MEDIA RESEARCH (MMC- 205) **CONTENT**

About Writers and Vetters:

Prof. Manoj Dayal
Dean, Faculty of Media Studies,
GJUST, Hisar, Haryana – 125 001

Sh. M. R. Patra, Lecturer,
Department of C M& T,
GJUST, Hisar, Haryana – 125 001

Dr. P. K. Jena, Lecturer,
Department of C M& T,
GJUST, Hisar, Haryana – 125 001

Dr. Ved Paul, Faculty,
Department of Business Economics,
GJUST, Hisar, Haryana – 125 001

Prof. Sunil K. Behera
Department of Jounalism & Mass Communication,
Berhampur University, Berhampur, Orissa.

Prof. B. K. Kuthiala
Chairperson, Department of Mass Communication,
Kurukshetra University, Kurukshetra, Haryana

Converted in to SIM format by: Sh. M. R. Patra

MEDIA RESEARCH (MMC- 205)

No.	Lesson	Writer	Vetter
01	Introduction to Research	Prof. (Mrs) S. Gandhi	Prof. Manoj Dayal
02	Media Research: Role & Functions	Prof. (Mrs) S. Gandhi	Prof. Manoj Dayal
03	Methods & Practice of Media Research	Sh. M. R. Patra	Sh. S. K. Singh
04	Theory & Practice of Random Sampling	Sh. S. K. Singh	Prof. B.K.Kuthiala
05	Research Design	Prof. Sunil K. Behera	Prof. Manoj Dayal
06	Questionnaire	Prof. Sunil K. Behera	Prof. Manoj Dayal
07	Content Analysis	Prof. B. K. Kuthiala	_____
08	Advertising Research	Sh. M. R. Patra	Sh. S. K. Singh
09	Statistical Methods in Media Research	Dr. Ved Paul	Prof. B.K.Kuthiala

About Writers and Vetters:

Prof. Manoj Dayal, Dean, Faculty of Media Studies, GJUST, Hisar – 125 001

Sh. M. R. Patra, Lecturer, Department of C M& T, GJUST, Hisar – 125 001

Dr. P. K. Jena, Lecturer, Department of C M& T, GJUST, Hisar – 125 001

Dr. Ved Paul, Faculty, Department of Business Economics, GJUST, Hisar – 125 001

Prof. Sunil K. Behera, Department of J & M C, Berhampur University, Berhampur, Orissa.

Prof. B. K. Kuthiala, Chairperson, Department of Mass Communication, K U K, Haryana

CONVERTED IN TO SIM FORMAT BY: SH. M. R. PATRA

INTRODUCTION TO RESEARCH

Writer: **Prof. (Mrs.) Sushma Gandhi**

Chairperson, Department of C M & T, GJUST, Hisar, Haryana.

Vetter: **Prof. Manoj Dayal**

Department of C M & T, GJUST, Hisar, Haryana.

Converted in to SIM format by: Sh. Mihir Ranjan Patra

Department of C M & T, GJUST, Hisar, Haryana.

LESSON STRUCTURE:

This lesson shall provide an introduction to research in general. We shall discuss about the need, role and importance of research. Finally, we shall focus on various aspects of research. The lesson structure shall be as follows:

1.0 OBJECTIVES:

In this lesson we shall discuss about research in general. The specific objectives of this lesson are:

- ***To Have an Introduction to Research***
- ***To Know About the Need, Role, and Importance of Research***
- *To Understand the Major Aspects of Research*

1.1 INTRODUCTION:

Curiosity is the basic motivation for research. It is said that ever since Adam tasted the forbidden fruit of knowledge out of curiosity, he became the first researcher. Since then, the human quest for knowledge has continued. From the beginning of time, curious people have been trying to unveil the mysteries of nature, life and the cosmos.

Man has looked upon the stars, skies and seas with a sense of awe and wonder. From the age of 'stones and spear' to the age of electricity and relativity; and now to the present days of information technologies, man has been discovering new frontiers of knowledge at a terrific

speed. He has been cutting across the physical confines of the globe. Rockets and space ships are the new vehicles for travel. Super computers are new means of working and expanding our knowledge of the universe and beyond. With the human spirit of enquiry, man has ventured into realms of science and research where *angels fear to tread*.

In this lesson, we shall try to get an introduction to research. In addition, we shall discuss about some major aspects of research.

1.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- ***Research: An Introduction***
- ***Need, Role, and Importance of Research***
- *Major Aspects of Research*

1.2.1 RESEARCH- AN INTRODUCTION:

All research is a quest for *ordered or systematic knowledge*. It may be an observational study of natural phenomena or a rational study of the relations between the concepts in which these phenomena are expressed. Knowledge is *gathered, organized* and *systematized*. It is then *tested* and *validated* with the help of research tools.

Research often starts with observation. Observation is in intelligent way to making use of our sensory apparatus. It provides an insight to know and understand facts, relations and events. If the observation is precise, the results will be more reliable. In addition to observation, many other research tools and methods are used.

The term research, to some means an attitude of enquiry. It is an honest, intelligent and exhaustive quest for facts. It is the quest for the unknown, and also about the known. Research is done to reveal the secrets of this universe.

Research is the process of arriving at *dependable solutions of problems* through *planned and systematic collection, analysis and interpretation of data*. Research sometimes tries to find out the conditions under which certain phenomenon occurs. Research is an aspect of scientific quest and now has become a major discipline.

It is a systematic way of collecting, classifying and analyzing information, either quantitative or qualitative. According to Rusk, "Research is a point of view, an attitude of enquiry or a frame of mind." It is an attempt to elicit facts and analyze them once they have been collected to get solutions for a variety of problems.

1.2.2 NEED, ROLE AND IMPORTANCE OF RESEARCH:

Rummel considered research as "an endeavour to discover, develop and verify knowledge". Its main aim is the discovery of the *truth*. Research means a systematic and refined technique of thinking. It involves “employing of specialized tools, instruments and procedures to obtain more adequate solutions of problems than would be possible with ordinary means.” This way research implies a systematic and objective analysis. It is a recording of controlled observations with an aim to develop generalizations, principles and theories.

Some of the equipments of a researcher are as follows:

- Developed scholastics,
- Accurate observation,
- Integrity,
- Willingness to spend long hours,
- Rational thinking.

Long hours are required to collect and study all forms of acts, data and evidence before arriving at conclusion.

The first four aspects are important. But above all, the researcher must cultivate the ability think rationally. This is the ability to recognize causal relationships. Researchers must also have originality and objectivity in thinking.

Any research should be based on a unifying theory or a conceptual system. A series of often loosely connected observations lead to a more systematic programme of research. The maturity of judgement comes after a wide experience of the field. Research can be:

- *Basic Research,*
- *Applied Research,* and
- *Action Research*.

BASIC RESEARCH:

It is designed to add organized knowledge to the body of scientific knowledge. It does not necessarily produce results of immediate practical value. It is either concerned with the formulation of theory or contributes to the existing body of knowledge. It is also termed as fundamental or pure research. Its chief concern is to discover knowledge for the sake of knowledge and not for the sake of application of the findings or even for their social usefulness. Simply put, basic research is generally done for academic purposes.

APPLIED RESEARCH:

Applied research aims at improving a theory, product or process. It is testing of theoretical concepts in specific problem situations. Its concern is generally with the solution for problems.

ACTION RESEARCH:

Action research is not much concerned with the development of theory or its general application. It concerns itself with an immediate problem in a specific setting. Action research aims at improving the social reality. It's finding can be carried into effect by the administrator and sometimes, even the layman. Its emphasis, therefore, is on experience in which the administrator and the layman can participate creatively in the research process.

While pure research is done by outside specialists, action research in done by those who are taken to evaluate their own work situation.

1.2.3 MAJOR ASPECTS OF RESEARCH:

From the above, it is clear that research involves carefully designed procedures. It is thus, a systematic process of study. And all research studies have the following characteristics:

- Research is *objective* and *verifiable*. The data collected can be *tested* and *validated*.
- Research involves an *empirical process*. It is based upon empirical evidence or observable experiences. It focuses on such problems as can be verified through empirical observation.

Research calls for *rigorous and valid data gathering procedures*. These may include mechanical, electronic, clinical or psychometric devices together with observation, description and analysis of data. To ensure precise description and explanation, it can take the help of quantitative measuring devices also.

Research can be *replicative* and transmitted in different settings and in different times. In trying to replicate, the existing concepts and processes can be confirmed or it may lead to questions about the conclusions of previous studies.

Research has a *specific purpose* of findings solutions to some problems. It seeks to develop generalizations, principles, and theories. Some times, it even tries to predict future occurrences. Research, however, is always goal-oriented.

Research requires *diligent observation* at the stage of collection of facts. It involves time,

energy, efforts, manpower, and money. The information so gathered has to be recorded as precisely as possible with a view to paving the way for furthering research.

The procedures, methods and approaches to be adopted for research have to be *carefully chosen*. They have to be both *vigorous and rigorous* involving deep analysis.

Research calls for *patience and diligence*. An impatient mind is not fit for research. Hurry and impatience hamper genuine research. A good researcher needs patience, perseverance and the ability to challenge the established knowledge or the urge to find new things.

Good research must be *purposive*. It must be *carefully planned* and *timely executed.*

The researcher must have *foresight.* Research also requires *an open mind and clarity of purpose*. Everything must be *planned with utmost precision*. Its objectives, hypotheses and methodologies must be made clear before hand.

Objectivity is the chief trait of all good research. Personal biases must be kept out from research studies as far as possible. The emphasis has to be on testing and finding out the ultimate reality.

We accept something as truth only when it is *verifiable*. Only then it becomes *credible*. What is true in USA must be true in India under similar conditions. Without verifiability of the processes, procedures and conclusions, research is not significant.

Research is a *professional affair involving systematic, accurate and expert handling* of the research problem. Data has to be gathered through systematic planning. It has to be done by having control on data collecting procedures. The collected data as to be subjected to rigorous analysis, Inferences and generalizations have to be stated in clear precise language.

A good research study should have *focus on facts*. A balance has to be struck between quantitative and qualitative facts. Facts become significant only when interpreted in the light of accepted standards and assumptions, which are normative in character. It is only by interpretation and evaluation methods, as determined by the purpose, facts could be related with each other in the wider context.

All good research presupposes *insight and imagination* in the researcher. These are needed to interpret, explain and draw inferences. They are equally necessary for planning, data collection and interpretation and report writing, etc. Using insight and foresight can solve many puzzles related to research. Good research should adopt *interdisciplinary approach*. Most of the disciplines are interconnected in one way of the other.

A good research should *contribute to the widening of knowledge* and to solution of problems confronting human society. Ethical questions relevant and highly import in scientific

research, which is concerned with the discovery of truth.

