending measures needed for improvement of wasteland strategies. In order to know the impact of watershed management on productivity, equity, employment opportunities, social development and standard of living of rural people, Haloi (2002) undertook impact assessment research (a case study) on the project in Imphal. The common findings from these studies are that the impact of the project on the user groups (farmer beneficiaries) and the areas is not very satisfactory.

2.17 INTEGRATED TRIBAL DEVELOPMENT AGENCY

Srinivas (2001) undertook a comparative study of accessibility of services by advanced (Lambadas) and primitive (Gonds Kolams) tribes across regions of ITDA, Utnoor, A.P. The study explores: (1) The effectiveness of delivery of services to tribals by ITDA, Utnoor, (2) The access to services by the tribals across regions and tribes; (3) The coordination/overlap among various informal institutions such as village tribal development agency, Vana Samrakshana Samithis (VSS – forest protection group), watershed committees, etc. that imping on tribal issues.

2.18 JAWAHAR GRAM SAMRIDHI YOJANA

This scheme has been studied by a number of researchers. Srivastava (2001), Jayalakshmi (2001), Reddy (2001), Sarumathy (2001), Bhaskar Rao (2001) Vittal (2001), Annamalai (2001) are some of them. All these studies basically tried to understand the perception of elected representatives and people at large about the programme and benefits that accrued to the area. Some of these studies also tried to assess the role of Gram Panchayat and Gram Sabha in implementation of the yojana.

2.19 CONCURRENT EVALUATION OF MILLION WELLS SCHEME

Prasad, Kanta et al. (2000), evaluated the Million Well Scheme for Goa. Major findings of the study were:

- 1) Most of the works under project were completed and only a few were underprogress.
- 2) Applications for assistance under Million Wells Scheme were recommended mainly by gram Sabha/panchayat meetings in majority of districts. MWS projects were sanctioned as per beneficiaries' request in all districts.
- 3) No amount was paid by any beneficiary for getting sanction of the scheme.

The study concludes that: the time taken in the disbursement of the sanctioned amount to the beneficiaries varied from one week to more than 3 months as per guidelines. The construction of wells has to be undertaken by the beneficiaries themselves both through their own labour and by hiring local labour. The average increase in the case of income of beneficiaries generated from crop production was Rs. 4,674 in the case of individual beneficiaries and Rs. 6,674 in that of group beneficiaries.

2.20 POVERTY ALLEVIATION PROGRAMME (PAP)

There are number of studies to evaluate the Poverty Alleviation Programmes. Researchers have analyzed the factors underlying the performance, keeping in view the vast regional disparities in the country.

Shah (2001) studied poverty alleviation programmes and critically evaluated the scheme. He questioned the excessive centralization in decision-making and utilization of loan by the poor. He stated that the programme hardly made any impact on the poor. Taking a holistic view, Francken and Bhagat (2000) attempted to examine the influence of social factors (social cohesion within the community) on the development of the area or the village. The study found that there are regional variations: a large number of the sample households had crossed the poverty line. An overwhelming majority of the respondents expressed satisfaction with the programmes. Study revealed that the more developed regions and those families near the poverty line showed a better performance when compared to others (Subbarao 1985; Rao and Rangaswamy 1988). Kurien (1987), concluded that the assistance went to the deserving poor, the communities had adequately participated in beneficiary selection, the assets distributed were sectorally balanced and the record of repayment was no worse than that in other government schemes.

A series of case studies were reported during 1985-1987 by Singh and Tiwari (1987) which broadly examines social, cultural, planning, organisational and behavioural problems affecting the achievement of poverty alleviation. Based on these studies, authors also come out with suggestions for more effective management of the process of poverty alleviation.

The study carried out by Dhoble (1988), in Aurangabad Panchayat Samiti area of Aurangabad district, Maharashtra examines the magnitude and the problems of poverty and analyses the implementation of anti-poverty programmes namely, IRDP, NREP, TRYSEM/SCP. The study concludes that the new strategy of direct attack on poverty has been more effective. However, proper identification of beneficiaries under the programmes and more rigorous implementation of the programmes are suggested to achieve better results.

An empirical study, based on survey method, on Anti-Poverty Programmes in Guntur district of Andhra Pradesh was conducted by Rama Rao (1987). This

study examined the implementation of different anti-poverty programmes and evaluated their impact on the target group. The study found that a large number of the sample households had crossed the poverty line. A majority of the respondents expressed satisfaction with the programmes. Study also revealed that the families near the poverty line showed a better performance when compared to others. Study concluded that the assistance went to the eligible poor.

Another study, conducted by Subramanian (1987) in Karnataka (Tumkur and Mysore districts), Orissa (Puri and Ganjam districts), West Bengal (Puri and Darjeeling districts) evaluates the linkages of block development plans under the Lead Bank Scheme. The study observes that the bankability of the IRDP schemes has not been adequately brought out. Instead of following a piecemeal approach a total view of credit requirements for all programmes should be developed. The credit has been standardized without any relevance to the needs of individuals and schemes. A detailed strategy has to be worked out at the block level and the block credit plans be based on block development plans. The regional considerations need to be taken into account.

The study conducted by Basu, et.al. (1988) in two blocks each, of all the twelve districts in the state of Himachal Pradesh, makes an estimation of quantum of indebtedness among the poorest section and (IRDP beneficiaries) in the rural areas. It is revealed that 36 of the IRDP beneficiaries are under debt which is on an average to the tune of Rs. 2260 (excluding the assistance received under IRDP).

2.21 DISTRICT RURAL DEVELOPMENT AGENCIES (DRDAs)

Studies have been conducted to highlight the management, functional interactions and behavioural manifestations of functionaries of District Rural Development Agencies. Sridhar (1988) enquired into the management of District Rural Development Agencies, their organizational structure and interaction among different organizations. The study, in particular, focuses on functional interactions and behavioural manifestations. Naidu, (1988) and Sastry (1988) studied District Rural Development Agencies (DRDAs) and have described in detail the management (including planning, implementation, monitoring) of the agency, its organizational structure and also operational and structural difficulties. The study also recommends various measures for improving the performance.

2.22 PANCHAYATI RAJ IN RURAL DEVELOPMENT

Introduction of the Panchayati Raj Institutions in 1959 was a landmark in the history of administrative reforms, the follow up action in different states, however, failed to provide a positive direction, particularly, in the realm of

development administration. The spirit of democratic decentralization had evolved over the years and yet is being practiced only in a limited way and could not experience a wholesome sustainability. It was probably this state of affairs which ultimately paved the way for a crucial national agenda on Panchayati Raj reforms, culminating in the 73rd Constitutional Amendment.

The system of Panchayati Raj Institutions consequent to the 73rd Amendment, has been established in almost all the states. While some of the state have regarded the Panchayati Raj Institutions essentially as an organizational set-up emanating from the concept of 'democratic decentralization', other states treated them merely as 'agencies' for the implementation of the rural development programmes. This approach eclipsed the character of elected bodies as units of self-government. In most of the states no serious exercises have been carried out to devolve the powers to the three tiers of Panchayati Raj Institutions in a balanced way, keeping in mind the principle of subsidiary. However some steps had been taken, these were on piecemeal basis. Karnataka, Gujarat, Maharashtra, West Bengal, Madhya Pradesh, Kerala and Himachal Pradesh have done relatively better than other states in terms of transfer of powers to the local self-governments. It was also seen that while wide ranging powers had been conferred on the lower and intermediate tiers, sufficient powers and resources had not been devolved on higher bodies. In fact, there is a tendency to control the entire spectrum of activities of Panchayati Raj Institutions by the state government in several states. Consequently, these institutions, by and large, continue to function ineffectively, primarily because of the conflicting roles of bureaucracy and elected bodies. It is being argued that the Acts are yet to infuse any significant amount of value additionally as far as the finance and functions of the pre-1992 Panchayat Raj Institutions are concerned. Nevertheless, the State Finance Commission (SFC) had been formed in most states and in many states SFCs also submitted the recommendations on devolution of resources. The indications are favourable and with a few caveats, the process could lead to a thorough restructuring of the role of Panchayati Raj Institutions in ensuring effective self-governance and integrated development.

In the Scheduled Areas, the proposed Panchayati Raj Institutions as conceptualized is 'representative democracy', while the Panchayati Raj Institutions in non-scheduled areas are visualized as 'participative democracy'. Certain other lacunae in the Acts passed by states for the Scheduled Areas include: "dilution of the intent of making the gram sabha as a living organisation, wielding full powers and to manage the affairs of the community within its territorial jurisdiction; the controversy over the definition of minor forest produce and the lack of clear idea of the terms, 'local self-governance' (Srivastava, 1999)". Notwithstanding such shortcomings, which are bound to happen in the initial period of transition, the immediate achievements of decentralization cannot be underestimated.

