UNIT 4 COMMUNICATIONS RESEARCH

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4.1 OBJECTIVES

In this unit, you will be introduced to the themes and methods of Communications Research. After going through this unit, you will be able to:

- list major areas of communications research and delineate the scope;
- outline different approaches to communications research;
- identify the merits and weaknesses of these various approaches;
- explain, with examples, some basic data analysis techniques; and
- review several applications of communications research in the Indian context.

4.2 INTRODUCTION

In Unit 3, you have acquired familiarity with some theories of mass communication — hypodermic, psychological, personal influence, sociological, normative and others. By now, we know very well that communication involves exchange of information, ideas and attitudes between sources and receivers. Several elements go to make up this process: Source, Message, Channel, Receiver, Noise, Feedback, and so on. The process takes place in a context, and it is intended to produce an effect. The study
of these various elements and their interactions in the process is the domain of communications research.

The focus of this unit will be areas and methods of communications research. An attempt is made here to delineate the scope of communications research by way of outlining the major areas; describe the methods of research indicating the procedure, merits and limitations; and suggest some basics of data analysis. Further, communications research applications in the Indian context are briefly discussed and commented upon. In the unit that follows, that is, Unit 5, we shall consider the question of mass media's impact.

Activity 1

Before you proceed further, pause for a while and let us involve ourselves into an activity.

You are definitely familiar with the words of 'Communication' and 'Research'. In the space provided below, write down what you mean by 'Communication' and 'Research' separately and then try to define 'Communications Research'.

Communication :

Research

Communications Research

Having done this exercise, now you may proceed with the unit. After completing this unit, you may come back to this page and redo the activity and find out whether or not your explanations have changed.
4.3 NATURE OF COMMUNICATIONS RESEARCH

Communications research undertakes the scientific study of communication process; being scientific, it is objective, deterministic and parsimonious. It is interdisciplinary in nature as it borrows heavily — both in terms of theory and methods — from social and behavioral sciences, viz., psychology, sociology and anthropology. In essence, it involves applications of social and behavioral science methods to the study of communication issues and problems.

4.4 AREAS OF COMMUNICATIONS RESEARCH

The scope of communications research may well be delineated by outlining the major areas of its investigation. As mentioned in the earlier section, it deals with the nature of the elements of communication and their interrelationship in the process. The major elements which are common to most communication situations include: communicator (source); message (content); channel (medium); receiver and effect. These elements are identified by most of the models.

4.4.1 Communicator/Source Analysis

The nature of the communicator and those characteristics which make him effective in his persuasive attempts, have traditionally attracted the attention of communication researchers. To begin with, one looks for the essential characteristics of a good reporter, editor or other media personnel. But, at the theoretical level, one explores how the source characteristics such as credibility, expertise, intent and attractiveness affect the acceptance of the message by the receivers. The classic example of this kind of research is found in the studies of the Yale Communication Research Group of the United States of America. Hovland and Weiss, for example, conducted an experiment in which they presented an identical communication to two groups of subjects. But the messages were attributed to high and low credibility sources. They found that when a communication was attributed to low credibility source, it was considered to be more biased and unfair in the presentation than when it was attributed to high credibility source. Further, the high credibility source had considerably greater immediate effect on the opinion of the audience than the low credibility source. There has been abundant research in this tradition, exploring the characteristics of the communicators and how these characteristics affect the receivers. Also, profiles of various media sources in terms of their perceived characteristics, and comparisons of these profiles for various sources are frequently made.

4.4.2 Message Analysis

The quality and kinds of messages are often studied in terms of their comprehensibility, interest arousal, and attention value, and the final impact. Variations in style, length, readability, emotional appeal, rationality, and the content characteristics of message have been the focus of a number of research studies.

Analyzing the content of messages — a methodology which has become a favourite of communication researchers (discussed in 4.5.4) — and relating it to other
elements in the process, especially their impact on individual behaviours, attitudes and values, and the consequences in terms of social developments and cultural change, forms a major chunk of communications research.

4.4.3 Channel Analysis

Each medium has its distinctive characteristics facilitating or impeding communication effectiveness. And, therefore, the channel through which messages are transmitted is important in producing the effect. The well known communication theoretician, Marshall McLuhan, goes to the extent of advocating that the medium through which the message is communicated has more impact on the receiver than the message itself. One of his books is appropriately entitled "The Medium is the Message". He makes a distinction between 'hot' and 'cold' media, that is, whether the medium stimulates active participation or induces a passive and receptive state of mind in the audience.