There are many reasons why should be undertake any study of human problems with a spirit of scientific enquiry and research. Some of the most common reasons can be enumerated as follows:

- Research enables one to think *rigorously and critically*. It trains researchers to *carefully examine* research evidence that is advanced for acceptance in variety of popular and scholarly applications.
- Research equips one to learn how *to find answers to questions* facing mankind.
- Research enables one to *acquire skills and techniques to study problems* in specific social field situations. Researchers also learn how to find answers through research.
- As a result of advances in science, technology and other fields, research has become imperative of our times. Without research, the development and discrimination of knowledge is not possible. Research contributes innovative ideas necessary for professional competence and growth.

Here are a few more points about research:

- Research contributes to new facts and generalizations. It keeps the professional researcher abreast with the latest in their discipline. It helps him to develop, interpret and reinterpret facts and concepts in the light of changing situations.
- Research creates an urge for taking further strides in one's discipline. It modifies all partial theories and helps dispel myths and antiquated practices by examining them on the anvil of scientific validity. Without research there is no progress, no growth of knowledge.
- Research requires mastery over such processes as observing events with a clear vision, handling sophisticated research tools or equipment, knowledge of various research methods, treating data statistically, analyzing and interpreting results and writing research reports. These qualities help a lot in cultivating, refining and training the mind of the researcher. All this can be achieved by practice rather than precepts.

1.3 SUMMARY:

- All research is a quest for *ordered or systematic knowledge*. It may be an observational study or a rational study.
- Research is the process of arriving at dependable solutions of problems through the planned

and systematic collection, analysis and interpretation of data. Research tries to find out the conditions under which certain phenomenon occurs.

- Research is an aspect of scientific quest and now has become a major discipline. It is a systematic way of collecting, classifying and analyzing information, either quantitative or qualitative.
- Basic research is designed to add organized knowledge to the body of scientific knowledge. It does not necessarily produce results of immediate practical value. It is either concerned with the formulation of theory or contributes to the existing body of knowledge. It is also termed as fundamental or pure research. Its chief concern is to discover knowledge for the sake of knowledge and not for the sake of application of the findings or even for their social usefulness. Simply put, basic research is generally done for academic purposes.
- Applied research aims at improving a theory, product or process. It is testing of theoretical concepts in specific problem situations. Its concern is with the solution of immediate problems.
- Action research is not much concerned with the development of theory or its general application. It concerns itself with an immediate problem in a specific setting. Action research aims at improving the social reality. It's finding can be carried into effect by the administrator and sometimes, even the layman. Its emphasis, therefore, is on experience in which the administrator and the layman can participate creatively in the research process.
- Research is objective and verifiable. The data collected can be tested and validated.
- Research involves an empirical process. It is based upon empirical evidence or observable experiences. It focuses on such problems as can be verified through empirical observation.
- Research calls for *rigorous and valid data gathering procedures*. These may include mechanical, electronic, clinical or psychometric devices together with observation, description and analysis of data. To ensure precise description and explanation, it can take the help of quantitative measuring devices also.
- Research can be *replicative* and transmitted in different settings and in different times.
- Research has a *specific purpose* of findings solutions to some problems. It seeks to develop generalizations, principles, and theories.
- Research requires *diligent observation* at the stage of collection of facts. It involves time, energy, efforts, manpower, and money.
- Research calls for *patience and diligence*. An impatient mind is not fit for research. Hurry and impatience hamper genuine research.

- Good research must be *purposive*. It is *carefully planned* and *timely executed.*
- Researchers need *foresight along with an open mind and clarity of purpose*.
- *Objectivity* is the chief trait of all research. Biases have no place in research.
- Research is a *professional affair involving systematic, accurate and expert handling* of the research problem. Data has to be gathered through systematic planning.
- Good research study should have *focus on facts*. A balance has to be struck between the quantitative and qualitative facts. Facts become significant only when interpreted in the light of accepted standards and assumptions, which are normative in character.
- All good research presupposes *insight and imagination* in the researcher. These are needed to interpret, explain and draw inferences.
- Good research should *contribute to the widening of knowledge* and to solution of problems confronting human society.
- Research enables one to think *rigorously and critically*. It trains researchers to *carefully examine* research evidence that is advanced for acceptance in variety of popular and scholarly applications. Research enables one to *acquire skills and techniques to study problems* in specific social field situations.
- Without research, the development and discrimination of knowledge is not possible. Research contributes to innovative ideas necessary for professional competence and growth. Research contributes to new facts and generalizations. It keeps the professional researcher abreast with the latest in their discipline.
- Research creates an urge for taking further strides in one's discipline. It modifies all partial theories and helps dispel myths and antiquated practices by examining them on the anvil of scientific validity.
- Research requires mastery over such processes as observing events with a clear vision, handling sophisticated research tools or equipment, knowledge of various research methods, treating data statistically, analyzing and interpreting results and writing research reports.

1.4 KEY WORDS:

Research: The term research, to some means an attitude of enquiry. It is an honest, intelligent and exhaustive quest for facts. It is the quest for the unknown and also about the known. Research is done to reveal the secrets of this universe. Research is the process of arriving at dependable solutions of problems through the planned and systematic collection, analysis and interpretation of data. Research tries to find out the conditions under which certain phenomenon

occurs. Research is an aspect of scientific quest and now has become a major discipline. It is a systematic way of collecting, classifying and analyzing information, either quantitative or qualitative.

Requirements for Research: Research is the recording of controlled observations with an aim to develop generalizations, principles and theories. Some of the equipments of a researcher are as follows: developed scholastics, accurate observation, integrity, willingness to spend long hours, and rational thinking.

Basic Research: It is designed to add organized knowledge to the body of scientific knowledge. It does, not necessarily produce results of immediate practical value. It is either concerned with the formulation of theory or contributes to the existing body of knowledge. It is also termed as fundamental or pure research. Its chief concern is to discover knowledge for the sake of knowledge and not for the sake of application of the findings or even for their social usefulness. Simply put, basic research is generally done for academic purposes.

Applied Research: Applied research aims at improving a theory, product or process. It is testing of theoretical concepts in specific problem situations. Its concern is with the solution of immediate problems.

Action Research: Action research is not much concerned with the development of theory or its general application. It concerns itself with an immediate problem in a specific setting. Action research aims at improving the social reality. It's finding can be carried into effect by the administrator and sometimes, even the layman. Its emphasis, therefore, is on experience in which the administrator and the layman can participate creatively in the research process.

Characteristics of Research: Research is objective and verifiable. The data collected can be tested and validated. Research involves an empirical process. It is based upon empirical evidence or observable experiences. It focuses on such problems as can be verified through empirical observation.

Research and Researcher: Research enables one to think *rigorously and critically*. It trains researchers to *carefully examine* research evidence that is advanced for acceptance in variety of popular and scholarly applications. Research enables one to *acquire skills and techniques to study problems* in specific social field situations. Without research, the development and discrimination of knowledge is not possible. Research contributes to innovative ideas necessary for professional competence.

Benefits of Research: Research contributes to new facts and generalizations. It keeps the professional researcher abreast with the latest in their discipline. Research creates an urge for

taking further strides in one's discipline. It modifies all partial theories and helps dispel myths and antiquated practices by examining them on the anvil of scientific validity.

1.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. What do you mean by media research? Discuss the role and importance of media research.
2. Discuss the various types of media research in detail.
3. Why is media research required? Discuss.

1.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*

M. A. Mass Communication (2nd year)

MEDIA RESEARCH MMC 205 Lesson: 2

MEDIA RESEARCH - ROLE AND FUNCTIONS

Writer: Prof. (Mrs) Sushma Gandhi

Chairperson, Department of C M & T, GJUST, Hisar, Haryana.

Vetter: Prof. Manoj Dayal

Department of C M & T, GJUST, Hisar, Haryana.

Converted in to SIM format by: Sh. Mihir Ranjan Patra

Faculty Member, Department of C M and T, GJUST, Hisar, Haryana.

LESSON STRUCTURE:

This lesson shall provide an introduction to media research. We shall start with the differences between social research and media research. Then we shall concentrate on feedback and feed forward studies. Finally, we shall try to learn the importance of media research as a tool of reporting. The lesson structure shall be as follows:

2.0 OBJECTIVES:

In this lesson we shall broadly discuss about media research. The specific objectives of this lesson are:

- ***To Get An Introduction to Media Research***

- ***To Differentiate Between Social Research and Media Research***
- ***To understand Feedback and Feed Forward Studies***
- **To Know How to Use Media Research as a Tool of Reporting**

2.1 INTRODUCTION:

Media research is the study of the social, psychological and physical aspects and effects of the different mass media. For example, how much time do people spend with a particular medium? Whether it has the effect of bringing about changes in the perspectives of people? Does the use of medium have any harmful effects? Whether these effects are because of technology or the programme contents. What the media users want and expect to hear or read or see and experience?

In this connection it is also researched whether a medium can provide information and entertainment to more and different types of people. In what way, new technology can be used to improve or enhance the sight or sound of the medium? How is it possible to change the content or programming to make it more valuable effective and entertaining?

In this lesson, we shall discuss about various aspects of media research.

2.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- ***Media Research: An Introduction***
- ***Social Research and Media Research Differentiated***
- ***Feedback and Feed Forward Studies***
- ***Media Research as a Tool of Reporting***

2.2.1 MEDIA RESEARCH- AN INTRODUCTION:

Media research includes a whole range of study about the development of media, their achievements and effects. It includes the methods used in collecting and analyzing information with regard to newspapers, magazines, radio, TV, Cinema or other mass media. It also concerns with an expanded discussion of the scientific methods of research. While studying any medium of communication we may ask series of questions.

- **What is the nature of the medium?**
- **How does it work?**

- **What technology does it involve?**
- **How is it different or similar to any other media in any ways?**
- **What function and/or services does it provide?**
- **How much does it cost?**
- **Who will have access to the new medium?**
- **Is this medium effective?**
- **Can its performance be improved?**

Media research also accumulates information about the uses of the mass media and also the users of the mass media. In this connection we may ask:

- **How the people use a medium or the various media?**
- **Whether it is used for information only and/or for entertainment and education also?**
- **Which category of people use the different media more and why?**
- **What gratification do the media provide?**
- **What types of uses the media are put to?**

We have been discussing about too many questions. Well, that is what research is all about. A researcher has to have a highly inquisitive mind full of questions as he or she tries to find valid answers to these questions. Research is a never-ending process. A research project, which is originally designed to answer one series of questions, may finally give rise to a new set of questions no one had thought of before.

If we take radio, there can be several studies this medium.

- ***On the uses of radio*: What specific moods radio listening generates?**
- ***Effect of radio,***
- ***Improvement in the broadcasting technologies.***

During *World War I*, Harold Lasswell studied the nature of propaganda from a stimulus-response point of view. He thought that media could exert very powerful influence over their audiences. Some experts were of the opinion that mass communication, to be effective, need only transmit messages to an audience. By doing so they would produce preplanned and almost universal effect. This concept was later named as the *Hypodermic*

***Needle Model of Communication*. The model is deficient in one very significant respect that it did not take into account the individual differences among people.**

A lot of media related research is done for practical application purposes. From the fifties and sixties, advertisers have been using media research to devise ways to persuade potential customers to buy products and services. As a result, a large number of media studies were conducted on message effectiveness. *Demography, and size of audience, role of advertising in achieving higher degree of acceptance and sell, frequencies of message to persuade potential customers and selection of media that best suited to reach the target audience* were some of the advertising related media research areas.