The mandatory provision of 33 per cent reservation for women and SC/STs has resulted in substantial participation of these groups in the mainstream of governance. Most of these women have been from non-political background and entered politics due to persuasion by the family members or pressure from village community or pressure from political party and some members due to personal interest. The important aspect is that the women who reluctantly entered into politics showed great maturity in outlook, enthusiasm, increasing political consciousness and the increasing perception of their goal and the responsibilities (Panda, 1997). The experiences from the state of Andhra Pradesh, Karnataka, West Bengal where reservations for women began even before 73rd Amendment Act indicate that women could put some of the priority issues like safe drinking water, girl education and basic health services on the panchayat agenda (Bohra, 1997).

Yalakaturi (1987) studied Panchayati Raj Institutions in Andhra Pradesh and analyzed the role of Panchayati Raj Institutions in the implementation of rural development programmes. He also studied the organizational structure of and the problems faced by the machinery which is responsible for the implementation of development programmes. The author suggests a strategy for involvement of Panchayati Raj Institutions in effective implementation of rural development programmes. The study observes that the respondents with higher level of education and landholding have shown greater awareness of the Panchayati Raj Institutions and also have a positive opinion about the programme.

Shiviah and Srivastava (1988) undertook a research study covering states of Gujarat, Karnataka and Rajasthan and analysed factors impinging on the development of Panchayati Raj Institutions. On similar lines Rajashekhar and Harish (1988) studied Panchayati raj institutions and brought out its significance in rural development.

2.23 PEOPLE'S PARTICIPATION

Widespread successes of several initiatives of non-governmental organizations (NGOs) attempt to involve local communities in managing their own affairs encouraged many state governments to launch schemes to promote people's participation. Centrally sponsored schemes stipulated community based organization (CBOs) to plan and implement development programmes. Foreign funded projects, at the instance of donors, made specific provisions for CBOs and laid emphasis on micro planning involving local people.

Ramasamy (1989) while identifying the factors (structural, administrative and psychological) which determine people's participation points out the role of communication in development. He also examined the extent of achievement of objectives (programme) and evaluated the working of the development schemes in terms of people's participation.

Suresh and Joseph (1987) made an effort to assess the level of people's participation and examined the role of rural leadership as the motivating force in people's participation on the basis of a study of 24 non-governmental organisations selected from Ernakulam and Trivandrum districts of Kerala.

2.24 EMPLOYMENT GUARANTEE SCHEME (EGS)

The study on evaluation of Employment Guarantee Scheme, and its impact on women workers, conducted by Datar (1987) in Ahmednagar, Bhandara, Beed and Dhule districts of Maharashtra, observes that there is a lot of scope for improvement of EGS. However, structural changes are not sufficient, bureaucracy which is basically a well designed, need to be more committed to reduce number of people below poverty line, create assets and opportunities for them.

Bhat (1987) evaluated the performance of NREP/RLEGP programmes in terms of the extent to which employment is provided to the weaker sections, improvement in their earnings, problems faced by them and the difficulties faced by the agencies in the effective implementation of the programmes.

2.25 ROLE OF COOPERATIVES IN RURAL DEVELOPMENT

The study conducted by Suresh (1988) assesses the impact of cooperatives on the income generation and distributional pattern of benefits and identifies the major determinants of business and organizational performance of cooperatives. 170 member beneficiaries from the primary agricultural credit societies are selected from Trichur district of Kerala. The study concludes that though the performance of credit cooperatives is satisfactory, they have failed to act as effective agents of rural development.

2.26 SOCIO-ECONOMIC SURVEYS

There are quite a few socio-economic studies which reflect upon the impact of rural development. Some of them are reported in the following paragraphs.

The survey by Chand et.al. (1987) of 51 villages from Burmu (Ranchi district), Chandwa (Palamau district), Tandwn and Keradari (Hazaribagh district) blocks of Bihar) reveals that, for the villages which are in and around the coal mining centers, social infrastructures and also socio-economic life of the people residing in villages around the centers have substantially improved and undergone a rapid transformation in comparison with other villages.

Chand et.al., (1988) in another survey covering 46 villages from Gomia (Giridih district), Mandu and Churchu (Hazaribagh district) blocks, Bihar State highlights the improvement in socio-economic life and other related conditions of the villagers in the hinterland of coal mining centers. It is

observed that the villages that are far away from mining centers have primarily remained underdeveloped and backward.

The same research team conducted a survey of 54 villages in Magadh, Amrapali area, which reveals the extent of underdevelopment. The infrastructure, it is noted, is poorly distributed in villages. The economy of the area is extremely weak and imbalanced. The social indicators of development are far behind the state and national norms.

Check Your Progress 2

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this unit

- 1) Identify the areas of research in rural development which are yet to be explored. Explain the problems of such areas.

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2.27 LET US SUM UP

Rural development encompasses a broad spectrum of subjects related with both natural and human resources in an integrated manner. Most probably, this is the reason, research studies available on these areas have yet to be grouped in a more specified groups. We can, however, group the areas of research in rural development as follows: Rural Development, Voluntary Actions in Rural Development, Integrated Rural Development Programme, Development of Women and Children in Rural Areas, Employment Generating Programmes, Area Development Programmes, Rural Infrastructure Development Fund, Public Distribution System, Labour and Wages, Status of Employment, Agricultural Wages, Education, Health, Social Development, Gokul Gram Yojana, Integrated Wasteland Development, Integrated Tribal Development Agency, Jawahar Gram Samridhi Yojana, Concurrent Evaluation of Million Wells Scheme, Poverty Alleviation Programmes, District Rural Development Agencies, Panchayati Raj in Rural Development, People's Participation, Employment Guarantee Schemes, Role of Cooperatives in Rural Development and Socio-Economic Surveys.

There have been several research studies in the area of rural development. Some of the common findings from these studies are that the organization and structures for rural development are generally integrated within a larger system of overall economic growth and social development. Each

approach/strategy of rural development follows certain overall policy statements on their roles and functions. The systems, however, have unique policy making models.

Many evaluation studies have been conducted on Rural Development Programmes. Researchers have questioned the administrative targeting approach, the excessive centralization in decision-making and utilization of loan by the poor and concluded that the programmes hardly made any impact on the poor. Studies concluded that the programmes have not been an unequivocal failure. These studies found that there are regional variations. It was revealed that the more developed regions and those families near the poverty line showed a better performance when compared to others. Elaborate studies based on concurrent evaluations in the mid-eighties, found that the assistance went to the deserving poor, the communities had adequately participated in beneficiary selection, the assets distributed were sectorally balanced and the record of repayment was no worse than that in other government programmes. It is admitted that the programmes have not been as successful as expected since the numbers crossing the poverty line were few and over dues were very large.

2.28 CHECK YOUR PROGRESS: THE KEY

- 1) Research in rural development aims at increasing the knowledge base in the subject and it also explores achievements and failures. It also creates areas which need attention of policy makers.

Research helps implementers in reducing the cost of the programmes by bringing all present and potential natural resources to most optimal use, conservation and development.

- 2) Subjects related with rural development which are yet to be explored are:
 - i) Impact of rural development on quality of life
 - ii) Rural Development contribution to Social development
 - iii) Rural development vis-a-vis Human development
 - iv) Impact of Globalisation on Rural development
 - v) Impact of Education on Rural development.

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UNIT 3 RESEARCH PROCESS I: IDENTIFICATION AND FORMULATION OF RESEARCH PROBLEM

Structure

- 3.0 Introduction
- 3.1 Objectives
- 3.2 The Research Process
- 3.3 Identification and Formulation of Research Problems
 - 3.3.1 Definition of the Problem
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 - 3.3.3 Operationalisation of Variables
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3.0 INTRODUCTION

To claim knowledge as a scientific knowledge it is essential that it can be proved by reason and experience (observation). The claim is evaluated on the two criteria, viz., logical validity and empirical verification. These two criteria are translated into various activities of researchers through the research process. Unit 3 and Unit 4 intend to describe the research process in detail.

Formulation of research problem, the first step in the research process, is considered as the most important phase of a research project. This step starts with the selection of a suitable problem from the field chosen by the researcher. In the area of rural development, several problems exist, which may have reference to pure, applied, or action research. The choice and formulation of a suitable problem is one of the most difficult tasks for a researcher, especially if he/she is a beginner. There are many sources to which a researcher may go for a suitable research problem, or from which he/she may develop a sense of problem awareness. This unit is devoted to

describe the various activities involved in the process of identification and formulation problems, such as, defining the problem, statement of the problem, operationalisation of the variables, evaluation of the problem, formulation of the hypothesis, etc.

3.1 OBJECTIVES

In this Unit, we concentrate on the selection, definition, statement, and evaluation of the research problem. It also deals with the nature, importance and formulation of hypothesis, the features of usable or workable hypothesis, its various types and utility in the research process. On completion of this Unit, you should be able to:

- describe the important sources for the selection or identification of research problems;
- explain what is meant by the 'definition of the problem';
- describe the criteria which are helpful in the evaluation of a research problem; and
- explain the meaning of hypothesis, what its importance is, and types of hypotheses.