The other dimension relates to the differences between written and spoken forms of communication, and their differential impact on attention, comprehension, and pressures to comply with the message. A tremendous amount of applied research has been carried out to test the effectiveness of mass media channels and interpersonal communication channels. The diffusion researchers are interested in the role of mass media and interpersonal communication channels at different stages of diffusion process. The greater availability of feedback in face-to-face communication situations is its obvious advantage. Comparison of various modalities — print, radio and audio-visual — has generated a lot of research. The importance of 'silent language', non-verbal or gestural communications also has received some attention. The role of folk communication, especially in the context of developing countries, has received a lot of attention from the communication scholars. Much research has been conducted in the Third World countries to study the role of folk communication in various development projects. Advertisers are much interested in this area of research as it offers suggestions on how to take a decision on selecting the right medium to reach their target audience.

4.4.4 Audience Analysis

The ultimate aim of communication is to produce the intended effect on receivers. As such, the audience (a general term inclusive of the readers, listeners and viewers) characteristics — its size, composition, geographical distribution, interests, attitudes, opinions, and behaviours have been the main focus of a large number of research.
communication studies. Media owners are particularly interested in knowing the nature of their audience in order to provide the content appropriate to their tastes and needs. Similarly, advertisers need to have the knowledge about the size and composition of audience of various media. This knowledge is necessary to reach the largest number and the right kind of people for their products and services.

Readership studies and programme rating procedures provide the best example of traditional audience research. Readership studies have always sought information on how many people read a particular publication, who these people are, and what kinds of items interest them most. Similarly, programme ratings of radio and TV are conducted at frequent intervals to determine how many people are listening to and or viewing certain programmes and what kinds of people they are.

One procedure has been to get the information through a mechanical recorder attached to the TV or radio set in a sample of households; another technique is to have the audience maintain diaries on their listening or viewing behaviours; yet another approach involves making telephone calls to homes while programmes are on the air. Each of these methods has its own limitations. The automatic recorder gives information about set tuning but not necessarily the information about listening or watching; in the diary methods, the information provided may be quite selective and distorted; and in the case of telephone interviews, non-telephone homes cannot be reached, and also the early morning and late evening calls as well as long conversations are prohibited.

4.4.5 Process and Effects Research

Communication (as described in section 4.2) is a process involving several elements. The process is broken into elements in order to have a better understanding of it. However, the dynamic nature of the process is to be studied not by analyzing the elements, but through a consideration of these elements interacting with one another to produce the final product, viz., the effect. The effect can be studied at several levels — exposure, comprehension, recall, acceptance, and action. Each level is a necessary pre-condition for the occurrence of the next level. Also, it is important to note there is a gap between acceptance (a cognitive change) and action (an act of behaviour); acceptance of message need not necessarily result in behavioural changes. Further, mass media effect is not automatic, as once it was assumed to be under the hypodermic needle model, or the magic bullet theory conception of mass media effects. Mass media audiences are not just passive agents reacting to what they see and read. People’s needs, biases, and interests affect the way they perceive, interpret and react to media communications.

There has also been a shift from viewing audience members as isolated individuals to seeing them as members of various groups to which they belong — family, community, institution or some other reference group.

Check Your Progress 1

Note: i) Use the space below for your answer(s).

ii) Compare your answer(s) with the ones given at the end of the unit.

1) Why is research required in Communication?

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2) What are the areas of study in Communications Research?

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3) What are the elements you would like to research upon when you analyse the source and message?

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<tr>
<th>Source</th>
<th>Message</th>
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4.5 APPROACHES TO COMMUNICATIONS RESEARCH

Communication as a field of study is an interdisciplinary subject, borrowing heavily from social and behavioural sciences. Naturally, its research methodology, both in terms of logic and mechanics, is the same as that of social and behavioural sciences. Each approach has its unique applications and its inherent strengths and limitations. No method is uniformly applicable to all kinds of communications research situations; each problem requires the application of a method or combination of methods suitable to its solutions. The different methods available to the communications researcher and their general procedures, merits and weaknesses are briefly outlined in this section.
4.5.1 Historical Method

Although history was once considered the queen of the sciences, the method of history is essentially different from that of the sciences. The scientist makes direct observations, while the historian focuses on the past events. But history is not just a list of chronological events; it is rather an accurate interpretation of relationship between persons, places, times, and events. Historical research mainly depends on documents and records and less upon direct observation. The investigator analyses documents and records and draws inferences. The primary sources of data in historical method are the first-hand accounts reported by an actual observer or participant in the event. These may take several forms: official records, autobiographies, letters, diaries, newspapers, magazines, pictures, paintings, and so on. In the absence of primary sources, historical method often resorts to the use of secondary sources.