In the seventies and eighties, a new trend in media research set in. Several studies focused on the effects of the media on the public, including the effects on children. Many investigations relating to violence and sexual content in television programmes come in this category. Researchers also studied the positive and pro-social as well as the negative and antisocial effects of television.

The competition among different media for audience-share and advertising-revenue has led to the growth of research. Now media research has grown to be highly sophisticated. It utilizes long-range plans. Research is, in a way, a tool in the *management-by-objective* process. There is an increasing dependency on data to support the decision-making process. Even programme producers also seek relevant research data to develop the creative side of their programmes.

Mass media are now heading towards audience fragmentation and massive demassification has set in.

To survive, the media requires information about the consumer's changing tastes and values, about shifts in demographic pattern. Finally, media need to understand the various trends in life styles of target audiences:

As a result of audience fragmentation in the mass media there is a keener focus on *trend studies* concerning new behaviour patterns. Besides, there is also a trend towards *image studies*, which investigate how people perceive media and their environment. Then there is also a shift towards *segmentation studies*, which provide explanation of types or groups of people. Now in the area of media research, these types of researches are conducted which were previously considered the sole preserve of marketing, psychology and sociology.

In recent years, mass media research included the various psychological and sociological aspects of mass media. For example, many studies are conducted on the psychological and emotional responses to television programmes and music played and broadcast by radio and television.

Today in media research, computer modeling and other sophisticated computer analysis including multimedia applications have become commonplace.

2.2.2 DIFFERENCES BETWEEN MEDIA RESEARCH AND SOCIAL RESEARCH:

The difference between media research and social science research are in fact one way of looking at two related phenomena, namely, society and media. Both rely on the careful systematic collection and analysis of data. Both strive for objectivity while recognizing the importance of personal interpretation by experienced professionals in the respective fields. Most often they employ the same methods for data gathering and analysis.

The real difference lies in the purpose. The media research aims at keeping the public informed about the events deemed important by them. On the contrary, social scientists are interested in understanding and explaining human social behaviour. Their focus is on grasping how social institutions including mass media institutions functions in actual terms. Some social scientists are more concerned with practical problems rather than developing abstract, theoretical understanding. While both are interested in generating knowledge, the primary goal of media research is communicate it.

Many studies conducted by media expert and social scientists are complementary to each other. They help us to understand modern societies. They tell us a lot about what is happening in the society and in the media. They also inform us about the effect of the news media on public opinion and politics.

Media research can help us understand the ways in which media can meet the needs of the audience. The answer to the above question can help us manage media organizations much better from a business point of view. It can make the media more socially responsible, particularly if communication professionals and media consumers become more aware about the problems the society is facing at present. This will help them make better decisions not only to manage and regulate the media effectively, but also to insightfully deal with social and political issues.

Since social sciences deal with issues more generally by using, social scientific approaches, it will not answer most of the immediate questions. However, it can provide important insights about the goings on in the society.

Media research both reflects and helps shape our perceptions of the appropriate roles of media professionals, media institutions, groups and public figures. It helps teach us what issues are important. It provides us with adequate information to form opinions.

The influence of media on modern societies is very powerful but it is not a one-way. Social sciences research also affects the mass media and media organizations, particularly in contexts like- social values and cultural legacies. Social sciences research can also help us understand how different government are influencing media. The other important areas covered are how the media influence our thinking, what role they play in everyday life and how media institutions vary from society to society. These are all important and meaningful areas of research.

The methods to study the media have been borrowed from social sciences like Sociology, Psychology and Anthropology, etc. Empirical methods, widely used in Economics, are very much in use in today's media research.

Media research, like social science research, uses both qualitative and quantitative methods. It uses qualitative and interpretative methods to summarize findings in words. It uses quantitative or statistical methods to summarize findings in numbers.

The impact of communication research as in case of the role of the electronic media on problem of intercultural communication including that between subcultures in modern multi ethnic societies have been extended to a great extent as a result of the use of social scientific methods.

Media technologies like computers have also contributed a lot to changes in the society. At a functional level, these technologies are used to produce desktop published materials, as a new commercial mass medium in the form of videotext, and are direct links between individuals in the form of electronic mail.

The electronic networks are creating communities that are physically dispersed across a country or around the world, but are connected through machines. These computer and Internet-linked virtual societies with new kinds of experiences have created an important area of research. This is what a growing number of today’s social scientists and media researchers are exploring.

There is an increasing use of computers and other technologies for communication research. From research design preparation, to data collection, to tabulation, to data analysis, these modern technologies are being increasingly used.

Other areas in which both social scientists and media researchers are interested pertain to the relationships among gender and ethnic stereotypes. They are concerned with the portrayals of these groups in the mass media. Also they study this issue with a focus on the impacts of media across national and cultural boundaries. Both media researchers and social scientists are focusing on the ways to increase the diversity and representativeness with a view to enriching the context of democracy itself.

Media and social sciences research are also concerned with the ever-growing relationship between media and society as a result of the introduction of new technologies. How the both disciplines will respond to this new challenge and in what areas they both will develop to achieve a higher understanding of the human self and society is a pivotal question.

2.2.3 FEEDBACK AND FEEDFORWARD STUDIES:

Communication, by definition, is a two-way process. It is a co-operative and a joint effort. It is a mutual experience. It is an exchange between two parties- a sender and receiver. For the communication experience to become complete, what we need is a response to the message of the communicator. That response, when it reaches back the sender, is called feedback.

In interpersonal Communication, the sender and receiver interact naturally, directly and immediately. They constantly interchange roles- as sender and receiver. But in mass communication, the situation is different. The response of the audience becomes meaningful only if it reaches the sender. The different means of feedback include writing a letter, making a phone-call or sending an e-mail or SMS, canceling a subscription, etc. Turning of the TV set is a reaction. But it does not reach the sender. In view of the distance, time and space between the communicator and the audience, mass communication feedback is indirect, delayed, often cumulative and rarely representative. Thus media organizations try to collect feedback on their own. But the process of collecting feedback is immensely time consuming, and involves enormous expenses.

The audiences of the mass media are usually very large. Any feedback to be worthwhile has to come from a representative sample of the total population. It must be statistically represent the feelings and actions of the total audience.

Sampling (borrowed from the social sciences) is a statistically valid technique; this is used extensively in mass communication survey research. Sampling represents a portion of the population and is used to collect detailed responses.

The telephone provides immediate feedback because it can tell what an individual is doing at the time of phone call. This method is fast simple and inexpensive.

***Telephone recall* is another method, which is used for collecting audience data, primarily for programme viewing on TV.**

Then there is the *diary method*. Here respondents keep record of their own or their family's use of media. It gives detailed information about viewers' habits and consumers' behaviour.

Also there is the mechanical device called the *audiometer* or the *people's meter* that records the minute-by-minute use of the TV sets. It supplies the information whether the set is on and the station or channel to which it is tuned. However, it does not provide data about who the viewers are, or how many of them are watching.

FEED FORWARD:

Another important aspect of media research is feed forward. This involves collection and interpretation of information about media contents before they are published or broadcast. One technique used for this is preview theatre. Here random samples of people are shown various TV programmes and advertisements, etc., in a theatre. They are made to respond to the messages by pushing buttons or turning dials signaling like or dislike feelings. This method provides data that show how people react at different stages of the message, not simply at the end. This method is also used in motion picture "previews." The methods also employed in sophisticated ways involving detailed audience questionnaires and follow up interviews with selected audiences.

While the diary method and the mechanical device (people meter) provide delayed feedback, personal interviews and telephone surveys are used as a speedy method of having broadcast audience information.

2.2.4 MEDIA RESEARCH AS A TOOL OF REPORTING:

Media research makes use of scientific methods of research. It aims at providing an objective, unbiased evaluation of data. First the research problem is identified, and then a prescribed set of procedures of research is followed to investigate the problem. Only thereafter comes report of the findings.

Viewed thus, media research is an objective and systematic way of collecting information. News reporting on the other hand, tries to collect information and present them in an objective and fair manner. The objectives of both media research and news reporting are the same. The difference lies in the processes involved. Media research uses more stringent and severe data collection and data analysis methods. So media research is often used as a tool of reporting. Major examples of this include news reporting based on surveys, opinion polls, pre-poll surveys, exit polls, etc.

When media research methodology and related tools are used for news reporting, it is called *precision journalism.*

Researchers after identifying and developing a problem or topic for investigation may give their attention to several potential sources for data. This may include a critical analysis of everyday situations and background material already available. This is done to achieve a clear perspective and make a concise presentation of results. One needs select an appropriate method of analysis. They have to be wary of potential sources of error that may creep into the findings. They need to consider, like a good investigative reporter, every plausible alternatives and explanations. Only after making a thorough evaluation of all the data and hypotheses that these may be reported.

The media researcher may be a detached observer, or a participant in the process under study. He may undertake field observation, focus groups, intensive interviews or case studies. All these methods and tools help the researcher to gather necessary data concerning the research questions. These methods provide the researcher in-depth information. Even extremely detailed information can be obtained from a small set of respondents by following in the method of intensive interviewing.

Due to the advances in computer technology, computers have come to play a useful role in mass media research. Computers have become a significant tool of research. Computers play multiple roles in gathering and evaluating of data, and also in preparing sophisticated graphic presentations and preparation of models.

Both writing a research report and news reporting follow almost the same process. The only difference is in the analysis in research. Writings in the media are important for

scientific research. This is because the news reports place research studies in the public domain for perusal and validation.

No research is complete with only information. It is essential to have facts and also in-depth interpretation of facts. This necessitates the adoption and application of various steps of media research that are highly reliable. News reporting, particularly, investigative reporting is almost like research. For even the so-called fair and objective account of occurrences may be misleading, if not carefully investigated and analyzed. Sometimes it is not enough to report facts truthfully. It has become now necessary to report the interpretation of the facts. That is because mere straight reporting of the facts, while essential, may not always be sufficient. This is because data is sometimes doctored or manipulated by vested interests

Many tactics are adopted to divert the attention of the reporters, even though pictures and sound bytes from cameras and microphones from the real story support them. Those who wish to express their particular point of view manipulate the news media to communicate their own ideas or ideologies. To balance the use and abuse of views, the media people must also use analysis and interpretation as is done in media research. By doing so, facts can be put into proper perspective in order to tell what it mean, to explain, to assure, and to persuade the target audience.

Now the new trend among journalists is to bring their interpretation in to the new stories they report. This trend is a departure from the traditional practice that news and opinion should be kept separate. The reporters, in the early days, were not expected to editorialize, or to express ideas, opinion and feelings about what happened. Rather, reporters were expected to tell simply what happened. But now blurring of facts and opinion in mass media reporting has become very common.