3.2 THE RESEARCH PROCESS

The research process is the paradigm of research project. In a research project, researcher engages himself / herself in various scientific activities in order to produce objective knowledge. Although each research project is unique in some ways, all projects, regardless of the phenomenon being studied, involve, by and large, some common activities. Each of these activities are interdependent. The research process is a system of these interrelated activities. The various activities are conveniently grouped into six stages as shown below:

- Stage I : Identification/Selection and Formulation of Problem
- Stage II : Formulation of Hypothesis
- Stage III : Formulation of Research Design
- Stage IV : Collection of Data Stage V : Analysis and Interpretation of Data
- Stage VI : Generalization

The stages of research are interdependent. The researcher usually enters the research process at stage I. However, when he/she enters second stage, he/she has to draw on past studies to formulate his/her hypothesis. Similarly, to select a search design the researcher has to keep in mind the problem and the hypothesis. A researcher, who has no knowledge of how to collect and analyse data, may find himself/herself unable to formulate a testable hypothesis, or formulate the research design. This brief discussion on the

research process makes it very clear that each of these six stages of research process is dependent upon others.

The research process is also cyclic in nature (as shown in Figure 1). In fact, the research process is not complete at the stage VI. The process leads to two situations: The first situation may be that the data did not support or partially support the hypothesis. In this situation the researcher must return to the stage I. He/She, then, may decide to reformulate the problem and hypothesis and then list it exactly as before. In the second situation, that is, even if the research is successful and the findings of stage VI confirm the hypothesis of stage II, it is advisable to repeat the study preferably with a different sample as to reconfirm the findings. This will also support the contention that the hypothesis cannot be rejected. The exact repetition of a study is called replication.

Figure-1

Stage-I: Identification and Formulation of Research Problem

Stage-VI: Report writing, research

Findings and Generalization

Stage-V: Analysis and
Interpretation of data

Stage-IV: Collection of Data

Stage-II: Formulation of
Hypothesis

Stage-III: Formulation of
Research Design

Figure-I: Stages of the Research Process

Another characteristic feature of the research process is 'self correction'. In a situation, when the data did not support or only partially support the hypothesis and the researcher has sufficient reasons to decide that the hypothesis is adequate then he/she may decide that the failure to confirm the hypothesis is due to error in selecting a sampling design or in measurement of the key concepts or in analysis of data. In these situations the researcher may decide to repeat the study beginning with the faulty stage after rectifying the faults. Finally, the six stages of the research process make the study potentially replicable. The researcher designs his/her study in such a way that either the researcher or others can replicate it. The replication of study substantiates the fact further that the findings are not due to mere coincidence.

Check Your Progress 1

Note : a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

1) Explain the process of research

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3.3 IDENTIFICATION AND FORMULATION OF RESEARCH PROBLEM

The identification and formulation of research problem constitutes the first stage in the research process. Essentially, two issues are involved in formulation of research problem viz., understanding and identifying the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view.

The best way of understanding the problem is to discuss it with one's own colleagues or with those having some expertise in the subject. In an academic institution the researcher can seek the help from a teacher who is usually an experienced person, often the teacher put forth the problem in general terms and it is up to the researcher to narrow it down and phrase the problem in operational terms. In governmental or non-governmental organisations, the problem is usually earmarked by the administrative heads with whom the researcher can discuss as to how the problem originally came about and what considerations are involved in its possible solutions.

The researcher must at the same time examine all available literature to get himself/herself acquainted with the selected problem. He/She may review the conceptual literature concerning the concepts and theories, and the empirical literature consisting of studies made earlier which are similar to the one proposed. The basic outcome of this review will be the knowledge as to what research questions have been explored and what were the findings. This will enable the researcher to specify his/her own research problem in a meaningful context. After this the researcher rephrases the problem into analytical or operational terms i.e., to state the problem in as specific as possible. This task of defining a research problem is a step of greatest importance in the entire research process. The problem to be investigated must be defined unambiguously for that will help discriminating relevant data from irrelevant ones. Care must, however, be taken to verify the authenticity and validity of the facts concerning the problem. The statement of the problem determines the data which are to be collected, the characteristics of

the data which are relevant, relations between variables which are to be examined, the choice of the method and techniques to be used in these investigations. If there are certain pertinent terms, the same should be clearly defined along with the task of formulating the problem. In fact, formulation of the problem often follows a sequential pattern where a number of formulations are set up, each formulation more specific than the preceding one, each one phrased in more analytical terms, and each more realistic in terms of the available data and resources.

3.3.1 Definition of the Problem

Once a research problem has been identified, the research problem needs to be defined. The definition of a problem amounts to specifying it in detail and narrowing it down to workable size. Each question and subordinate question to be answered is specified at this stage and the scope and limits of investigation are determined. In this stage of research the overall plan for the research project must be set out in logical order to see if it makes sense. Your research topic should be defined in such a way that it is clearly understood. If you are studying, for example, alcoholism; you need to put your research question into a framework which suggests that you are very clear and specific about the problem of alcohol consumption and abuse. In short, topics of research must be grounded in some already-known factual information which is used to introduce the topic and from which the research questions will emerge. Usually, it is necessary to review previous studies in order to determine just what is to be done. While defining the problem, it is necessary to formulate the point of view on which the research study is to be based. In case certain assumptions are made, they must be explicitly stated.

3.3.2 Statement of the Problem

A good statement of a problem must clarify exactly what is to be determined or solved or what is the research question. It must restrict the scope of the study to specific and workable research questions. So, you are required to describe the background of the study, its theoretical basis and underlying assumptions, and specify the issues in concrete, specific, and workable questions. All questions raised must be related to the problem. Each major issue or element should be separated into a subsidiary or secondary elements, and these should be arranged in a logical order under the major divisions.

3.3.3 Operationalisation of Variables

In stating a problem, the researcher should make sure that it is neither stated in terms so general as to make it vague or specified so narrowly as to make it insignificant and trivial. The most important step in this direction is to specify the variables involved in the problem and define them in operational terms. To illustrate, suppose you state that you want to study the "Effectiveness of Self-help Groups on the Empowerment of Rural women". This statement is broad and it communicates in a general way what you want to do. But it is necessary to specify the problem with much greater precision.

For this the first step is to specify the variables involved in the problem and define them in operational terms.

The variables involved in the problem are “effectiveness” and “empowerment”. Please note that these expressions are to be understood beyond their dictionary meanings. For example, the dictionary meaning of “effectiveness” is “producing the desired effect”. This meaning is not sufficient for research purposes. It is important for you to specify exactly what indicators of effectiveness you will use or what you will do to measure the presence or absence of the phenomenon denoted by the term “effectiveness”. Similarly, you have to define the other variable “empowerment” also in terms of the operations or processes that will be used to measure them. In this study, you might choose to define “effectiveness” as the improvement made by the rural women in scores on a standardised scale. The term ‘empowerment’ might refer to the scores on the achievement test in empowerment.

It is worth noting that the problem should be stated in a way that it indicates a relationship between two or more variables. It should involve neither philosophical issues values nor questions of judgment that cannot be answered by scientific investigations. For example, should television be more effective in increasing performance level of students? Such value questions cannot be answered through research. Similarly, the question “what is there in television teaching that enhance performances” is a philosophical question which cannot be probed easily.

3.3.4 Evaluation of the Problem

You, as a researcher, should evaluate a proposed problem in the light of your competence and professional experience, possible difficulties in the availability of data, the financial and field constraints, and limitations of time. After evaluating abroad research problem you have to narrow it down to a highly specific research problem. You formulate the problem by stating specific questions for which you would seek answers through the application of scientific method.

It is worthwhile for you to ask yourself a series of questions before you undertake the research. The questions should be helpful in the evaluation of the problem on various criteria. All such questions must be answered affirmatively before the study is undertaken. What are the questions that we should ask?

i) Is the problem researchable?

There are certain problems that cannot be effectively solved through the process of research. A researchable problem is always concerned with the relationship existing between two or more variables that can be defined and measured. The problem should be capable of being stated in the form of workable research question that can be answered empirically.

ii) Is the problem new?

There is no use in studying a problem which has already been adequately investigated by other researchers. To avoid such duplication, it is essential to examine very carefully the literature available in the field concerned. The problem should be selected only when you are convinced that it is really a new problem which has never before been investigated successfully. However, it must be noted that a researcher may repeat a study when he/she wants to verify its conclusions or to extend the validity of its findings in a situation entirely different from the previous one.

iii) Is the problem significant?