In the historical method, the most basic thing is the genuineness of the sources, and the admissibility of data as evidence. The researcher attempts to find out the meaning of the assertions contained in the sources, and the truthfulness of such assertions. Finally, he offers explanations for or tries to understand past events in the light of evidences available in his sources.

Since mass media materials — newspapers, magazines, programme transcripts, and so on — are in themselves primary sources of data, application of the historical method in communications research is popular and widespread.

4.5.2 Experimental Method

Experimentation is the most favoured method of all sciences, and it is regarded as the method par excellence. The method, by its very operations, tends to be objective. It uses procedures of ‘control’ to rule out alternative explanations.

The starting point of any experimentation is formulation of a hypothesis. A hypothesis is a tentative proposition about the relationship between two or more observed phenomena. In research terminology, these phenomena are called variables. For example, one may hypothesize a relation between age and movie attendance by posting that movie attendance is lower among older people. Age and movie attendance are the two variables, and the relation between the two forms a hypothesis.

An experiment is designed and conducted in order to test the hypothesis. The experimental procedure involves manipulating the variable to see the effect of this manipulation on some other variable of interest. The manipulated variable is called independent variable, and the other variable on which the effect of manipulated variable is observed is the dependent variable. The objective of the experiment is then to establish causal links between independent and dependent variables.
The experimental method, in its simplest form, proceeds by:

- administering the independent variable to one group of subjects, called the **experimental group**, and
- withholding the application of independent variable to another group, the **control group**, and
- and observing the differences between the two groups on the dependent variable.

There may be more than one experimental group, if different levels of independent variables are applied to different groups to test the effects of different “dosages” of independent variable on the dependent variable. The experimenter keeps all other things constant or under control except the manipulated variable so as to ensure that the observed differences in dependent variable can be attributed to the manipulated variable. Thus, experimentation makes possible statements of cause of effect relationship between variables.

The method can best be illustrated through a couple of examples. The classic experiment by Hovland and Weiss was conducted to study the relationship between credibility of the sources and opinion change among the receivers. The experimenter selected certain issues which were current at that time and measured the opinions of their subjects on those issues. The subjects then read identical messages on a given issue, but the credibility of the sources of these messages was manipulated by attributing the authorship of these message to different sources. For example, on one issue, one group of subjects was told that the source was Robert Oppenheimer, the Nobel Laureate, and the other group was told it was Pravda, the communist newspaper. Again, the opinion of the subjects was assessed after reading these messages. The changes in their opinion from ‘before’ to ‘after’ was compared and it was found that those who read messages attributed to credible source changed their opinions more than those who read messages from a less credible source.

Another study by Freedman and Fraser was designed to investigate how to make people comply with one’s requests. They went by the logic that it was easier to induce people to accept larger requests, if one could make them accept smaller requests to start with. The investigators first went to housewives and said that they wished to enlist women’s co-operation for a safe driving campaign to submit to the legislators (inducement to accept a small request). Several weeks later, the representatives of these investigators went to the same housewives, and also to another group of housewives who were not contacted earlier for the signature campaign, with a request to put up an ugly looking, unattractive signboard, “Drive carefully”, in their front yards (asking for a bigger request). The investigators compared the number of compliances to the second request (i.e. the bigger request) by both the groups. They found that 55 per cent who had agreed to sign the petition (who had complied with the smaller request) also agreed to display the signboard (the large request), but only 17 per cent of those who were not contacted earlier with the small request agreed with the large request, viz., displaying the signboard. This led to the conclusion that inducing people to accept small requests facilitates in getting them to accept bigger requests. Here also, the investigators manipulated the independent variable (approaching with a small request or not doing so), and measured its impact on the dependent variable, this is, compliance with the larger request.

Although both the preceding experiments followed the same logic, there were vital differences in their procedures. In Hovland-Weiss experiment, the study was done within the four walls of the laboratory, whereas the Freedman - Fraser experiment was conducted in a real life situation. The former was a controlled laboratory experiment and the latter was a field experiment. Also, in Hovland-Weiss experiment the dependent variable (opinions of the subjects on issues) was measured
included in the sample. One must bear in mind that probability sampling is the only approach that makes possible representative sampling plans. The non-probability approaches are only procedures of convenience and much reliance cannot be placed on their findings.