Radio and TV face a special problem in being used for interpretation and analysis, Earlier, it was held that broadcasting was such a powerful medium that it should only report facts and should not be allowed to influence the opinion. This situation no longer exists. Now, the editorial function of broadcasting is regulated through the so-called *fairness doctrine*. This requires that when a station presents one side of a controversial issue of public importance, the opposing view must also get a reasonable coverage.

Media research as a tool of reporting can also be used in a variety of others ways in which mass media are used to provide interpretation and analysis of the world in which we live in. Now while reporting there has to be a greater emphasis on telling the

audience more about an occurrence than the mere fact it has happened. Historical background and perspective has also to be given. Many facts need further explanation, amplification and clarification. The mass media are increasingly having their own specialists among their reporting staff. They are the people who are expected to know as much about their subjects and also analyze and interprete. In reporting about a complex or controversial matter they can add their own expert opinion to enable the audience to have a fuller understanding of the situation.

Even the wire services, which once depended on straight objective news reporting, are now making more use of background and interpretative reports. Most of the news agencies and syndicates have many special reporters to carry out in-depth investigations of complicated and vital issues and concerns of the people. They are under no deadline pressures forcing them to write a quick and superficial report of the facts. They have to get behind the facts in order to explore the various ramifications and meanings of the facts. Their chief concern is to reveal the truth about events, etc. This is how media research has become an important tool of reporting.

2.3 SUMMARY:

- **Media research is the study of the social, psychological and physical aspects and effects of the medium. In this connection it is researched whether a medium can provide information and entertainment to more and different types of people. In what way, new technology can be used to improve or enhance the sight or sound of the medium?**
- **In media research, we ask different questions including the following: *What is the nature of the medium? How does it work? What technology does it involve? How is it different or similar to any other media in any ways? What function and/or services does it provide? How much does it cost? Who will have access to the new medium? Is this medium effective? Can its performance be improved?***
- **Harold Lasswell studied the nature of propaganda from a stimulus-response point of view, during *World War I*. He thought that media could exert very powerful influence over their audiences. Some experts thought to be effective mass communicators need only transmit messages at an audience. By doing so they would produce preplanned and almost universal effect.**

- **The competition among different media for audience and advertising-revenue has led to the growth of research. Now media research has grown to be highly sophisticated. It utilizes long-range plans. It is in a way management the objectives. There is an increasing dependency on data to support the decision process. Even programme producers also seek relevant research data to develop the creative side of their programmes.**
- **There are many similarities between media research and social science research. Both rely on the careful systematic collection and analysis of data. Both strive for objectivity while recognizing the importance of personal interpretation by experienced professionals in the respective fields. Most often both media research and social science research employ the same methods for data gathering and analysis. Many studies conducted by media expert and social scientists are complementary to each other.**
- **There are some differences between media research and social science research. The real difference lies in the *purpose*. The media research aims at keeping the public informed about the events deemed important by them. On the contrary, social scientists are interested in understanding and explaining human social behaviour.**
- **Media research, like social science research, uses both qualitative and quantitative methods. It uses qualitative and interpretative methods to summarize findings in words. It uses quantitative or statistical methods to summarize findings in numbers.**
- **Media research as a tool of reporting can also be understood in a variety of others ways in which mass media are used to provide interpretation and analysis of the world in which we live in. Now while reporting there has to be a greater emphasis on telling the audience more about an occurrence than the mere fact it has happened. Historical background and perspective has also to be given. Many facts need further explanation, amplification and clarification. The mass media are increasingly having their own specialists among their reporting staff. They are the people who are expected to know as much about their subjects and also analyze and interprete.**

2.4 KEY WORDS:

Media Research: **Media research includes a whole range of study about the development of media, their achievements and effects. It includes the methods used in collecting and**

analyzing information with regard to newspapers, magazines, radio, TV, Cinema or other modern and traditional media of communication.

Research in Advertising: **From the fifties and sixties, advertisers have been using media research to devise ways to persuade potential customers to buy products and services. As a result, a large number of media studies were concerned with message effectiveness. Demography, and size of audience, role of advertising in achieving higher degree of acceptance and sell, frequencies of message to persuade potential customers and selection of media that best suited to reach the target audience were some of the major media research areas.**

Technology in Media Research: **Media technologies have also contributed a lot to media research. There is an increasing use of computers for communications. They are used to produce desktop published materials, as a new commercial mass medium in the form of videotext, and are direct links between individuals in the form of electronic mail.**

Feedback Research: **The audiences of the mass media are usually very large. Any feedback to be worthwhile has to come from a representative sample of the total population. A common method is the survey. The telephone provides immediate feedback because it can tell what an individual is doing at the time of phone call. This method is fast simple and inexpensive.**

Feed-forward Research: **Feed-forward research involves collection and interpretation of information about media contents before they are published or broadcast. This method is provides data that show how people would react to the message when it finally reaches them. This method also employed in sophisticated ways involving detailed audience questionnaires and follow up interviews with selected audiences.**

Researcher in Media Research: **The media researcher may be a detached observer, or a participant in the process under study. He may undertake field observation, focus groups, intensive interviews or case studies. All these help to gather necessary data concerning the research questions. These provide the researcher in depth information.**

2.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. **Discuss the role of media research.**
2. **Discuss the functions of media research.**
3. **Discuss media research as a tool for reporting.**

2.6 REFERENCES / SUGGESTED READINGS:

- Introduction to Communication Research **by *John C. Reinard*.**
- Mass Media IV **by *Ray Eldon Hiebert et al***
- Mass Media Research **by *Roger D. Wimmer & Joseph R. Dominick***
- Doing Media Research - An Introduction **by *Susanna Houring Priest***

METHODS OF MEDIA RESEARCH

Writer: **Sh. M. R. Patra**

Faculty Member, Department of C M & T, GJUST, Hisar, Haryana.

Vetter: Prof. B. K. Kuthiala

Chairperson, Department of Mass Communication, KUK, Haryana.

Converted in to SIM format by: Sh. M. R. Patra

LESSON STRUCTURE:

This lesson shall provide an introduction to the various methods of media research. We shall start with the census method. This will be followed by the survey method, observation method, and case study method. Finally, we shall cover the interview method. The lesson structure shall be as follows:

3.0 OBJECTIVES:

In this lesson we shall discuss about the various methods of conducting media research. The specific objectives of this lesson are to provide the learning on the following concepts:

- *To Get an Introduction to the Methods of Media Research*
- *To understand the Census Method*
- *To know about the Survey Method*
- *To understand the Observation Method*
- *To understand the Case Study Method*
- *To know about the Interview Method*

3.1 INTRODUCTION:

Human beings have always made enormous efforts to become aware about the past and the present, and to probe into the future. Many have tried to understand, to evaluate, and to communicate. This is what indeed research and particularly media research is all about.

Research is a systematic effort to secure answers to certain *'questions'*. In case of communication or media research, the questions are related to media. It involves description, analysis and interpretation of media or communication events and message-related-behaviour.

Media research is done in a systematic manner. One major aspect of being systematic is to adopt specific methodology. There are many methods used in media research. We shall discuss about some of these methods in this lesson.

3.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- *Introduction to Methods of Media Research*
- *Census Method*
- *Survey Method*
- *Observation Method*
- *Case Study Method*
- *Interview Method*

3.2.1 INTRODUCTION TO MEDIA RESEARCH:

Communication covers a broad range of topics. Also it draws heavily from other fields like sociology, psychology, anthropology, economics, etc. Thus most of the methods applicable to social research are used for communication research. In fact, while fields like history, literature, etc use only specific methods, communication research uses all kinds of methods. Also individual studies in the field of communication research use multiple methods. All methods of media research can be classified as quantitative and qualitative.

QUANTITATIVE METHODS:

Many research studies concentrate on numbers. In such studies, observations are expressed in numerical terms. Quantitative research is basically explanatory in nature and sometimes even involves experiments. Such studies attempt to use precise statistical tools and models to achieve comprehensive understanding of communication behaviours and phenomena.

The best examples of these are surveys and opinion polls. Such methods often try to predict present or future behaviour in various communication situations. In such studies statistical methods are used as a means to an end. These are not ends in themselves. Here numerical data are analyzed and presented numerically.

Quantitative methods help in providing precise explanations about processes and help measure communication behaviour.

QUALITATIVE METHODS:

Here the emphasis is not on numerical data. Rather these methods depend on description and interpretation of meanings of communication messages by way of subjective treatment. Instead of going for large number of examples, qualitative research concentrates on individual examples. Qualitative research does not try to find patterns. It makes intensive inquiries about single events, individuals and social or communication units.

Case studies, focus group studies are some examples of qualitative methods.

As we have already discussed, there are a lot of methods used in media or communication research. These include Census, Survey, Observation, Case Studies, and Interviews, etc.

3.2.2 CENSUS METHOD:

This method involves studying the entire population or universe of research. This is a quantitative method. Every single element of the universe is covered in this method. Thus the results are always good. Also there is no danger of biases or prejudices being introduced. The major drawbacks of the census method are, it is *highly expensive, and involves large manpower and a lot of efforts*. For these reasons, the census method is rarely used for media research.

3.2.3 SURVEY METHOD:

The term survey comes from two words **'sur'** and **'vor'**, which mean *to see a particular thing from a high place*. But this term is used differently in different sciences. In natural sciences, survey means measuring things. In social sciences, survey means *an investigation of social problems by collecting data through interviews, questionnaire, etc*.

In communication research it means *looking at something in its entirety*. In surveys, we cover events, processes, behaviour, etc. In quantitative communication research, a survey is an empirical study that uses questionnaires or interviews to discover descriptive characteristics of communication phenomena.

Often people think that surveys are means of studying large number of people. However, relatively smaller groups - like the employees of an office - can also be surveyed. Surveys can be used for all kinds of communication studies. There are the two basic forms of surveys -

questionnaire surveys and *interview based surveys*. We shall discuss about the questionnaire survey here and shall discuss interviews later.

QUESTIONNAIRE SURVEY:

A questionnaire survey involves the following steps:

- Selecting and framing questions,
- Formatting,
- Determining validity and reliability of questions,
- Sampling subjects (respondents),
- Administering the questionnaire, and
- Analyzing and interpreting results.

Selecting and Framing Questions: Developing or framing questions is often a difficult task. It requires extensive reading on the subject, composing a rough draft, putting them into a proper format. Questions can be direct or indirect, specific or general. Also there could be pure questions or statements to which reactions are sought. Again questions can be closed or open-ended. The researcher is free to adopt one type of questions or a variety of question types. Open-ended questions often result in a broad variety of responses.

Formatting: The basic format of questionnaires includes a brief statement about the study at the beginning, request for participation, assurance of confidentiality (if required). Then come the demographic questions (about gender, age, academics, income, etc.) Next come the questions on the topic. Usually questions of same response modes (like the *yes* and *no* questions) are grouped together. Some researchers put questions on the same issue together. Researchers usually try to have less number of questions. However, some studies require long questionnaires of 30 to 40 questions. Putting large number of questions in a proper format is a big problem.