The problem should be such that it is likely to fill in the gaps in the existing knowledge, to help to solve some of the inconsistencies in the previous research, or to help in the interpretation of the known facts. The results or findings of a study should either become a basis for a theory, generalisations or principles or they should lead to new problems for further research or have some useful practical applications.

iv) Is the problem feasible for the particular researcher?

a) Research competencies

The problem should be in an area in which the researcher is qualified and competent. He/she must possess the necessary skills and competencies that may be needed to develop and administer the data gathering tools, and interpret the data available for analysis. The researcher should also have the necessary knowledge of research design, qualitative and quantitative techniques of data analysis etc. that may be required to carry out the research to its completion.

b) Interest and enthusiasm

The researcher should be genuinely interested in and enthusiastic about the problem he/she wants to undertake for research.

c) Financial considerations and feasibility

The problem should be financially feasible. The researcher should ascertain whether he/she has the necessary financial and temporal resources to carry on the study. The cost is an important element in feasibility. It is important to estimate the cost of the project and assess the availability of funds. This will determine whether the project can be actually executed.

d) Administrative considerations

In addition to personal limitations, financial and time constraints, the researcher should also consider the nature of data, equipment, specialized personnel, and administrative facilities that are needed to complete the study successfully. He/She should check whether he/she is able to get the co-

operation from various administrative authorities for collecting various types of data.

e) Time

Projects are a time bound exercise. Most of you, if not all, are already engaged in more than one activity in office, at home and at social organizations. It is important to assess the time required to complete a study, besides the assessment of total period, it is necessary to identify the period of the year in relation to the nature of the study.

Check Your Progress 2

Note: a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

- 1) In the light of our discussion till now think of a research problem in your own area of specialization. State the variables of the problem you have identified and state briefly how it is new, significant and feasible for research.

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3.4 HYPOTHESIS

After the selection and formulation of research problem, the formulation of hypothesis is the next important step in the research process. A hypothesis is defined as “A tentative proposition” suggested as a solution to a problem or as an explanation of some phenomenon (Ary et. al. 1985). This step establishes the problem and the logic underlying the research study. Questions which the researcher has designed to answer are usually framed as hypothesis to be tested on the basis of evidence. The formulation of the hypothesis is typically determined with the help of the implications of the related literature and the deductive logic of the problem under investigation.

3.4.1 Importance of Hypothesis

It may be mentioned here that hypotheses are not essential to all researches, particularly, in the early stages of exploration of a problem. And it should not be assumed that failure to develop a hypothesis is necessarily a sign of lack of scientific orientation. However, a hypothesis may be conceived as an assumption which merits consideration and needs to be tested against the available empirical evidence. That is why it is suggested that a hypothesis is to be used as a pivot around which the investigation revolves, limiting

thereby the field of investigation to a definite target and also determining the observations to be made.

A good hypothesis has several basic characteristics. We discuss some of them as follows:

- i) **Providing direction:** Hypotheses provide direction to research and preventer view of irrelevant literature and collection of useless or excessive data. They enable you to classify the information from the standpoint of both 'relevance' and 'organisation'. This is necessary because, a given fact may be relevant with respect to one hypothesis and irrelevant with respect to another, or it may belong to one classification with regard to first hypothesis or to an entirely different classification with regard to the second. Thus, hypotheses ensure the collection of relevant data necessary to answer questions arising from the statement of the problem. For example, in a research problem, "Impact of Development on Levels of Living among Scheduled Castes and Tribes", there searcher may frame the hypothesis – higher the development, higher will be the level of living among the Scheduled Castes and Tribes. The researcher will collect data about the indicators of development and living standards of Scheduled Castes and Tribes.
- ii) **Hypothesis should be testable:** Hypotheses should be stated in such a way as to indicate an expected difference or an expected relationship between the measures used in the research. The researcher should not state any hypothesis that she/he does not have reason to believe that it can be tested or evaluated by some objective means. Hypotheses are the propositions about the relationships between variables. These can be tested empirically.
- iii) **Hypothesis should be brief and clear:** Hypothesis should be stated clearly and briefly. It makes problems easier for the reader to understand and also for the researcher to test. The statement should be a concise statement of the relationship expected.

3.4.2 Characteristics of a Good Hypothesis

There are some important aspects to be looked into to judge the worth of a hypothesis in research. A good hypothesis must be:

- i) consistent with known fact and theories, and might be even expected to predictor anticipate previously unknown data,
- ii) able to explain the data in simpler terms,
- iii) stated in the simplest possible terms, depending upon the complexity of the concepts involved in the research problem, and
- iv) stated in a way that it can be tested for its being probably true or probably false, in order to arrive at conclusion in the form of empirical or operational statements.

3.4.3 Formulation and Testing of Hypothesis

Hypotheses are formulated to explain observed facts, conditions, or behaviour and to serve as a guide in the research process. The statements or tentative generalisations which constitute hypotheses are partly based on facts and explanations, and partly conceptual. Hence, there are certain necessary conditions that are conducive to the formulation of hypothesis. These are:

- i) **Deducing a hypothesis inductively:** You may deduce a hypothesis inductively after making observations of behaviour, noticing trends or probable relationships. For example, as development personnel you observe community leaders behaviour in the village. On the basis of your experience, you may attempt to relate community leaders behaviour with their personal characteristics such as their level of education, castes, socio-economic status, and so on. On the basis of these observations, you may be able to formulate a hypothesis that attempts to explain these behavioural relationships in a village setting.
- ii) **Limiting the problem:** Here we need to state that the basic understanding of the literature pertaining to the problem under investigation also becomes essential in view of the fact that the already existing corpus of knowledge on the particular problem is too detailed to be incorporated in the process of hypothesis formulation. Hence, the researcher must have the ability to comprehend the available evidence in support or against the expected relationships so as to remain within the limits of the problem while formulating the hypothesis.
- iii) **Deriving a hypothesis deductively:** Hypotheses are also derived deductively from the theory. Such types of hypothesis, called “deductive hypotheses” are formulated by studying a particular theory in the area of one’s interest and deducing hypothesis from this theory through logic. This is possible when a researcher has a versatile intellect and can make use of it for restructuring his/her experiences in research. Creative approach to problem solving so badly needed by a researcher, is the product of intellectual adventure, sound attitude, and agile intellect. This view is more relevant to descriptive and historical research in which the abundance of literature with a number of contradictory/supplementary theories may divert the researcher from the right path. Therefore, you have to exercise great restraint and display considerable patience to keep yourself on the right path. You have to develop certain habits and attitudes, besides saturating yourself with all the possible information about the problem and also think open-mindedly about it before proceeding further in the conduct of the study.
- iv) **Hypothesis from analogies, conversations, etc.:** Analogies also lead a researcher to clues that may prove to be useful in the formulation of hypotheses and for finding solutions to problems. For example, a new social situation resembles an old one with respect to a particular set of

factors. If the researcher knows that the factors correlate in a particular fashion in the old situation, he/she may hypothesize in terms of trends in the relationship to be expected in the new social situation. However, it is to be mentioned here that use of analogies must be made cautiously as they are not foolproof tools for finding solutions to problems. Sometimes, especially the inter-disciplinary research conversations and consultations with experts are also found to be useful in the formulation of hypotheses. To study the relationship of increasing literacy rate in the rural population with the changing pattern of agricultural development requires consultation with experts in agriculture, education, planning etc. while formulating hypotheses. However, formulating hypothesis on the basis of analogies, anecdotes and conversations should be done rarely, only as exceptions.

3.4.4 Forms of Hypothesis

To arrive at some conclusions pertaining to a particular research problem, a hypothesis is generally stated in testable form for its proper testing. It may be stated either in declarative form, the null form or the question form. What do these three forms mean? Declarative hypothesis when a researcher makes a positive statement about the outcome of the study, we get a declarative hypothesis. For example, the hypothesis “The performance of the creative on problem solving tasks is significantly higher than the non-creatives’ is stated in the declarative form. Here the researcher makes an attempt to predict the future outcome. This prediction is based on the theoretical formulation of what should happen in a particular situation if the explanations of the behavior (performance on problem solving tasks) which the researcher has given in his/her theory are correct.

Null hypothesis

A null hypothesis is a non-directional hypothesis that proposes no difference or no relationship. The usual form of such hypothesis is: “There is no significant difference between the performance of two groups of villagers, one following the conventional methods of agriculture and the second following modern methods of agriculture.” Since a null hypothesis can be statistically tested, it is also known as “statistical hypothesis” or “testing hypothesis”. The proponents of null hypothesis emphasise that the researcher must remain unbiased throughout his/her research efforts. This view is defended on the basis of the fact that in this case the researcher neither predicts a result nor indicates a preconceived attitude that may influence his/her behaviour during the conduct of the study. On the other hand, those who criticize the use of null hypothesis argue that the researcher should indicate the direction of the outcomes of the study, wherever possible. It is further argued that predicting the results of a study is less awkward in phrasing a relationship, than in using the ‘no difference’ phrase that is usual in the null form.