The commonly used probability techniques are: 1. simple random sample, 2. stratified random sample, and 3. cluster sample.

The non-probability techniques include: 1. accidental sample, 2. quota sample, and 3. purposive sample.

Simple random sampling involves listing all the elements in the population and taking a lottery to select the desired number of elements from the totality. The same result can be obtained by selecting cases from the list using a table of Random Numbers. Before using the Table, all the elements in the population are to be listed; then, enter the Table at some random starting point, and move in any direction from that point; then select all those cases that come up until the desired number of cases are obtained.

Stratified random sampling is similar, excepting that following the procedures detailed above, the required number of cases are selected from each of the strata in the population, thereby ensuring adequate representation from each strata of the population.

Cluster sampling, also called multi-stage sampling, involves arriving at the ultimate set of elements to be included in the sample by first sampling in terms of larger groupings (the 'clusters'), again by following procedures of random sampling.

The non-probability procedures are not systematic and may lead to gross errors. Accidental sampling, as the name suggests, picks up cases from the population that happen to be accidentally available to the investigator. Quota samples provide representation to each strata, but within the strata the selection is again accidental. Purposive sampling involves picking up cases that are judged to be ‘typical’ of the population.

It has already been mentioned that the validity of the findings depends on how well the sample is selected. Choosing the right sample — representative of the population — is the basic requisite of a sample survey.

**Questionnaire:** The data in survey research are usually obtained by administering questionnaires or through questions asked in interviews. In any case, questioning the respondents forms the basis of survey research. Success of the survey depends on the nature and quality of such questions. It has often been said that "no survey can be better than its questionnaire". The questions must be relevant to the issue; good questions prompt accurate answers, while poor questions result in unreliable and inaccurate responses. In framing questions, one must avoid double-barrelled, ambiguous, vague, and leading questions. The language must be simple and appropriate to the level of respondents.

There are two basic types of questions: closed-ended and open-ended. Closed-ended questions provide the respondent with a list of alternative answers to choose from. Questions calling for simple 'yes-no', 'agree-disagree' answers or questions with multiple choice type of responses are all closed-ended type of questions. In the open-ended question, the respondent is not provided with any answers from which to choose. He is required to write down his own answers. The advantage of closed type of questions is that they are easy to answer, and answers of different respondents are comparable as they fall into a fixed number of predetermined categories, easy to code and analyze. But the major limitation of the closed-ended questions is that they may provide inappropriate or irrelevant choices, thereby forcing the respondent to make choices not reflecting his real position on the issue. On the other hand, open-ended questions allow the respondents to state what they
know and think. The respondent is free to have his say, and say what he means. The problem with open-ended questions is that the respondent may say too much or too little; verbatim recording is tedious; unstructured answers may lead to different interpretations, and are, therefore, difficult to code. Subjectivity may enter into the data.

The questionnaires must be well designed and attractively laid out. The most important step in designing a questionnaire is to define the problem area to be tackled by the survey, i.e., to decide on the relevant questions. Lengthy, rambling questionnaires are forbidden; a questionnaire should be no longer than is absolutely necessary for the purpose.

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**Check Your Progress 3**

**Note:**

i) Use the space below for your answer(s).

ii) Compare your answer(s) with ones given at the end of the unit.

1) The method of collecting samples is broadly divided into two; a) probability sampling and b) non-probability sampling. Which one is mostly employed by the communications researchers and why?


2) Convert the following open-ended questions into closed-ended type:

   a) In the evening after you return from your office, what do you do?

   b) What kinds of instruments do you usually use to receive messages/communication?

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**Interviews:** Much of survey research data is collected through telephone or personal interviews. A survey interview is a conversation between the interviewer and the respondent with the objective of eliciting the desired information from the respondent. In actuality, it is much more complex than what this simple definition suggests. A successful interview depends on whether the respondent possesses the required information, has proper understanding of the questions, and is motivated to answer the questions accurately.

Interviewing is an art and, therefore, proper training and skill on the part of the interviewer is required. The interviewer must create a permissive situation, a situation which encourages the respondents to voice their frank opinions. The interviewer must establish rapport with the respondent by creating a friendly atmosphere, putting the respondent at ease, and inducing in him a sense of
confidence and confidentiality. The interviewer's job is essentially that of a reporter taking opinions as they come without divulging his own biases. He should note down the responses accurately and, as far as possible, verbatim.