Determining Reliability and Validity: After framing questions and formatting the questions, researchers must test the validity (relevance) and reliability (consistency) of the questions. For this, researchers often put *check questions* in the questionnaire. This involves putting the same question in different ways at different places.

Many methods of testing validity and reliability are available. These include *test scales, polarity rotation* etc.

Sampling Subjects (Respondents): One cannot always study the entire population or the universe. A representative sample is thus selected. Many methods are used for this purpose. Whatever the method is, the researcher should justify the size and method of sampling.

Administering the Questionnaire: Questionnaires can be delivered by mail, through fax or personally. However, it is always good to get the questionnaire filled up personally.

Analyzing and Interpreting Results: Mostly researchers use statistical means for analyzing data collected through the questionnaires. They try to show averages or the spread of data. Whatever means used, this form of research tries to reveal answers to the problems posed in the study.

3.2.4 OBSERVATION METHOD:

Generally, observation is the process of *acquiring knowledge through the use of the sense organs*. Observation involves three components - *sensation* or experiencing through the sense organs, *attention* or the ability to concentrate on the subject matter, and *perception* or the ability to recognize facts and putting them in proper perspective. In simple terms, observation means *seeing things with a purpose*.

In research terms, observation is *perception with a purpose*. The observation methods usually look into an occurrence, event or phenomenon as it is taking place. It is basically a qualitative method.

The two basic types of observation are participatory and non-participatory. In participatory observation, the researcher observes from within the group under observation while being part of the group. This provides first hand information. In case of non-participatory observation, the researcher observes from a distance. This is a kind of a detached observation. It does not provide any first hand experience.

Participatory Observation: This is also called naturalistic study as such studies are conducted in natural environments or settings. These are non-experimental studies or inquiries conducted as the subjects (people) are engaged in the natural course of their lives. Participatory

observation is an important form of fieldwork. Here researchers study groups by becoming a part of the group.

Researchers try to establish close relationships with the group members and observe and record their behaviour. Such studies produce both qualitative and quantitative data. Researchers try to use non-intrusive methods to gather information- regardless of the fact that whether it is qualitative or quantitative. Researchers try to get close and personal with the group members. They do not ask questions as in case of surveys. They join the group and 'observe'.

Outside Observation (Non Participatory Observation): Some times researchers do not become part of the group they are studying. They observe the group's behaviour from the outside and not as a part of the group. Here the chances of getting personal details of behaviours are less.

In case of participatory observation, the interpretations become more subjective. But in case of outside observation, which involves no close relationship between the group and the researcher, the interpretations are more or less objective. In participative observations, the researcher's sympathy and concerns are reflected in the interpretations.

The steps involved in observation method include:

- *Selecting the group and the place or setting,*
- *Getting familiar with the place and the group,*
- *Building rapport,*
- *Sampling within the group for selecting the types of behaviours to study,*
- *Asking questions if required,*
- *Keeping records of observations, and finally*
- *Interpretation of the data.*

The accuracy of observations depends on the precise and clear formulation of the problem, studying items and issues individually, objectivity of inquiry, and the five W's and one H (what, where, who, when, why and how). The reliability of the observation depends on the techniques and tools used, the situation, setting or environment being observed and of course the quality of the observer. It also depends on the quality of sampling. A lot of cross checking is required to make sure that relevant and valid information is being collected.

Along with objectivity, the observer should have relevant experience, knowledge, maturity, unbiasedness, and alertness. Observations should be noted down immediately and all observations should be properly categorized. Categorization helps in proper understanding and analysis.

Observation is distorted by prejudice, bias, haste, inexperience and lack of relevant knowledge. Observation also has two major problems or fallacies: non- observation and mal-observation. Non-observation involves overlooking or neglecting relevant facts. Mal-observation involves misinterpretation or misperception. This means perceiving things differently from what they actually are.

3.2.5 CASE STUDY METHOD:

These are intensive inquiries about single events, individuals, social units, or institutions. Case studies throw light on individual events or processes. The results are not generalizable in the statistical sense.

Case studies help the researcher know precisely the factors and causes of a particular phenomenon. It is a kind of qualitative analysis. Whether an individual, an institution, a social unit or an entire community is studied, the subject is considered as a whole or a unit. The case study method covers every aspect of the unit very intensively. In the case study method, information is collected through personal interviews, interviews with people close to the subject (or unit being studied), documents (personal and official as in case of individuals and institutions respectively), etc.

Unlike most other methods where only general aspects are covered, the case study method covers emotional and psychological aspects also. Unlike in other statistical methods where the emphasis is on numbers, the case-study method involves subjective treatment.

While case studies generate adequate and comprehensive information, which help solve many problems, this method has some disadvantages also. These include a false sense of confidence. Researchers often become over confident as they cover all the aspects. However, some aspects are overlooked some times. Collecting all kinds of information about great many aspects of the subject becomes difficult. It is also time consuming and expensive. Also it could lead to false generalizations. Being qualitative and subjective in nature, case studies are not quantifiable. Often case studies are unorganized and unsystematic as no standardized methodology is developed as yet. However, case studies are used as a highly effective method of research both in the social sciences and communication fields.

3.2.6 INTERVIEW METHOD:

Like in the participative observation method, the researcher collects information in the interview method personally. Many people use questionnaire to collect information. But using questionnaires is an impersonal method as these are often distributed through mail. Also many people ignore the questionnaire and do not respond. But interviews are not generally ignored. Also the researchers can observe and record such information about the manner, behaviour and nonverbal actions of the respondents. These things are usually lost if questionnaires are being sent through mail. The interview method involves the following steps:

Selecting Questions: The first and foremost thing for an interview is to select questions. The key here is *relevance*. Some times interviewers use specially prepared formats as in case of questionnaires. Here the questions are selected, framed and organized in a particular format. These are called *structured interviews*. In some other cases, the interviewer does not have a set of pre-framed questions. This method is called *unstructured interviewing*. Unstructured interviews offer a lot of flexibility. Here the respondents are free to give their reactions on the topic and related issues. This method also allows extended explorations and follow ups.

Types of Question Strategies: Researchers use a variety of strategies to organize their questions. Some put the demographic questions at the end, unlike in case of questionnaires. For initial questioning two strategies are used: *funnel questioning and inverted funnel questioning.*

Funnel questioning starts with general and open-ended questions. These are followed by narrow or specific questions. Inverted funnel questioning begins with a very specific question, which is then followed by general questions.

Example of funnel questioning:

- *How do you feel about the news programmes on Citi Cable?*
- *How would you rate the coverage of local events on Citi Cable?*
- *How would you rate the coverage of local problems on Citi Cable?*
- *How do you rate the coverage of the sewerage problem in the city on Citi Cable?*

Example of inverted funnel questioning:

- *What is your favourite TV Serial?*

- *Do you like other serials of the same type?*
- *What type of TV programmes do you watch?*

After initial questioning is over, then the researcher uses two other strategies - *mirror questioning and probing questions*. Mirror questioning involves repeating previous questions in a different way to gain additional information and to cross check previous answers. And probing questions are asked to get elaboration or explanation.

The Gallup Organization, which runs the famous Gallup Polls, has devised the following principles for conducting interviews.

- *The questions should be short and to the point.*
- *The words and phrases should be simple.*
- *The questions should avoid all possible bias against or in favour of a particular point of view.*
- *The questions should include all the important alternatives*.

3.3 SUMMARY:

- Research is a systematic effort to secure answers to certain *'questions'*. In case of communication or media research, the questions are related to media. It involves description, analysis and interpretation of media or communication events and message-related-behaviour.
- Most of the methods applicable to social research are used for communication research. In fact, while fields like history, literature, etc use only specific methods, communication research uses all kinds of methods. Also individual studies in the field of communication research use multiple methods.
- Quantitative research studies attempt to use precise statistical tools and models to achieve comprehensive understanding of communication behaviours and phenomena. The best examples of these are surveys and opinion polls. Such methods often try to predict present or future behaviour in various communication situations. Quantitative methods help in providing precise explanations about processes and help measure communication behaviour.
- Qualitative research concentrates on individual examples. Qualitative research does not try to find patterns. It makes intensive inquiries about single events, individuals and social or communication units. Case studies, focus group studies are some examples of qualitative methods.
- **Every single element of the universe is covered in the census method. Thus the results are always good. Also there is no danger of biases or prejudices being introduced. The major drawbacks of the census method are, it is *highly expensive, and involves large manpower and a lot of efforts*. For these reasons, the census method is rarely used for media research.**

- In communication research, a survey is an empirical study that uses questionnaires or interviews to discover descriptive characteristics of communication phenomena. Surveys can be used for all kinds of communication studies. There are the two basic forms of surveys - *questionnaire surveys* and *interview based surveys*. We shall discuss about the questionnaire survey here and shall discuss interviews later.
- In media research, observation is *perception with a purpose*. The observation method usually looks into an occurrence, event or phenomenon as it is taking place. It is basically a qualitative method.
- The two basic types of observation are participatory and non-participatory. In participatory observation, the researcher observes from within the group under observation while being part of the group. This provides first hand information. In case of non-participatory observation, the researcher observes from a distance. This is a kind of a detached observation. It does not provide any first hand experience.

3.4 KEY WORDS:

Media Research: In communication or media research, we try to find answers to questions related to the fields of communication and media. It involves description, analysis and interpretation of media or communication events and message-related-behaviour.

Quantitative Methods: Quantitative research concentrates on numbers. Such studies attempt to use precise statistical tools and models to achieve comprehensive understanding of communication behaviours and phenomena. The best examples of these are surveys and opinion polls. Such methods often try to predict present or future behaviour in various communication situations. Quantitative methods help in providing precise explanations about processes and help measure communication behaviour.

Qualitative Methods: These methods depend on description and interpretation of meanings of communication messages by way of subjective treatment. Qualitative research concentrates on individual examples. Qualitative research does not try to find patterns. It makes intensive inquiries about single events, individuals and social or communication units. Case studies, focus group studies are some examples of qualitative methods.

Census Method: **This method involves studying the entire population or universe of research. This is a quantitative method. Every single element of the universe is covered in this method. Thus the results are always good. Also there is no danger of biases or prejudices being introduced. The major drawbacks of the census method are, it is *highly expensive, and involves large manpower and a lot of efforts.* For these reasons, the census method is rarely used for media research.**

Survey Method: In communication research, survey means *looking at something in its entirety*. In surveys, we cover events, processes, behaviour, etc. In communication research, a survey is

an empirical study that uses questionnaires or interviews to discover descriptive characteristics of communication phenomena. Surveys can be used for all kinds of communication studies. There are the two basic forms of surveys - *questionnaire surveys* and *interview based surveys*. We shall discuss about the questionnaire survey here and shall discuss interviews later.

Observation Method: In media research, observation is *perception with a purpose*. The observation method usually looks into an occurrence, event or phenomenon as it is taking place. It is basically a qualitative method.

Participatory Observation: These are non-experimental studies or inquiries conducted as the subjects (people) are engaged in the natural course of their lives. Participatory observation is an important form of fieldwork. Here researchers study groups by becoming a part of the group. Researchers try to establish close relationships with the group members and observe and record their behaviour. Such studies produce both qualitative and quantitative data.