A null hypothesis challenges the assertion of a declarative hypothesis and also denies it altogether. It says even where it seems to hold good, it is so due to mere coincidence. It is for the researcher to reject the null hypothesis by showing that the outcome mentioned in the declarative hypothesis does occur and the quantum there of is so significant that it cannot easily be said to have occurred by chance. The reasons for rejecting the null hypothesis may differ. Sometimes the null hypothesis is rejected only when the probability of its having occurred by a mere chance is 1 out of 100 or .01 out of 1. In such cases, we consider the probability of its having occurred by chance to be too little to be considered, and we reject the chance component of the null hypothesis and take the occurrence to be due to a genuine tendency.

Hypothesis in question form

In the question-form hypothesis, instead of stating what outcome is expected, a question is asked as to what the outcome will be. For example, if you are interested to find out whether instructions through video programmes have any positive effect on the pregnant women the question form of the hypothesis will be: 'Will instruction on health practices through video programmes affect the health of pregnant women?' This statement shows that instructions through video programmes are not related to health practices of pregnant women.

It is easier to state a hypothesis in question form because it appears to be quite useful to write down all the questions that one wants to answer in a particular research study. On the other hand, a researcher faces difficulties in predicting the outcome of the study and stating the hypothesis in declarative form. But it is worth noting that the question form is less powerful than the declarative or null form as a tool for obtaining valid information, and it is generally advisable to state a hypothesis in directional i.e., declarative form to arrive at valid conclusions and generalisations. However, this last statement should not be taken as if it were a law in the practice and theory of research. Let us examine and compare the three forms of hypothesis in "Effect of video programmes on health practices of pregnant women".

Declarative	Instruction through video programmes will improve the health status of pregnant women in comparison with those who do not have such provision.
Null	There will be no difference in health status of the two groups of pregnant women, one following instructions through video programmes and the other having no such facility.
Question	Will instructions through video programmes affect the health status of pregnant women?

Testing of Hypothesis. Testing hypothesis is an important activity in the research process. As a researcher you should know the important steps in

testing hypothesis. The steps are:

- 1) State the research hypothesis (H1)
- 2) Formulate the null hypothesis (H0)
- 3) Choose a statistical test
- 4) Specify a significance level
- 5) Compute the statistical test
- 6) Reject/accept the H0
- 7) Draw the inference i.e. accept/reject H1

Step 1: State the Research Hypothesis

H1 There is a significant difference between undergraduate and post-graduate students with regard to their reading habits.

Step 2: Formulate the Null Hypothesis (H0)

H0 There is no significant difference between undergraduate and post-graduate students with regard to their reading habits.

Step 3: Choose a statistical test

Let us suppose that we have decided to use Chi-Square statistic (χ^2) to test the relationship between the variables considered in the research hypothesis.

Step 4: Specify a significance level

Further we suppose that we would like to test our hypothesis at .05 level of significance.

Step 5: Compute the statistical test

In this step the researcher has to cross tabulate his/her data and compute Chi-square test (see Block 4, Unit 3). On computation of the test, let us say that the test yielded a value of 6.78, $df = 1$.

Step 6: Reject/accept the H0

Since the calculated value of Chi-square is more than the critical value we reject the null hypothesis.

Step 7: Draw the inference i.e. accept/reject H1

We accept the research hypothesis because the null hypothesis has been rejected. Hence, we can infer that there is a significant difference between undergraduate and post-graduate students with regard to their reading habits.

Type I and Type II Errors

Unlike physical sciences, in social sciences we do not find propositions that indicate certainty. In real world, almost all the propositions, generally, indicate some sort of probabilities. Thus, instead of stating that if A is true, B

must follow, we say only if A is true, B will probably also be true.

We thus admit the possibility that B may be false even if A is true. Thus, if we reject A whenever B is false, we also run the risk of making error that of rejecting a true research hypothesis (H_1). We refer to this kind of error as type I Error or α - error

Otherwise, if we fail to reject (accept) A when B is true we again run the risk of making an error, since A may actually be false. Accepting a false research hypothesis (H_1) is referred to as type II error or β - error.

Example

- 1) Most members will conform to societal norm (A).
- 2) It is a norm of society not to steal.
- 3) B is a member of society.

Inferences

- I) B will probably not steal. Therefore, if A is true (1) B will probably also be true. But if B does steal we reject A with some risk of Type I error (since A may be true, B being one of the few dishonest members).
- II) If we fail to reject A when B is true, we run a risk of making an error since A may actually be false, i.e. failing to reject a false H_1 , is referred to as a type II error or β error.

In social research inferences drawn from the sample are applied to the population from which the sample is drawn. The following statements help us to understand Type I and Type II Errors with reference to the sample and population.

Type I error: Populations differ when in fact they are alike.

Type II error: Two populations are alike when in fact they differ.

Type I and Type II Errors are shown diagrammatically as below:

Population Realities

While we test hypothesis we do not study the entire population; instead, we study a part of it. As such, we can never prove if the null hypothesis is true or false. What we try to prove is whether the sample results are sufficiently likely or unlikely to justify the decision to accept or to reject the null hypothesis.

The null hypothesis can be either true or false. A researcher has a choice of either rejecting or accepting the hypothesis. Hence, there are four possibilities as presented below:

Case 1. The null hypothesis is true and it is rejected

Case 2. The null hypothesis is true and it is accepted

Case 3. The null hypothesis is false and is rejected

Case 4. The null hypothesis is false and is accepted

In first case, a null hypothesis is rejected when it is true. This decision is an error. This error – the rejection of true hypothesis is termed as a type I error. In the second case there is no error because the researcher accepts a hypothesis which is true. The same is with the third case, there is no error in decision because a hypothesis is false and it is rejected. But the decision in the fourth case is an error. That is, a false hypothesis is accepted. Accepting false hypothesis is known as a type II error.

Check Your Progress 3

Note:a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

1) Explain with your own examples the three forms of hypothesis.

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3.4.5 Hypothesis in Various Types of Research

There is no rigid rule about the choice of the form of hypothesis. You can choose any form which your research problems warrant. However, there are various conventions followed in selecting the form of hypothesis in relation to various types of research such as experimental and descriptive research etc. In this section we shall discuss how hypotheses are usually formulated in experimental research and descriptive research.

3.4.5.1 Hypothesis in Experimental Research

In experimental research a hypothesis states that the antecedent condition or phenomenon (independent variable) is related in cause and effect relationship to the occurrence of another condition, phenomenon, event or effect (dependent variable) in a particular setting. To test a hypothesis, the researcher attempts to control all the conditions except the independent variable which he/she manipulates. Then he/she observes the effect on the dependent variable presumably because of the exposure to the independent variable.

In view of the intricacy of causal effect of the independent variable, it is advisable for the researcher to give sufficient attention to the formulation of hypothesis along with the experimental plans and statistical procedures. The experimental plans and statistical procedures merely help the researcher in

testing the hypothesis and contribute little to the development of theories for the advancement of knowledge.

It may be mentioned here that the hypotheses derived or developed from existing theories contribute to the development of new theories and knowledge only through the method of experimentation.

3.4.5.2 Hypothesis in Descriptive Research

Different types of hypotheses have been in use in descriptive research. For example, to study the effectiveness of self-help groups it may be hypothesized that 'the sex discrimination among women at work has decreased over the period 1990-2000 with the increase in number of self-help groups'. Also public opinion surveys require hypotheses to study the opinion of people with regard to various women's issues. For example, to study the popularity of a scheme of income generation, it may be hypothesised that 'The scheme of income generation is preferred more by the urban women than the rural women'. Some studies require not only testing but also tracing relationship between serious facts to have a deeper insight into the phenomenon. For example, a researcher wants to study the relationship of socio-economic status and achievement-motivation with the enrolment of rural women in self-help groups. This requires the hypothesis: 'There is a significant relationship between socio-economic status and participation in self-help groups of women from rural area as compared to that of their urban counterparts'.

Similarly some researchers are concerned with developmental studies, especially in the identification of trends and predicting what is likely to happen in the near future. To illustrate, the researcher may be interested in the study of opening of non-formal education centers in a changing social order. He/she may hypothesise, 'The new colonies in the industrial townships require more non-formal education centres than the rural areas'.

3.5 LET US SUM UP

In this Unit, we have discussed the issues related to the research process; selection, definition, statement and evaluation of research problems along with hypothesis formulation in various types of research.

A hypothesis can be derived inductively or deductively or through analogies, consultations, etc. A good hypothesis must be simple and clear; it must state the expected relationship between variables, and thus make a prediction.

A hypothesis can be stated in a declarative form, null form or question form. Hypotheses are formulated and stated differently depending upon the requirements of various types of research such as experimental research and descriptive research.

3.6 CHECK YOUR PROGRESS: THE KEY

- 1) In a research project researcher engages himself/herself in various scientific activities. Although each research project is unique in some ways, all projects, regardless of the phenomenon being studied, involve in some common activities. The research process, is the system of these interrelated common activities.
- 2) In the area of rural development, the researchers own professional experience may be a better source of identifying a research problem because it would provide him/her with the necessary information regarding the relevance and the feasibility of the research contemplated.