The advantages of interviewing over questionnaires:

- the method can be used with illiterates and young children;
- it yields a better sample of the population compared with the mailed questionnaires; and
- it possesses greater flexibility;
- The interviewer can (a) clarify the doubts (b) probe on open-ended questions, and (c) observe the actual behaviour of the respondent, hence gather additional information about him.

4.5.4 Content Analysis

Content analysis is another commonly used research method in social science, and particularly in communication science. It involves analysis of documents and written records with the objective of describing and classifying. It is regarded as an objective, systematic, and quantitative technique. Although qualitative analysis is permitted at times, qualification of materials is often insisted upon. Essentially, the researcher constructs a set of mutually exclusive and exhaustive categories to analyse documents, and then records the frequency with which each of these categories appears in the documents under analysis.

The first step in content analysis is the selection of a sample of materials for analysis. This requires deciding what materials are relevant to the research topic, and then sampling the actual materials from the totality of the relevant materials following the procedures of sampling described earlier in this unit. The next step is to define the categories that are to be analysed. Examples:

a) Editorials, subject-wise: Political, Economic and Financial, Law and Order, Social and Culture, Sports etc.,


The unit of analysis must be selected; the unit may be each word, each sentence, each paragraph, each theme, each character or actor, or the entire item. The analysis can be made in terms of:

- presence or absence of a content category, the
- frequency with which each category appears (for example: the news items in which our Prime Minister figures),
- the amount of space allotted to the category, or
- the strength and intensity with which the category is represented.

Content analysis is done to study diverse kinds of problems relating to the:

- characteristics of communication sources,
- messages,
- causes and antecedents of these messages, and the
- effects of such messages. Thus, the technique has wide applicability in communications research.

4.5.5 Case Study and Anthropological Approaches

The case study approach, which is quite common in clinical settings, is used to make an in-depth analysis of one subject-to examine several aspects or many characteristics of a single case. By comparison, in survey research, the investigator focuses on fewer characteristics of a large number of subjects. The case study is
undertaken to learn all about a particular case at a given point of time. Although the case studies may provide valuable insights about the subject matter, the findings cannot be generalized to other similar cases. However, the method provides a host of observations, ideas and insights; these can be followed with other types of investigations leading to generalizations.

Anthropological method, like the case studies, involves an indepth analysis of communication behaviours and their contexts. It looks at the situation in a unified way, conceiving it as a whole. The emphasis is on the totality, the underlying assumption being that parts can never be properly understood apart from the whole. The method has been used in SITE studies (Agrawal, 1985).

Check Your Progress 4

Note:  i) Use the space below for your answer(s).

ii) Compare your answer(s) with the ones given at the end of the unit.

In the following two columns, right hand column describes various research methods while the left hand one describes qualities related to these methods. Match them:

<table>
<thead>
<tr>
<th>Qualities</th>
<th>Research Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sees the research elements in a total context</td>
<td>Case Study</td>
</tr>
<tr>
<td>• Mostly uses books, documents, biographies,</td>
<td>Experiment</td>
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<tr>
<td>inscriptions, etc.</td>
<td></td>
</tr>
<tr>
<td>• Studies one element totally</td>
<td>Survey</td>
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<tr>
<td>• Studies many researchable elements and</td>
<td>Anthropological</td>
</tr>
<tr>
<td>collects data through interviews and</td>
<td></td>
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<tr>
<td>questionnaires</td>
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<tr>
<td>• There is always a control group associated</td>
<td>Historical</td>
</tr>
<tr>
<td>with the research</td>
<td></td>
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</tbody>
</table>

4.6 DATA ANALYSIS

Following the procedures described in section 4.4, the investigator makes observations. These observations are the data. The data usually take the form of numbers through some measurement operation; this measurement may be of different kinds and at different levels. At the basic level, measurement involves classification or categorization.

Classification of programme as 'good' or 'bad'; newspaper editors as 'liberal' or 'conservatives'; opinions on an issue as 'pro', 'con' or 'neutral' — these are all examples of classification. Classification only implies that one is not the same as the other, but it does not say that one is greater or better than the other. There is no implication of the magnitude of the characteristic under measurement. At the next level, ranking of objects in terms of magnitude of the characteristic they possess is involved. For example, boys spend more time with newspapers than girls; paper X has better circulation than paper Y. At the highest level, the measurement will be in terms of 'intervals' and ratios. Statements such as boys spend 30 minutes with newspapers and girls spend only 20 minutes; or the younger people attend twice as many movies as the older people, represent measurement at the interval and ratio levels. Such measurements are important from the point of view of data analysis, a detailed discussion of which is beyond the scope of this unit.
Whatever be the nature of data, it must be summarized before meaningful interpretations of it can be made. In the following sections, some common techniques of data analysis are briefly described.