Non-Participatory Observation: In case of participatory observation, the researchers observe the group's behaviour from the outside and not as a part of the group. Here the chances of getting personal details of behaviours are less. Here the interpretations are more or less objective. In participative observations, the researcher's sympathy and concerns are reflected in the interpretations.

3.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. Write a detailed note on the various methods of media research.
2. Discuss the survey method in detail.
3. Write a detailed note on the observation methods of media research.

3.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*

THEORY AND PRACTICE OF RANDOM SAMPLING

Writer: **Sh. Sushil K. Singh**

Lecturer, Department of C M & T, GJUST, Hisar, Haryana.

Vetter: **Prof. B. K. Kuthiala**

Dept of Mass Communication, KU, Kurukshetra, Haryana.

Converted in to SIM format by: Sh. Mihir Ranjan Patra

Lecturer, Department of C M & T, GJUST, Hisar, Haryana.

LESSON STRUCTURE:

This lesson will cover the various aspects of sampling including: Population, Sample, Sampling errors, Sampling units, Sampling frame, Random sampling, Non-random sampling, etc.

The lesson structure shall be as follows:

4.0 OBJECTIVES:

In this lesson we shall discuss about the theory and practice of sampling. The specific objectives of this lesson are to provide the learning on the following concepts.

- ***To Get an Introduction to Sampling***
- ***To Understand Probability Sampling***
- ***To Know about Non- probability Sampling***

4.1 INTRODUCTION:

Advertisers want to find out about the reasons why customers like certain products and discard others. Political candidates want to know whom the electorate is going to vote for. Psephologists want to predict the possible results of elections. But in all these cases there is one big problem. Advertisers cannot reach all the customers. Politicians and psephologists cannot reach all the voters.

So while conducting research we study only a part of the total population under study. This 'part' is called the 'sample' and the process by which we draw samples is called sampling.

In this lesson, we shall discuss about all the related aspects of sampling.

4.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- ***Introduction to Sampling***
- ***Probability Sampling***
- ***Non- probability Sampling***

4.2.1 SAMPLING- AN INTRODUCTION:

Researchers often try to make inferences about the population on the basis of results from a survey sample. To draw samples from populations, researchers must first decide the population. Suppose that you were interested in studying the degree to which housewives in India rely on television commercials in preference to traditional methods. All the housewives in the country would constitutes the population.

Take another example. You are interested to study the degree to which the news items in national dailies are slanted on a particular topic or party. In this case all the news items of all the national daily newspapers will be the population. Researchers define population as having certain characteristics.

Sampling is the process of selecting units from a population. The total population under study is called the 'universe' of the study. This practice is required as an alternative to census where you have to survey the entire population i.e. data is collected from each unit. This is chosen in cases where the size of the population is very large.

However, the conclusion of the study can be good only when the collection of data is done through logical reasoning behind choices. So we need to understand and study closely the population under study and how samples are drawn from that population in order to study the whole characteristics of that population.

A population is the universe of events from which the sample is drawn. In other words it is all the units about which the information is sought. The researcher, on the basis of certain characteristics, defines populations. Though population may be quite broad as all people or all news items in all newspapers, they may be defined quite narrowly, such as television commercials that appear during network prime time, i.e. between 7pm -11 p.m.

Sample is a part of the population selected for a particular research study. Researchers rarely sample all the events or units, but rely on a portion of all data to draw conclusions. Sampling may have the following dimension in a study of communication research:

- In sampling events are selected from the population to be included in the study.
- The results of the study are interpreted to test hypothesis and in order to estimate parameters of the population from sample data.

The individual elements or events in the population are assigned numbers. These numbers from population are called units. A sample is simply a selection of units from the population. The collection of selected individuals or events is called the sample. A statistic is a number computed from a sample. The statistics that reflect the features of the sample are called sample characteristics. Communication researchers gather statistics from the sample to determine the properties of the population.

BIAS IN SAMPLING:

The process of selecting sample units from the population has to be objective and without bias. While sampling there is a tendency for the researcher to err. This is referred to as bias in sampling. Certainly, researchers work to eliminate and minimize bias. Opinion poll predictions and television rating services are supposed to be accurate, for this elimination of bias in sampling is a precondition. Controlling bias is critical, as accuracy does not occur by accident.

Representative sample:

The goal of effective sampling should be that a good sample must be representative of the population and big enough to permit reasonable analysis of data. A representative sample is one that accurately reflects characteristics of the population from which it is drawn.

SAMPLE SIZE:

"How big should a sample be?" This question is crucial for the research students. Generally researchers collect the sample large enough to make reasonable interpretations. Yet, large sample size is not enough to prove that a sample is representative of the population. The students of communication research should try to gather a reasonably sized sample in order to make a good and representative study.

The size of the sample should be determined keeping in view the following factors:

- *Degree of accuracy required.*
- *Time available for completion of the study.*
- *Manpower available.*
- *Finances available.*
- *Subject matter of research.*

There cannot be an ideal proportion between the size of the size of the universe and the size of the sample. In most cases sample size is governed by the above-mentioned factors. However, it

may also be noted that very small sample may give distorted results. At the same time, very large sample may also be a wastage of resources.

SAMPLING ERROR:

As we study a definite sized sample and not the entire population some error is bound to occur in telling the characteristics of the population exactly.

Sampling error may be defined as the degree to which sample attributes differ from population characteristics on certain measures. If we study the entire population then there is no sampling error at all. But we also know that it is impossible to study the entire population over a fixed period of time and we are bound to resort to sampling. Larger the size of the sample lesser will be the sampling error.

Margin of error is the amount of sampling error associated with the sample. If we collect a big sample this margin of error can be reduced and our research reports may be very accurate. In good sample studies, sample error is generally indicated. For example, if in a population 40 percent of the households own television sets, but a sample study may reveal that 39 percent households have television sets in their homes. This is sampling error, but from research point of view 39 percent and 40 percent is not a big difference. In research study it may be indicated as + 1%.

FORMS OF SAMPLING:

Broadly, sampling can be done in two ways:

- *Probability sampling and*
- *Non-probability sampling*.

Probability sampling is more commonly known as Random Sampling. Non-probability sampling is called non-random sampling

4.2.2 RANDOM SAMPLING:

Random sampling plays an important part in research. In this form of sampling the selection of sample is done in such a way that each event in the population gets equal chance of selection. Random sampling is taken for all statistical tools, which are applicable to data.

The distributions of randomly occurring events can be used to figure the odds that a sample truly reflects the characteristics of the population. Random sampling is not haphazard,

unsystematic or accidental. However, in research random means every unit gets equal chance of selection.

Random sampling is considered as a systematic and most scientific means of studying the population. Random sampling consumes a lot of time and most researchers want shortcuts. But the shortcuts throw off the whole sample and leads to faulty results.

METHODS OF RANDOM SAMPLING:

- *Simple Random sampling*
- *Stratified random sampling*
- *Cluster sampling*
- *Systematic sampling.*

SIMPLE RANDOM SAMPLING:

In this type of random sampling the selection of data is done in such a way that each event (individuals) gets an equal chance for selection. It may be done by way of pulling names out of a container. Number are assigned to each individual events and a lot can be drawn randomly or using a random number table the numbers to be included in the final selection can be drawn. This increases the representativeness and sampling error can be easily computed.

STRATIFIED RANDOM SAMPLING

Population is divided into different strata based on the known proportions or properties and random sampling is completed within each group in the population. As in simple random sampling this method is also time consuming but allows analysis by sub division of strata and the disproportionate representation of the sub divisions of the population is also prevented.

Say in a study of the opinion of men and women on certain issues of a particular place. The member of men and women are identified. After deciding the number of men and women to be taken for study a simple random sample is drawn from each sub group of the population stratification (the population is stratified as men & women).

For a study on an industry strata can be divided into managers, superiors, skilled workers, and unskilled workers. For a study on rural youth the strata can be student youth, non-student youth, rich-, medium-, or poor-youth.

But it should be noted that in a study based on stratified sampling, results should be drawn for each stratum separately and various strata should not be merged for the entire population. This will give you erroneous results.

CLUSTER SAMPLING:

In cluster sampling groups of events or areas (clusters) are taken as a unit (rather than taking single individual events as units) and an actual sample is drawn from them. This method is considered as a practical solution to the problems of gaining access to many settings and the cost of sampling is minimized in large-scale surveys.

However, this sampling is disadvantaged by the requirement of larger samples and weights for each strata or each individual event may be difficult to know in many settings. Results cannot be taken as representative for the entire population.

SYSTEMATIC SAMPLING:

This is a commonly used method in which cluster sampling and stratified sampling are combined. Every *n*-th event or cluster in the population is taken for study and a systematic sampling is done among the events or clusters thus selected.

NON-SAMPLING ERROR:

We know that some errors are bound to occur whatever method we used for sampling. Errors due to sampling factors (Sampling error) usually get the most attention. However, there are a lot of factors, which affect a study. These factors (or the sources of error) are critical as there are so many of them. The non-sampling errors may include.

- *Refusal by respondent s for interview*
- *Intentional lying by respondent*
- *Prevalent opinion*
- *Poor recall*
- *Subculture of respondents*
- *Miscommunication*
- *Coding errors*
- *Image of the interviewer.*
- *Recording error*
- *Misunderstanding of questions being asked.*

4.2.2 NON-RANDOM SAMPLING:

This form of sampling is applicable where random sampling is not possible. Non-random sampling may be classified as:

- *Convenience sampling,*
- *Quota sampling,*
- *Purposive or known group sampling, and*
- *Snowball sampling.*

CONVENIENCE SAMPLING:

In convenience sampling no attempt at randomization is made. Here selection of respondents/events depends upon the availability. Although economical in nature the computation of bias is not possible in this case and the generalisation to the population is out of question.

QUOTA SAMPLING:

This method of sampling attempts that important parts of the population are not omitted and samples are defined based on the known proportions within the population and non-random sampling is completed within each group.

PURPOSIVE OR KNOWN GROUP SAMPLING:

This is a convenient and economical sampling method when key population characteristics are identified. Here the selection of respondents is from groups that are known to possess a particular characteristics under investigation. However, in this case also the generalization to the population is also not possible.

SNOWBALL SAMPLING:

Snowball sampling is highly useful in studies where population units are not well defined and thus cannot be listed. The selection of respondents is based on referrals from initial informants. In this case the respondent is requested to refer the researcher to other individuals in the group. Examples of not so well defined population are members of underworld organization, prostitutes, criminals, AIDS patients, users of a particular brand, etc.

However, studies depending on snowball sampling provide broad features of the population and cannot be considered as actual research.

PRACTICES IN RANDOM SAMPLING:

As we know that all the forms of sampling- random or non random have advantages and disadvantages depending upon the type, nature of the study, we require to select a suitable method. We also know that the study of research is riddled with choices and compromises. It would, in the best interest of the researcher that all the pros and cons are zoomed in and adopt so that they can produce good research results. Randomization is a pain in the neck so far as the credibility of the study is concerned.