Here you may have any research problem. But we give you a model. “The effectiveness of audio-video programmes on women’s empowerment” could be a research problem. It is significant because, the idea of multimedia approach to women’s empowerment has to be tested empirically in a given situation. The impact of audio-video programmes on women will decide whether to continue with multimedia approach or not. It is also feasible since it could be taken up by researchers in rural development, and the financial and other requirements could be met in certain cases.

- 3) Declarative Hypothesis: “An urban woman is more empowered than her rural counterpart.”

Null Hypothesis: “There is no difference between the level of empowerment of urban women and a rural woman”.

Hypothesis in Question Form: “Is there any significant difference between the levels of empowerment of urban women and rural women?”

UNIT4 RESEARCH PROCESS II: PREPARING A RESEARCH PROPOSAL

Structure

- 4.0 Introduction
- 4.1 Objectives
- 4.2 Preparing a Research Proposal
 - 4.2.1 Identification and Formulation of a Research Problem
 - 4.2.2 Review of Literature
 - 4.2.3 Identification of Objectives of the Study
 - 4.2.4 Formulation of Hypothesis
 - 4.2.5 Operationalisation of the Concepts
 - 4.2.6 Research Design
 - 4.2.7 Selection of Sample
 - 4.2.8 Selection of Method and Tools for Data Collection
 - 4.2.9 Collection of Data
 - 4.2.10 Processing of Data
 - 4.2.11 Analysis and Interpretation of Data
 - 4.2.12 Presentation of the Report
 - 4.2.13 Time Estimate
 - 4.2.14 Budget Estimate
- 4.3 Let Us Sum Up
- 4.4 Check Your Progress: The Key

4.0 INTRODUCTION

In the previous Unit you have learnt about the process of research. You have also learnt about formulation of a problem and hypothesis in detail. In this Unit we will learn about how to prepare a research proposal. The research proposal consists of every details of a research project. It helps a researcher in many ways. Firstly it gives the researcher a complete picture of the whole research project. Secondly a well-prepared research proposal helps to make time and budget estimate. Lastly, a research proposal enables a researcher to monitor his/her research project. Sometimes, the purpose of developing a research proposal is also to try to obtain a grant to cover the expenses of the research project.

The research proposal consists of details about various interrelated research activities, which overlap continuously rather than following a strictly prescribed sequence. At times, the first activity determines the nature of the last activity to be undertaken. If subsequent activities have not been taken into account in the early stages, serious difficulties may arise which may even

prevent the completion of the study. One should remember that the various activities involved in a research project are not mutually exclusive nor they are separate or distinct. They do not necessarily follow each other in any specific order and the researcher has to be constantly anticipating at each step in the research project the requirements of the subsequent steps. However, the following order concerning various steps provides a useful procedural guideline regarding the research project:

- 1) Identification/Formulation of the Research Problem,
- 2) Review of Literature,
- 3) Identifications of Objectives of the Study,
- 4) Formulation of Hypothesis (if any),
- 5) Operationalisation of Concepts,
- 6) Preparation of Research Design,
- 7) Selection of Sample,
- 8) Selection of Method and Tools of Data Collection,
- 9) Collection of Data,
- 10) Processing and Analysis of Data,
- 11) Analysis and Interpretation of the Data,
- 12) Presentation of the Research Report,
- 13) Budget Estimate, and
- 14) Time Estimate.

4.1 OBJECTIVES

On completion of this Unit, you would be able to :

- describe the importance of writing a research proposal;
- prepare a research proposal;
- prepare a sample design;
- prepare a plan of collection and analysis of data;
- prepare a scheme of research report; and
- prepare budget and time estimate.

4.2 PREPARING RESEARCH PROPOSAL

4.2.1 Identification and Formulation of a Research Problem

A thorough understanding of known facts and ideas in the broad area of research constitute the first and the most important step in identification and selection of a problem for your study. A thorough knowledge of the research studies conducted in the field provides you with details about the problems

which have remained unresolved. A list of suggestions for further research given at the end of research reports and reviews of research would help you to get an idea about the gaps which exist in the knowledge pertaining to your field of research. Periodicals and bibliographies of research are helpful in keeping you informed about the research going on in the field in which you are interested and show competence. The various sources through which a researcher can identify a suitable and significant problem have been already discussed in Unit 3.

At the very outset of the research project the researcher has to decide the broad area that he/she would like to inquire into. In Unit 1 you have read some of the broad areas of rural development, such as: rural sociology, rural economy, rural poverty, etc. In each broad area innumerable problems exist. As a researcher first you are required to single out the broad area you wish to study. Once you decide the broad area for your research study immediately you need to evaluate the proposed area in the light of your competence, possible difficulties, in terms of availability of literature, the financial and field constraints, limitations of time etc. After evaluating the broad area you have to choose a specific subject for the study. Let us assume that you have chosen the broad area of rural economy. The broad area of rural economy consists of a number of subjects such as, source of income, patterns of expenditure and savings, occupational pattern, indebtedness, etc. Within each of these broad areas of rural economy, there is a range of issues that can be studied, for example, origin of rural economy, effects and consequences of economic programmes and the impact of intervention efforts intended to ameliorate the rural economy. People associated with non-governmental organisations, who are routinely involved with many of these areas/issues, can find opportunities for research that are directly related to their professional activities. To undertake a research study, now you have to think of a specific subject, say for example, you may wish to study a subject like 'Role of Self-Help Groups in Rural Economy'.

4.2.2 Review of Literature

The beginning of this section has suggested you to get literature relevant to the topic before you want to study it. Social research topics are usually embedded in so many different kinds of literature that the researcher must be careful in selecting the best literature to examine. While many researchers collect every material which has some linkages with the topic, you need to keep the central theme of your topic in mind to guide you through your search of the literature in the field. It is also important to examine different types of literature where relevant inferences are drawn from scientific data interpretations. It would be very useful if research findings from studies using various methods are critically examined.

While presenting review of research literature, a researcher should touch upon the introduction justifying the research, methodological details and findings and their implications. But most researchers present only findings.

Very few researchers look into findings as well as research methodology in their reviews. From the perspectives of findings, major objectives of a review are to: (a) find gaps in research, (b) identify the areas of overlap, and (c) identify contradictions.

For preparing a research proposal, you should refer to the gaps in research, the areas of overlap, contradictions and significant findings you have noted through review of literature. This will help you to raise questions or which will guide you to decide the subsequent steps of the research process such as identification of objectives, formulation of hypothesis (if any), determination of research design and sample for your study. You must be able to draw out findings from the studies and summarize them in such a way that someone unfamiliar with study can easily grasp their meaning and importance. To help you to do this, you should look at the background of sections of literature review which generally come at the beginning of published research articles. Most of these reviews are very condensed; they extract a few salient points from numerous studies, summarizing them in a way that is relevant to the study in question.

Check Your Progress 1

Note : a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

1) Discuss the importance of review of literature in a research project.

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4.2.3 Identification of Objectives of the Study

Once the problem, the theoretical background, and the concepts have been explained, it is time to address the aim and objectives of the study. At this stage you are required to present the aim and the objectives of the study in brief to justify your study in terms of both of its rationale and the implications that it might raise.

It is important to examine whether the researcher has raised very clearly the questions to which he/she is looking for a solution. These questions should be explicit – the researcher should categorically put down the questions on paper. The set of questions formulated can be converted into objectives. Objectives are the foundations of a research project. Eventually the objectives guide the entire process of research.

The major attributes of well-written objectives are:

Clarity of expression and direction

The objectives stated must be clear enough to indicate what the researcher is trying to investigate. It is equally important to avoid overlaps in stating objectives.

Measurability

The objectives must be stated in a manner that they are measurable. In case of qualitative research it should be possible to at least codify the data and information so that assessment can be made whether the objectives have been achieved or not.

Comprehensiveness

The objectives provide the guiding framework for a research project. Hence, the statement of objectives should be comprehensive enough to cover each and every aspect of the research study. There should be nothing outside the purview of the stated objectives.

Judiciousness

Another important attribute is the judiciousness in and justifiability of choosing and stating objectives. For example, many young scholars, in their postgraduate dissertations and doctoral theses mention “recommending future research” as one of the objectives. In all fairness, this is not feasible. Similarly, in a short time-bound project, a research objective that actually calls for sustained and long-term study becomes less feasible.

Here it is important to note that rationale for doing the project will be accomplished only if the study is done well. Preparing a proposal of your study will show that you have devised a plan to study your problem that seems feasible, you reinforce the sense that the aims and objectives of the study will be achieved. The value of the study lies not only in what it alone will produce, but also in how it may add to or challenge other research in the area.