4.6.1 Frequencies and Percentages

To reduce the data to make some sense, one may begin with a frequency count. In other words, count the number of times each observation has occurred in the set of data. For instance, how many respondents have agreed with an opinion statement, how many housewives watch the TV serials regularly, how many times sex themes appear in commercial movies and so on. Consider this hypothetical example. An investigator has asked 300 post-graduate students on a university campus how many times they attended movie shows in a given year. The answers, let us say, range from zero to 50. The frequency analysis takes into account how many among these three hundred respondents, how many have not attended any movie shows at all, how many have attended just one, how many two and so on. One may even group these scores into what are called class intervals, and have categories like those visiting fall between the following ranges 0-4, 5-9, 10-14, and so on. Then count how many cases fall within each of these intervals. This scheme helps to summarize data from the 300 respondents to a manageable size, and provides information as to what number of cases attend how many movies.

The frequencies for each score or for a given class-interval can also be converted into percentages, multiplying the frequency by 100 and dividing the product by the total number of cases. Say there are 30 cases out of 300 attending between 10-14 movies in an year, then 10% of the cases (30 x 100/300) attend between 10-14 movies.

Counting frequencies and calculating percentages, although a simple affair, provide a good deal of information on the sets of data collected.

4.6.2 Averages and Dispersion

The two aspects of any set of data that are basic and important are its central location and its spread or dispersion. Averages are measures of central location, and they typify the whole set of data. Any particular score in the set may be viewed as a certain distance above and below the average. Commonly used averages are: Arithmetic Mean, Median, and Mode.

An Arithmetic Mean is the sum of a set of measurements divided by the number of measurements in the set. In the hypothetical example of section 4.6.1, 300 post-graduate students have given actual or estimates of the number of movies they have
visited during a year. Add up the numbers given by these 300, and divide it by 300, the resulting value is the Mean number of movies attended by the group. That gives a central reference value with which the scores of the respondents may be compared. Another commonly used measure of central location is the Median. It is the mid-point of a set of observations arranged in order of magnitude. In the set of data, half of the observation fall above and the half fall below this mid-point. Mode is another quick, but rarely used measure of central location. Mode is the most frequently occurring value in the set.

The other aspect of a set of data is how the measurements are distributed, i.e. the spread or dispersion of scores in the set. It is possible that there may be heavy concentration of scores or wide variations in a given set of measures. The common indices are the Range and the Standard Deviation. The Range is simply the difference between the highest and the lowest score in the set. The Standard Deviation, on the other hand, is the square root of the mean of the squared deviation scores about the mean of a distribution. This measure, often considered a cornerstone of modern statistics, gives us a basis for probability estimates.

Check Your Progress 5

Note:  

i) Use the space below for your answer(s).

ii) Compare your answer(s) with the ones given at the end of the unit.

1) The following data come from a department library of one of the universities. It gives the number of books borrowed by 25 students during one academic year.

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<tr>
<th>Score</th>
<th>Frequency</th>
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<td>16</td>
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<td>24</td>
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<td>2</td>
</tr>
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<td>11</td>
<td>1</td>
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</table>

1) Make a frequency distribution of scores using convenient class-intervals.

2) Calculate the percent of students borrowing 15 and less books, between 16-21 and 22 and above.

4.6.3 Correlation

Correlation is a measure of relationship between variables. Say we have two sets of measurements taken on the same sample. One measure is an assessments of school achievement and the other is time spent every day on studies. If one students has spent more time on studies, he is likely to have a better measure of school achievement. Similarly, a student spending less time with his studies would be
expected to have a low measure of school achievement. In this case, the two
measure vary together — increment in one measure is associated with concomitant
increment on the second measure — and we would say that the two variables have
a positive correlation. Let us look at another two sets of measurement taken on the
same sample. One measure is again an assessment of school achievement and the
other is the number of movies the student attends every week. A student who
attends a higher number of movies has a lower achievement score, while the one
who watches a lesser number of movies has a higher achievement score. Here, the
two measures vary inversely, that is, a high score on one is associated with a low
score on the other, and vice versa. We would say that the two measures have a
negative correlation.