4.3 SUMMARY:

- **While conducting research we often study only a part of the total population under study. This 'part' is called the 'sample' and the process by which we draw samples is called sampling.**
- All the elements or events under study in any research are called the population or universe.
- This question of sample size is crucial for the research students. Generally researchers collect the sample large enough to make reasonable interpretations. Yet, large sample size is not enough to prove that a sample is representative of the population.
- **The size of the sample should be determined keeping in view the following factors: Degree of accuracy required, Time available for completion of the study, Manpower available, Finances available, and Subject matter of research.**
- Sampling error may be defined as the degree to which sample attributes differ from population characteristics on certain measures. If we study the entire population then there is no sampling error at all. But we also know that it is impossible to study the entire population over a fixed period of time and we are bound to resort to sampling. Larger the size of the sample lesser will be the sampling error.
- **Broadly, sampling can be done in two ways: Probability sampling and Non-probability sampling.**
- In random sampling the selection of sample is done in such a way that each event in the population gets equal chance of selection. Random sampling is a systematic and most scientific means of studying the population. Random sampling consumes a lot of time.

4.4 KEY WORDS:

Sampling: We often study only a part of the total population under study during research. This 'part' is called the 'sample' and the process by which we draw samples is called sampling.

Population or Universe: All the elements or events under study in any research are called the population or universe.

Bias in Sampling: The process of selecting sample units from the population has to be objective and without bias. While sampling there is a tendency for the researcher to err. This is referred to as bias in sampling. Certainly, researchers work to eliminate and minimize bias.

Sample Size: This question of sample size is crucial for the research students. Generally researchers collect the sample large enough to make reasonable interpretations. Yet, large sample size is not enough to prove that a sample is representative of the population.

Sampling Error: Sampling error may be defined as the degree to which sample attributes differ from population characteristics on certain measures. If we study the entire population then there is no sampling error at all. But we also know that it is impossible to study the entire population over a fixed period of time and we are bound to resort to sampling. Larger the size of the sample lesser will be the sampling error.

Random Sampling: In random sampling the selection of sample is done in such a way that each event in the population gets equal chance of selection. Random sampling is not haphazard, unsystematic or accidental. Random sampling is considered as a systematic and most scientific means of studying the population.

Methods of Random Sampling: The major methods of random sampling are: Simple Random sampling, Stratified random sampling, Cluster sampling, and Systematic sampling.

Simple Random Sampling: **Here the selection of data is done in such a way that each event (individuals) gets an equal chance for selection. It may be done by way of pulling names out of a container. This increases the representativeness and sampling error can be easily computed.**

Stratified Random Sampling: **Population is divided into different strata based on the known proportions or properties and random sampling is completed within each group in the population. As in simple random sampling this method is also time consuming but allows analysis by sub division of strata and the disproportionate representation of the sub divisions of the population is also prevented.**

Cluster Sampling: In cluster sampling groups of events or areas (clusters) are taken as a unit (rather than taking single individual events as units) and an actual sample is drawn from them. This method is considered as a practical solution to the problems of gaining access to many settings and the cost of sampling is minimized in large-scale surveys.

Systematic Sampling: This is a commonly used method in which cluster sampling and stratified sampling are combined. Every *n*-th event or cluster in the population is taken for study and a systematic sampling is done among the events or clusters thus selected.

Non- Random Sampling: This form of sampling is applicable where random sampling is not possible. Non-random sampling may be classified as: Convenience sampling, Quota sampling, Purposive or known group sampling, and Snowball sampling.

Convenience Sampling: In convenience sampling no attempt at randomization is made. Here selection of respondents/events depends upon the availability. Although economical in nature

the computation of bias is not possible in this case and the generalization to the population is out of question.

Quota Sampling: This method of sampling attempts that important parts of the population are not omitted and samples are defined based on the known proportions within the population and non-random sampling is completed within each group.

4.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. Write a detailed note on sampling giving examples.
2. Discuss random sampling in detail.
3. Write a detailed note on non-random sampling.

4.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*
- **Introduction to Communication Research** by *John C Reinard* (Benchmark, 1994)
- **Practical Marketing Research** by *Jefferey L Pope* (Amacom, 1993)
- **Introduction to Survey Research** by *Pamela L Alreck & Robert B Settle* (Irwin, 1995)

RESEARCH DESIGN

Writer: Prof. Sunil Kant Behera

Dept of Mass Communication, Berhampur University, Berhampur, Orissa.

Vetter: Prof. Manoj Dayal

Dept of C M & T, GJUST, Hisar, Haryana.

Converted in to SIM format by: Sh. Mihir Ranjan Patra

Faculty Member, Dept of C M & T, GJUST, Hisar, Haryana.

LESSON STRUCTURE:

This lesson shall provide an introduction to research designs. We shall start with some definitions of research designs. We shall also focus on the various types of research designs, and also on experimental research designs. Finally, we shall try to understand the features of a good research design. The lesson structure shall be as follows:

5.0 OBJECTIVES:

In the previous lesson we have thoroughly discussed about the theory and practice of sampling. In this lesson we shall cover research design. The objectives of this lesson are to provide the learning on the following concepts.

- ***To Define Research Design***
- ***To Know About the Types of Research Designs***
- ***To Know About Experimental Research Designs***
- ***To Know About the Features of a Good Research Design***

5.1 INTRODUCTION:

Design, at a basic level, means planning. Generally some decisions are to be taken before the actual action. The design is a plan to ensure that action achieves its objectives. So it is the way to avoid wasteful expenditure of money, time and energy.

Research design is the blueprint for research. The researcher records his decisions by using relevant symbols or concepts. And these symbolic constructions are called research design. The process of data collection, sampling and analysis of the collected facts are to be organized as per the basis of the design. The whole study can be done in a systematic manner. So the strategy needs careful planning and preparation.

Media research requires a comprehensive plan of action. If research can be defined as systematic inquiry into a subject media research can be defined as the process to examine media topics methodically.

A media student faces a wide variety of assignments requiring planning and preparation of the research design. Some of the areas are:

- Conducting audience or consumer surveys,
- Conducting basic research investigations,
- Investigating and writing news stories,
- Preparing advertising and public relation campaigns,
- Writing these and dissertations and reports.

Media research is a modern field of inquiry and is studied in a great variety of allied disciplines. So, the research sources for this subject exit in the social and behavioral sciences, the arts and the humanities. With so much information available, determining the best is not easy. So proper designing is the need for media research.

5.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- ***Research Design Defined***
- ***Types of Research Designs***
- ***Experimental Research Design***
- ***Features of a Good Research Designs***

5.2.1 RESEARCH DESIGN DEFINED:

The second step in research is the research design. It is the skeleton for the research project. Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design. It is a process of deliberate anticipation directed towards bringing an expected situation under control. Claire Selltiz, Jahoda, Deutsch and cook define research design as, “The arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.” In fact, it is the structure within which research is conducted. The design constitutes the blue prints for the collection, measurement and analysis of data. So, the agenda from writing hypothesis to the final analysis of data is research design.

Research design results from certain decisions being taken. The decisions are:

- *What is the study about?*

- *Why is the study being made?*
- *Where will the study be carried out?*
- *What type of data is required?*
- *Where can the required data be found?*
- *What periods of time will the study include?*
- *What will be the sample design?*
- *What techniques of data collection will be used?*
- *How will be the data analyzed?*
- *In what style will the report be prepared?*
- *And how the research purpose can be achieved with minimum expenditure of money, time and energy.*

The design decisions are based on an accepted methodology. After formulating the research problem, the researcher tries to translate the ideal model into practical one. So, an ideal research procedure is needed to solve the research problem. Ackoff states the idealized research design as "It is concerned with specifying the optimum research procedure that could be followed where there is no practical restrictions."

Research design can be split into four phases:

- *The sampling design: It deals with the method of selecting items to be observed for the given study;*
- *The observational design: It relates to the conditions under which the observations are to be made;*
- *The statistical design: It deals with the question of how many subjects are to be observed and how the observations are to be analyzed; and*
- *The operational design: It deals with the specific techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out.*

These above designs are not independent. The decision in respect of any one phase of the design may influence or affect a decision in any other phase.

5.2.2 TYPES OF RESEARCH DESIGNS:

There are different research designs as per four research purposes:

- *Exploratory or formulative studies*
- *Descriptive studies*
- *Diagnostic studies, and*
- *Experimental studies*

Some times, we conduct research studies to gain familiarity with a phenomenon or to achieve new insights into it. Sometimes the objective is to formulate a more precise research theory or to develop hypotheses. Such studies are known as *exploratory studies.*

Some other times, we conduct research studies to portray accurately the characteristics of a particular situation or group or individual. Studies having this purpose are known as *descriptive studies*.

We some times conduct research studies to determine the frequency with which something occurs or with which it is associated with something else. Studies having this purpose are known as *diagnostic studies*.

Some times, we conduct research studies to test a hypothesis of a causal relationship between variables. Studies characterized by this purpose are called *experimental studies*.

Exploratory researchers need the following three methods for studies:

- *A review of related social science and other pertinent literature,*
- *A survey of people who have had practical experience of the problem to be studied, and*
- *An analysis of 'insight stimulating' cases*.

From the point of view of the research design, the descriptive and diagnostic studies share common requirements. In both cases the researcher must be able to define clearly, what he wants to measure and must find adequate methods measuring it along with a clear cut definition of 'population' he wants to study.

The design in descriptive and diagnostic research must be rigid and not flexible and must focus attention on the following:

- *Formulating the objective of the study,*
- *Designing the methods of data collection,*
- *Selecting the sample,*
- *Collecting the data,*
- *Processing and analyzing the data, and*
- *Reporting the findings.*

In these cases relevancy of data are important. The research design in case of descriptive/diagnostic studies is a comparative design. It can be referred as a survey design.

The basic difference between exploratory research design and descriptive/diagnostic design is given below in the tabular form.

Study type	Basic Design	Observational Design	Sampling Design	Statistical Design	Operational Design
Exploratory	Flexible	Flexible (Unstructured) Instruments	Flexible (Non-probability Judgement	Flexible, No Preplanned Design For Analysis	Flexible No Fixed Decisions About Operationalizing The Study.
Descriptive Diagnostic	Rigid	Rigid (Structured Instruments)	Rigid Probability Design Random Samples	Rigid Preplanned Design For Analysis	Rigid Advance Decisions About Operationalizing The Study.

6.2.3 EXPERIMENTAL RESEARCH DESIGNS:

Experimental studies are the ones concerned with testing the causal hypotheses. This study reduces bias, increase reliability and will permit drawing inferences about causality.

Prof. R.A. Fisher's name is associated with experimental designs. Experimental designs have its origin in agricultural research. Prof. Fisher found that by dividing fields or plots into different blocks and then by conducting experiments in each of these blocks, whatever information is collected and inferences drawn from them, happens to be more reliable. This fact inspired him to develop experimental designs.