4.2.4 Formulation of Hypothesis

A common strategy in scientific study is to move from a general theory to a specific researchable problem. A part of this exercise is to develop hypotheses, which are testable statements of presumed relationships between two or more concepts. In other words, hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences. Hypothesis states what we expect to find rather than what has already been determined to exist. After extensive survey of literature and statement of objectives, researcher should state in clear terms the hypothesis.

4.2.5 Operationalization of Concepts

Once you are settled with the hypotheses for your study, you need to operationalise the concepts so that you can develop your measuring

instruments such as your questionnaire and other tools.

In a study, a set of concepts is used to explain the phenomenon. These concepts need clarifications with reference to the particular topic. Through, the clarifications and discussion of the concepts a research model is developed at this stage. Precision in conceptualization is critical in the social sciences, and it is not easy to achieve. Concepts like ‘exploitation’, ‘discrimination’, and ‘oppression’ may all seem to be familiar terms. However, the precise meanings you attach to these concepts must be defined and clarified, and then an appropriate way to measure concepts must be found or devised.

In the research proposal, a clear definition of the main concept or concepts is most essential. It is also essential to discuss the process of measurement of the concepts. In the research proposal you should also touch upon the potential problems in measuring the concepts. These include two critical issues: validity, that is, whether the measurement of a concept in fact produces a result that truly represents what the concept is supposed to mean, and reliability, that is, whether the measurement would lead to same results, whenever it is repeated, that one could have some confidence in the results.

In a survey, the questionnaire is nothing but concepts in operational form. In an experiment, the operationalisation of the independent variable (concept) is the actual stimulus. In field studies, this process of operationalization occurs in a very different manner. It is often carried out after the field notes have been collected. After that the researcher may find evidence that suggests certain meanings, at which time the process of conceptualizations are carried out. To test whether you are correct, you may go back to the field to see if another instance of this operationalised concept occurs. It is always advisable to use more than one indicator for better measurement of the concept. This will strengthen your study.

Check Your Progress 2

Note:a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

- 1) Define the term ‘hypothesis’. Discuss the importance of hypothesis in making are search proposal.

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4.2.6 Research Design

After the research problem and its aims and objectives are stated and hypotheses are formulated in clear cut terms, the researcher is required to prepare a research design, i.e., he/she will have to state the conceptual framework within which research would be conducted. The preparation of such a research design facilitates researcher to complete his/her research project as proposed. In other words, the function of research design is to provide for the completion of the research project with minimum effort, time and money. But how all these can be achieved depends mainly on the research purpose. Research purpose may be grouped into four categories, viz., (i) Exploration, (ii) Description, (iii) Diagnosis, and (iv) Experimentation. A flexible research design, which provides opportunity for considering many different aspects of a problem, is considered appropriate if the purpose of the research study is that of exploration. But when the purpose happens to be an accurate description of a situation or of an association between variables, the suitable design will be one that minimizes bias and maximizes the reliability of the data collected and analyzed.

There are several research designs, out of which the researcher must select one for his/her own project. The preparation of the research design (you will know about research designs in detail in Block 2), appropriate for a particular research problem, depends usually on its objectives and hypotheses, the sample, the type of data to be collected, time available for research; and the finance available for the purpose.

However, it is important that the chosen research design is competent to respond to the research objectives and questions laid down. For example, if the objective is to test the impact of a broad treatment to a group of clients, it has to follow an experimental design. Similarly, if the objective were to assess the status of certain psychosocial variables in a given sample of population, it would require survey designs. Within survey designs, if the purpose is simply to describe their status and not to compare them with any standard norm or not even develop a norm, the design can be descriptive.

Hence, while preparing a research proposal it is necessary to check the choice of appropriate research design against the objectives. Another means of evaluating the applicability and appropriateness of the research design is to check it against the hypothesis. If the hypothesis to be tested is formulated in terms of relationships, the study has to adopt a survey design, by which relationships can be tested. Compared to it, if the hypothesis is to test the performance of two different groups against a particular type of treatment, the research design has to provide for that opportunity by adopting an experimental design. Depending on the nature of the groups, the treatment, the size of the sample and also the nature of that experiment, one would adopt a pre-experimental, quasi-experimental or true experimental design.

Thus as a researcher you need to examine the appropriateness of the choice of research design vis-à-vis the research objectives. The details of the design, e.g. type of experimental design etc. too have to be evaluated. Equally important is the argument put forward by the researcher in deciding the research design.

Choice of Variables

Choice of variables is an important step in a research project. There can be at least three sets of variables, namely, independent, dependent and intervening variables. There are also other ways of classifying variables like socio-economic, demographic, psychological, organizational, etc. The later classification is relevant with regard to basic content of research whereas the former is directly linked to research data.

Here, we shall concentrate on the first set. The important point in selecting the variables is the formulation of the dependent variables. This is particularly important in experimental research where the impact of other variables on the criterion variable is assessed.

In order that the research makes a meaningful contribution, it is important to choose the independent variables as meticulously as possible. The choice of independent variables depends upon more than one consideration. Of the considerations is the existing knowledge on the basis of previous research which shows that certain types of variables are indeed related to and predict the variation of the criterion variable. The second important consideration is the assumption of the researcher –that there are particular sets of variables that are likely to be related to the dependent variables.

The third set of variables is the intervening variables. These are often ignored in research, although these actually intervene and influence the relationship between the independent and the criterion variables. On the basis of the research literature, the researcher is expected to identify such variables that are likely to influence the relationship under test.

Besides the identification and classification of the variables, it is important that variables are measurable. Further, all variables may not have standard definitions. In such a case, it is expected that the researcher shall provide operational definitions and also indications of their measurability.

Hence, an important consideration in proposing a research project is how meticulously the variables have been identified and classified under the three categories mentioned above. The second important consideration in this case is whether the researcher has provided operational definitions of at least such variables as do not have a standard meaning in the literature. The third important consideration is whether there are clear indications of the measurability of variables.

Check Your Progress 3

Note : a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

1) Explain the purpose of a research design in research project.

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4.2.7 Selection of Sample

At this stage the researcher is required to decide the sample design of his/her study i.e the way of selecting a sample. In other words, a sample design is a plan decided before any data are actually collected.

The selection of the sample for the study depends on many factors. Some of these factors, affects the selection of the sample to a great extent. We will discuss a few of them. The homogeneity or heterogeneity of the universe is one such factor which affects the sample selection procedure to a great extent. For example, if you are interested in studying medical students, which is a very homogeneous group, even a very small sample will be representative of the universe where as if you plan to study a college having arts, science and commerce faculties you may have to choose a very large sample and even then you may not have confidence to say that your sample is representative.

Other important issues with regard to selection of sample that need to be considered are: sample size, sampling technique and type of the sample. The size of the sample depends on the nature of objectives of a research project and the research design. For example, in case of rigorous experimentation, it is difficult to handle large samples. Also, it is not necessary. Similarly, for surveys and such other status studies, samples have to be large. The main consideration here is that there has to be an optimum size of sample beyond which it is waste of research resources. What is to be considered is whether the sample size is large enough for the study and the sample size has been determined scientifically.

You may be interested in generalising your findings to others beyond those studied. When probability samples are used, it is possible to determine how representative your sample is of the population. Sampling plans may be simple as well as, complex. When the rules of probability are not followed and you merely select a sample of subjects who seem to fulfill the needs of your study, you have a non-probability sample. For many studies, such a sample is sufficient; and for some, it is the best that can be achieved.

Whatever the design of your sample, it needs to be explained in detail in your research proposal. It should be so precise that someone else could generate a similar sample by following your procedures. Remember that even if you select a representative sample you have to be very careful in making generalizations. (For details about the methods of sampling see Block 3, Unit 1)

4.2.8 Selection of Method and Tools of Data Collection

There are three primary methods of data collection, namely, observation, interview and questionnaire. Under these three methods there are several research instruments such as, psychological test, achievement tests, interview schedules, etc. You will learn about these methods in Units of Block 3. In these Units the methods are explained in details so that you can use them to design and carry out a study based on questionnaires or interviews, and in field studies using different types of observation techniques. It also describes different forms of what might be called data collection procedures for using secondary data.

It is important to note that the research instruments are for the measurement of variables. Every variable has certain attributes of its own, amenable to measurement by different types of scaling, namely, nominal, ordinal, ratio and interval. Similarly, these are variables which are amenable only to rigorous standardized tests, like those of intelligence, reasoning ability, etc. There are others which can be measured through inventories or questionnaires. Then there are variables which necessitate the use of interviews with probing questions to be able to go into the details of a process. The common mistake in this area is the use of incompatible instruments vis-à-vis the variables being measured; for example, researchers may use a questionnaire to measure attitude. Similarly, in the name of a questionnaire, researchers may actually frame an opinionnaire. Sometimes researchers use questionnaires for conducting interviews as if a questionnaire is no different from an interview schedule. More often than not, interviewing is called for when a lead question to 'Yes' and/or 'no' kind of situation.