The correlation is thus an index of relationship, and the index is called correlation
coefficient. Correlation coefficients indicate both the degree and direction of
relationship. The degree of relationship can range from no relationship to perfect
relationship between variables. The direction of relationship may be positive (if two
variables vary together) or negative (if they vary inversely). Thus, the coefficients
can take on the following possible range of values:

+ 1.0 (perfect positive correlation)
0.0 (no correlation)
− 1.0 (perfect negative correlation)

This would mean, that a correlation of + 0.25 is a slightly positive correlation and
a − 0.80 is high negative correlation.

There are different techniques for working out correlation coefficients. The choice
of technique depends on kinds of measurements we have. If the data are category/
classification type, the investigator uses chi-square (x) or contingency coefficients. In
the case of rank order type of data, rank order correlation is used. At the higher
levels involving interval and ratio measures, product-moment correlation is
appropriate.

4.6.4 Statistical Inference and Tests of Significance

An investigator rarely studies an entire population of his interest, rather he takes a
sample of the population for his study. Say, for example, the investigator wants to
know the time spent by the university students on TV viewing. He takes a sample
of the university students (by procedures described in section 4.3.1), and he
ascertains from the sample how much time they devote to watching the TV
everyday. The purpose of the study is to make an inference about the viewing time
of the students at the university. He calculates the mean, and this sample value is
called statistic. The values based on the entire population are called parameters. The
statistic, which is characteristic of sample, provides the basis for estimating
population parameters. The process of estimating parameters from statistics is
referred to as statistical inference.

How good an estimate the sample statistic is of the population parameter is the
most fundamental question in statistical inference. To serve this purpose, statisticians
have developed models and methods for working out estimates of errors and various
tests of significance. To know the details about the logic and mechanics of these
models and methods, the student is advised to refer to the books suggested at the
end of this unit.

4.7 COMMUNICATIONS RESEARCH APPLICATIONS IN THE INDIAN CONTEXT

Research and evaluation in the field of communication in India, especially in
applied areas, such as rural communication and extension, family welfare and
planning, industrial and organizational set-up, have been going on for the last three to four decades. The enormous research output eludes easy generalizations. Nevertheless, some notable trends may be observed.

Most of the studies conducted so far in India are descriptive in nature. History of individual newspapers, biographies of known journalists, debates on issues of freedom of the press and autonomy of the media, problems of professionalism and such issues are the dominant themes of these descriptive studies. Sample surveys on the media audience, their media behaviours, and opinions on various issues form another dominant category of studies. Readership surveys, audience profile studies, opinion polls, media effect studies, (using sample survey techniques), are quite common. There is an abundance of content analysis studies of the media messages, often lacking in practical relevance. Experimental research to test theoretical propositions or hypotheses is sadly lacking.

Altogether, much research has gone into the role of communication in the national development process. Diffusion of agricultural innovations, problems of rural communication, extension education, family planning and welfare have been popular areas generating a vast amount of research and a fund of information. But these research facts have not been systematically collated and theoretically integrated, thus limiting the utility of these findings. A landmark in the Indian communications research is the Satellite Instructional Television Experiment (SITE) which was “one of the largest techno-social experiments ever conducted in human history”. It assessed the use of technology for instructional purposes.

Analyzing the trends in communications research in India, Yadav made a series of observations, and some of them are reproduced here:

1) The studies on newspaper and press in general were more in number than the studies of the other media. But in recent years, the number of studies on the TV and the mass media for communication in general, have substantially increased.

2) The sample survey was by far the most common research method followed.

3) Traditions of empirical research have gained strength over the years.

4) Such issues as rural communication, extension, and family welfare have received a fair amount of attention from communication researchers.

5) Although there is now, comparatively, a lot more sophistication in research approach and methodological rigour in the way communication studies are conducted, yet there is a lot more to be desired in this regard.

You may now go back to Activity-1 redo the exercise to find out how your views have changed.

<table>
<thead>
<tr>
<th>Activity 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) To know the media habits of high school children in a big city, a sample survey is intended.</td>
</tr>
<tr>
<td>a) Specify how you will select a cluster sample from the population of high school children in the city.</td>
</tr>
<tr>
<td>b) Prepare a questionnaire to elicit their responses about media utilization in terms of time spent, content preferences and uses.</td>
</tr>
</tbody>
</table>

### 4.8 LET US SUM UP

Let us sum up the points discussed in this unit:

1) Communication is a process involving a number of interacting elements. The study of the process — the nature of elements and their interactions is the focus of communications research.
2) The scope of communications research is delineated in terms of broad areas: source, message, channel, receiver, effect/process studies.

3) Communications research methods are more or less the same as those of social and behavioural science methods. Each method has its unique applications, merits, and limitations.

4) Some basic techniques of data analysis have been outlined.

5) There has been a vast amount of applied communications research activity in India, but the findings are not systematically collated, not theoretically integrated. A lot more is desired by way of methodological rigour and sophistication.

4.9 GLOSSARY

Close-ended question : A question provided with response alternatives.

Control group : A group of subjects to whom the application of a particular treatment (independent variable) is withheld.

Correlation : The direction and degree of relationship between two variables; the degree of simultaneous or concomitant variation of two variables.

Dependent Variable : A phenomenon supposed to be influenced, affected, or caused by some other phenomenon manipulated by the investigator.

Independent Variable : A phenomenon manipulated by the experimenter in order to determine its effect on some other phenomenon.

Experimental group : A group of subjects to whom a particular treatment or level of treatment (independent variable) is applied.

Hypothesis : A statement or a tentative proposition of potential relationship between two or more variables.

Open-ended question : A question provided with no response alternatives.

Population : An aggregate of elements that possess certain defined characteristics or meet certain specifications.

Sample : A subset of elements chosen from the population for study.

Simple random sample : A probability sample in which each element or each combination of elements has an equal chance of being selected.

Stratified sample : A probability sample in which elements are selected from each strata a strata being a subgroup of the population sharing one or more characteristics.

4.10 FURTHER READING


**4.11 CHECK YOUR PROGRESS : MODEL ANSWERS**

**Check Your Progress 1**

1) Communication is a process in which a message is imparted by a source to a receiver and again from the receiver to the source. This goes on till the process of receiving and imparting of message is completed. Therefore, there is always a question regarding the soundness of their process and the behaviour of the elements involved in the process. Hence, research is required to find answers to the pending questions.

2) The areas of communications research are (a) the source/communicator, (b) the medium/channel, (c) the content/message (d) the receiver/audience, and process/effects. Besides these, there are various macro-level areas of considerable interest for research. They could be (a) the political economy of mass media (b) the culture creation and recreation, (c) the social background in which communication operates, (d) the neo-colonial aspects of mass media operations.

3) **Source**

   - Credibility
   - The background
   - The rationale for choosing the medium
   - The appropriateness of the medium

   **Message**

   - clarity
   - presentation
   - reliability
   - the arrangement of the content

**Check Your Progress 2**

1) a) official records  
   b) personal diaries  
   c) inscriptions  
   d) newspapers  
   e) drawings

2) a) Films of Satyajit Ray  
   b) Writings of Satyajit Ray  
   c) Accounts of him by contemporaries  
   d) Newspapers, magazines, journals  
   e) Accounts of him by family members

3) a) variable  
   b) hypothesis  
   c) C.1 experiment group  
   C.2 control group

**Check Your Progress 3**

1) Probability sampling method is mostly employed by the communication researchers.

   In the probability sampling technique, each and every researchable element has an equal opportunity to be included in the sample. This ensures the reliability and validity of the outcome of any research study.
2) a) [ ] read newspapers/magazines  
[ ] read story books  
[ ] watch television  
[ ] listen to radio  
[ ] teach children  
[ ] play cards/carom etc.  
[ ] take family members out for a walk  
[ ] go for marketing  
[ ] any other (please specify):

b) [ ] letters  
[ ] telephone  
[ ] radio  
[ ] television  
[ ] fax machine  
[ ] telex  
[ ] telegram  
[ ] any other (Please specify):

Check Your Progress 4

<table>
<thead>
<tr>
<th>Qualities</th>
<th>Research Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sees the research elements in its total context</td>
<td>Anthropological</td>
</tr>
<tr>
<td>• Mostly uses books, documents, biographies, inscriptions etc.</td>
<td>Historical</td>
</tr>
<tr>
<td>• Studies one elements totally</td>
<td>Case Study</td>
</tr>
<tr>
<td>• Studies many researchable elements and collects data through interviews and questionnaires</td>
<td>Survey</td>
</tr>
<tr>
<td>• There is always a control group associated with the</td>
<td>Experimental</td>
</tr>
</tbody>
</table>

Check Your Progress 5

1) Cluster  

<table>
<thead>
<tr>
<th></th>
<th>No. of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) 0-10</td>
<td>6</td>
</tr>
<tr>
<td>ii) 11-20</td>
<td>12</td>
</tr>
<tr>
<td>iii) 21-30</td>
<td>6</td>
</tr>
<tr>
<td>iv) 31- above</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

2) Less than 15 books = 32%  
   between 16 — 21 books = 44%  
   between 22 — above = 24%