The points to be borne in mind while preparing a research proposal are the following:

- 1) Whether the researcher has chosen a tool of data collection that can actually measure the variables.
- 2) Whether the tool of data collection has been picked up from an existing stock or has been constructed by the researcher. In case of the former, whether the researcher has checked its validity, and reliability. In case the researcher has used the tool of data collection on his/her own, has care been taken to check the attributes of the tool, a dependable tool of data collection, be it a questionnaire, inventory or an interview schedule.
- 3) Whether the researcher has tested the feasibility of the use of the tool of data collection.

While preparing the research proposal you are also required to describe how you will collect primary data. In case you are planning to use secondary data you must mention which sources of available data you will actually use. You may also very briefly discuss about issues of access to the data. It is important for a researcher to see that, he/she must be able to get the data he/she proposes. If you anticipate problems in securing the proposed data, these problems should be discussed and possible alternate sources of data might be suggested. Most researchers propose to use one source of data yet you may propose few more sources through which you may also collect data from other sources to widen their scope.

4.2.9 Collection of Data

There are different methods of data collection. Each method of data collection has its special concerns which need to be considered fully before doing the study. This is why pre-testing is so valuable, because it helps you to find and address potential problems before they enter your study and cause bigger problems.

The plans for collecting data should be described carefully. In a field study, it is always more difficult to be precise, and you may need to make changes once you enter the field. Nevertheless, it is better to have a clear plan that can be changed as you move forward. For an experiment; data collection procedures can usually be described very precisely. This is also true of a survey. Surveys using mailed questionnaire tend to have multiple stages in the data collection procedure to increase the response rate. If you are using secondary data, you need to describe at this stage how you will collect the data.

The quality of the outcome of research also depends on the quality of data itself. In turn, the quality of data is determined by the procedure of data collection. The indication of the quality of data lies in the dependability of the information collected from the sample.

4.2.10 Processing of the Data

Once the data are collected, they must be processed. If the responses are in qualitative terms you have to prepare a code book where you have to give numbers for the qualitative responses. This is very much essential if you wish to process your data through computer. If they are field notes, they must be organised and categorised.

In the research proposal, a concise statement may be included to address this subject. It may describe what type of computer facilities is available, what possible sources of assistance are available, and what efforts are being made to increase accuracy in the handling of the data. There are now some technological advances in data gathering which speed the process from data gathering to data entry. An example is the SPSS (Statistical Package for Social Sciences) now becoming quite common for social research.

4.2.11 Analysis and Interpretation of Data

You need to plan how you will analyze the data. It is advisable to prepare a plan of analysis of data spelling out the various applications of statistical tests carefully while the study is being designed. It is better to have a planned strategy that can be adapted than to end up with piles of data for which you have no organized plan.

You are also required to explain how you are planning to compare or contrast different variables, for example, men with women, one rehabilitation program with another, length of time spent in an organization by the attitude of employees towards the new incentive introduced recently?

In addition, you need to consider which statistical tests you plan to apply to evaluate the association/differences between the variables. For example, if you propose to measure correlation between the variables to test whether there are significant correlations between them you have to select an appropriate test of correlation that could get the result you need.

Check Your Progress 4

Note : a) Space is given below for your answer.

b) Compare your answer with the one given at the end of this Unit

1) Why it is necessary to prepare a plan of analysis of data?

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4.2.12 Presentation of the Report

Every research is conducted by presenting its results in the form of a report. The reporting of results of a research study depends on purpose, with which it was undertaken. A study might have been conducted for various reasons, such as, a personal research may be for award of a degree, an institutional project, a project funded by an outside agency, etc. At the end of the study, you have to present the results of the study in the form of a report. Research studies follow scientific process. As such, when it is reported it follows certain conventions and formats for maintaining parity in reporting and for easy grasps by readers. While preparing a research report you have to follow a number of writing conventions. These conventions are commonly known as research formats. These conventions/research formats allow the researcher to present his/her findings within a framework, a framework which is both logical and sequential. By following conventions/research formats the researcher not only systematise and structure his/her research findings in

terms of the research problem and its objectives but also facilitate the reading and comprehension of the report by others. In a very broad sense, the format of a research report consists of three parts: the preliminaries, the text and the reference materials. The length of any of these three parts is conditional on the extent of the study. Each of these parts may consist of several subsections. (For order of individual items within the three main sections and other details about the conventions/research formats you are advised to refer “Thesis and Assignment Writing” by Anderson, et.al.)

4.2.13 Time Estimate

Time estimate is another important step in preparing a research proposal. The various activities discussed above are completed in a sequence. A researcher is required to estimate time for each activity so that he/she will be able to know the total time required executing the project. Time estimate not only set the time frame for the execution of the project but it also helps the researcher to prepare budget estimate for the research project.

The preparation of the time estimate for a particular research project depends primarily on the size of the sample for the study and the method and tools of data collection to be used for the study, time available for research; and the finance available for the purpose.

For preparing a time estimate for your research proposal, you are advised to discuss with your research supervisor or research experts. This will help you to decide optimum time for various research activities to be undertaken in the research study. A model of time estimate is given below:

S. No.	Research Activities	Time Required
1.	Identification of Problem	2 Weeks
2.	Review of Literature	1 month
3.	Identification of Objectives	1 week
4.	Formulation of Hypothesis	2 Weeks
5.	Selection of Research Design	2 Weeks
6.	Selection of Sample	1 week
7.	Selection/Construction of Tools of Data Collection	1 month
8.	Pre-testing of Tools of Data Collection	2 weeks
9.	Data Collection	3 months
10.	Editing of Data	2 weeks
11.	Preparation of Code Book	1 week
12.	Preparation of Master Chart	2 weeks

13.	Processing of Data	1 week
14.	Statistical Analysis of Data	1 week
15.	Writing of Report	2 months
16.	Presentation of Report (Typing, Binding etc.)	1 month
17.	Total	12 Months

4.2.14 Budget Estimate

In case you are contemplating to apply for a research grant to cover the expenses of the research project, you will be required to prepare a budget estimate along with your research proposal. The preparation of the budget estimate for a particular research project depends primarily on the area of study and size of the sample for the study and the method and tools of data collection to be used for the study. Common heads/items of expenditure for a research project are shown in the following table.

S. No.	Item/Research Activities	No. of Personnel required	Duration	Cost (Rs.)
1.	Research Assistant @ Rs. 6000.00 per month	1	6 months	36000.00
2.	Research Investigators @ Rs. 3000.00 per month	2	3 months	18000.00
3.	T.A./D.A. for Research Assistant & Research Investigators			10000.00
4.	Typing & Binding of Report			5000.00
5.	Overhead Expenditure			5000.00
6.	Contingencies Expenses (10 % of the expenditure on items 1 to 5)			7400.00
			Total	81400.00

4.3 LET US SUM UP

The research process consists of six major stages, namely, selection and formulation of a problem formulation of hypothesis, selection of research design, data collection, data analysis and interpretation and generalization. In each stage there are a number of research activities which can be taken up step by step. These activities are spelled out in a research proposal.

You should keep in mind that the various steps involved in a research project are not mutually exclusive, nor they are separate or distinct. They do not necessarily follow each other in any specific order and the researcher has to be constantly anticipating at each step in the research project the requirements of the subsequent steps. However, the following order concerning various steps provides a useful procedural guideline regarding the research proposal: Identification /Formulation of the Research Problem, Review of Literature, Identifications of Objectives of the Study, Formulation of Hypothesis (if any), Operationalisation of Concepts, Preparation of Research Design, Selection of Sample, Selection of Method and Tools of Data Collection, Collection of Data, Processing and Analysis of Data, Analysis and Interpretation of the Data, Presentation of the Research Report, Budget Estimate, and Time Estimate.

4.4 CHECK YOUR PROGRESS: THE KEY

- 1) Review of literature has a significant role in preparation of a research proposal. Review of literature refers to gathering the significant findings of studies already undertaken in the area of the research. It helps the researcher to raise research questions and guide him/her to decide the subsequent steps of the research process such as identification of objectives, formulation of hypothesis (if any), determination of research design and sample for the study.
- 2) Hypothesis is a tentative assumption to be tested during the study. It is made in order to draw out answers for the research questions and test its logical or empirical consequences. As such, the manner in which research hypotheses are formulated is particularly important since they provide the focal point for research. They also effect the manner in which tests must be conducted, in the analysis of data and indirectly the quality of data which is required for the analysis.
- 3) The researcher is required to prepare a research design to state the conceptual framework within which research would be conducted. The preparation of such a research design facilitates researcher to complete his/her research project as proposed.
- 4) A plan of analysis of data is prepared to spell out the various ways of analysis of data and applications of statistical tests while the research proposal is prepared. Because it is better to have a planned strategy that can be adapted than to end up with piles of data for which you have no organized plan.

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