PRINCIPLES OF EXPERIMENTAL DESIGNS:

Fisher has enumerated three principles of experimental designs:

- *The principle of replication;*
- *The principle of randomization; and*

- *Principle of local control.*

Principle of replication states that the experiment should be repeated more than once.

The principle of randomization provides protection, when we conduct an experiment, against the effects of extraneous factors by randomization.

Under the principle of local control, the known source of variability, is made to vary deliberately over as wide a range as necessary and this needs to be done in such a way that the variability it causes can be measured and hence eliminated from the experimental error.

IMPORTANT EXPERIMENT DESIGNS:

Experimental design refers to the framework or structure of an experiment and as such there are several experimental designs. Experimental designs can be classified into two categories:

- *Informal experimental design, and*
- *Formal experimental design*

Informal experimental designs are those designs that normally use a less sophisticated form of analysis based on differences in magnitudes. Informal experimental designs can be divided as follows:

- *Before and after without control design.*
- *After only with control design.*
- *Before-and-after with control design*.

Before-and-after without control design: **In such a design a single test group or area is selected and the dependent variable is measured before the introduction of the treatment. The treatment is then introduced and the dependent variable is measured again after the treatment has been introduced.**

After-only control design: Two groups or areas are selected and the treatment is introduced into the test area only in this design.

Before-and-after with control design: Two areas are selected and the dependent variables are measured in both the areas for an identical time-period before the treatment in this design. The treatment is then introduced into the test area only, and the dependent variable is measured in both for an identical time-period after the introduction of the treatment.

Formal experimental designs offer relatively more control and use precise statistical procedures of analysis. Formal experiments can be divided as:

- *Completely randomized design.*
- *Randomized block design.*
- *Latin square design*
- *Factorial design*

Completely randomized design: It involves only two principles viz., the principle of replication and the principle of randomization of experimental designs. The essential characteristics of this design are that subjects are randomly assigned to experimental treatments.

Completely randomized designs can again be divided into two types:

Two-group simple randomized: **In this group all the population is defined and then from the population a sample is selected randomly.**

Random replications design: In this design the effect of differences are minimized.

Randomized block design: It is an improvement over the completely randomized design. In the randomized block design the principle of local control can be applied along with the other two principles of experimental designs. In the randomized block design, subjects are first divided into groups. The variable selected for grouping the subject is one that is often related to the measures to be obtained in respect of the dependent variable.

Latin squares design: It is an experimental design frequently used in agricultural research. The conditions under which agricultural investigations are carried out are different from other studies

In L.S. design the field is divided into many blocks as there are varieties of fertilizer and then each block is again divided into as many parts as there are varieties of fertilizers in such a way that each of fertilizer is used in each block.

Factorial designs: These are used in experiments where the effects of varying more than one factor are to be determined. Factor design is also divided into two types:

- *Simple factorial design and*
- *Complex factorial design.*

Experimental research is similar to descriptive research. It is causal. It is based on the premise of one event. The researcher designs experiments to test various hypothesis, or educated guesses, about the event.

5.2.4 FEATURES OF A GOOD RESEARCH DESIGN:

The features of a good research design are as follows:

- The design, which minimizes bias and maximizes the reliability of the data collected and analyzed, is considered a good design.
- The design, which gives the smallest experimental error, is supposed to be the best design in many investigations.
- A design, which yields maximum information and provides an opportunity for considering many different aspects of a problem, is considered an efficient design.
- A good design contains a clear statement of research problem, procedures and techniques to be used for gathering information, the population to be studied and methods to be used in processing and analyzing data.

5.3 SUMMARY:

- We discussed here that design means planning.
- The process of data collection, sampling and analysis of the collected facts are to be organized as per the basis of the design.
- Media research is studied in a great variety of allied disciplines.
- There are four phases of research design viz. the sampling design, the observational design, the statistical design and the operational design.
- There are four types of research design viz. Exploratory studies, descriptive studies, diagnostic studies and experimental studies.
- There are several research designs and the researcher must decide in advance his planning.
- Experimental researchers observe present circumstances under controlled conditions.
- Empirical researchers observe, describe, and explain the relationships between events.

5.4 KEY WORDS:

Variable: A concept that can take on different quantitative values is called a variable.

Continuous variable: Phenomena, which can take on quantitatively different values even in decimal points, are called continuous variables.

Discrete variable: A variable for which the individual values fall on the scale only with distinct gaps is called a discrete variable.

Validity: It refers to measuring what you intend to measure.

Liability: It refers to consistency stability or repeatability of measures.

Empirical research: This term is often applied to investigations of a quantitative nature.

Control: The term control is used when we design the study minimizing the effects of extraneous independent variables.

Research hypothesis: When a prediction or a hypothesized relationship is to be tested by scientific methods, it is termed as research hypothesis.

Experiment: The process of examining the truth of a statistical hypothesis, relating to some research problem is known as experiment.

Experimental unit(s): The pre-determined plots or the blocks, where different treatments are used, are known as experimental units. Such experimental units must be selected very carefully.

Treatments: The different conditions under which experiment and control groups are put are usually referred as 'treatments'.

5.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. Briefly explain the meaning of research design.
2. Prepare a research design to study the problem of Indian language newspapers.
3. Discuss some features of experimental design.
4. What are the different types of research design? Explain each of them briefly.
5. Explain the meaning and importance of each of the following in research:
    - *Control*
    - *Research hypothesis*
    - *Treatment*
    - *Good design*

5.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*
- **Introduction to Communication Research** by *John C Reinard* (Benchmark, 1994)
- **Practical Marketing Research** by *Jefferey L Pope* (Amacom, 1993)
- **Introduction to Survey Research** by *Pamela L Alreck & Robert B Settle* (Irwin, 1995)
- **Communication Research: Strategies and Sources (2nd ed)** by *Rubin, R.B., Rubin, A.M. and Piele, L.J. Belmont, CA,* (Wadsworth)

M. A. Mass Communication (2nd year)

MEDIA RESEARCH MMC 205 Lesson: 6

QUESTIONNAIRE:
PREPARATION & ADMINISTRATION

Writer: Prof. Sunil Kant Behera

Dept of Mass Communication, Berhampur University, Berhampur, Orissa.

Vetter: Prof. Manoj Dayal

Dept of C M & T, GJUST, Hisar, Haryana.

Converted in to SIM format by: Sh. Mihir Ranjan Patra

Faculty Member, Dept of C M & T, GJUST, Hisar, Haryana.

LESSON STRUCTURE:

This lesson shall provide an introduction to Questionnaire as a tool of research. We shall start with the definition of questionnaire. This will be followed by Questionnaires and Schedules Differentiation, Types of Questionnaire, Elements of Questionnaire, Preparation of Questionnaire, Aspects of Questionnaire Preparation, Physical Form of Questionnaire, and Pre-testing a Questionnaire. Finally, we shall try to understand the Merits and Demerits of a Questionnaire. The lesson structure shall be as follows:

6.0 OBJECTIVES:

In the previous lesson, we have comprehensively discussed about research design. In this lesson we will thoroughly discuss about the preparation and administration of questionnaires. After reading this lesson, the students will be able to know:

The objectives of this lesson are as follows:

- ***To Know About Definitions of Questionnaire,***
- ***To Know About the various Types of Questionnaire***
- ***To Know About the difference between Schedules and Questionnaire,***

- ***To Know About the various Elements of Questionnaire***
- ***To Know About the Preparation of a Questionnaire***
- ***To Know About the various Aspects of Questionnaire Preparation***
- *To Know About the Physical Form of Questionnaire*
- ***To Know About Pre-testing a Questionnaire, and***
- ***To Know About the Merits and Demerits of a Questionnaire***

6.1 INTRODUCTION:

The third step of research is data collection. Data can be divided into two types viz., primary data and secondary data. The primary data are collected afresh and for the first time. It is original, while the secondary data have already been collected.

In an experimental research, researchers collect primary data. The other name of primary data may be survey research or field work. There are two basic procedures or methods for data gathering:

- *Census Method, and*
- *Sample Method.*

In case of census, information is gathered from all the units of the 'population' or 'universe'. And in the case of sample, only selected units are observed. In both sample survey and census survey we can obtain primary data either through observation or through direct communication with respondents or through personal interviews. Hence there are some methods of collecting primary data and questionnaire method is one of them.

The main difference between the interview and the questionnaire method is that the former involves presentation of oral-verbal stimuli and reply in terms of oral-verbal response, and the questionnaire method involves presentation of written-verbal stimuli and return of written verbal response.

A popular and common method of collecting primary data is through questionnaire. It allows great facilities in collecting data from large, diverse and widely scattered groups of people. It is used in gathering objective, quantitative data as well as for securing information of a qualitative nature.

6.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- ***Definitions of Questionnaire,***
- ***Types of Questionnaire***
- ***Schedules and Questionnaire Differentiated***
- ***Elements of Questionnaire***
- ***Preparation of a Questionnaire***
- ***Aspects of Questionnaire Preparation***

- *Physical Form of Questionnaire*
- ***Pre-testing a Questionnaire, and***
- ***Merits and Demerits of a Questionnaire***

6.2.1 QUESTIONNAIRE DEFINED:

A questionnaire is a Performa containing a sequence of questions to elicit information from the interviewees. It is an instrument of data collection. A questionnaire consists of a number of questions printed in a definite order of a form. The form(s) are usually mailed to the respondents who are expected to read and understand the questions and reply to them in writing in the relevant spaces provided for the purpose on the said form(s). The respondent has to answer the questions on his own, i.e., totally unaided. John Galtung has summarized the characteristics of the questionnaire as 'written-verbal stimulus' and 'written-verbal response'. It is used in gathering objective, quantitative data as well as for securing information of a quantitative nature.

In case of big inquiries questionnaire technique is used to collect data. In this method several variables are measured.

6.2.2 QUESTIONNAIRE AND SCHEDULES:

In research survey both questionnaire and schedule methods are applied to collect data. There is much resemblance in the nature of these two methods but in the practical point of view there is difference between the two. The important differences are given below:

The questionnaire is generally sent through mail to informants to be answered as specified in a covering letter, but otherwise without further assistance from the sender. The research worker or the enumerator, who can interprete the questions when necessary, generally fills out the schedule.

Questionnaire method is relatively cheap, as it doesn't need field staff as schedule while collecting data.

Non-response is usually high in case of questionnaire.

Personal contact can't be possible in case of questionnaire while incase of schedule it is possible.

Questionnaire methods used only when respondents are literate and cooperative, but in case of schedules the information can be gathered even when the respondents happen to be illiterate.

Wider and more representative distribution of sample is possible under questionnaire method but in case of schedule there is some difficulties to send enumerators over a wider area.

Risk of collecting incomplete and wrong information is relatively more under the questionnaire method when people are unable to understand questions properly. But in case of schedules, the information collected is generally complete and accurate as enumerators can

remove the difficulties, if any, faced by the respondents in correctly understanding the questions.

6.2.3 TYPES OF QUESTIONNAIRE:

The types of questionnaire vary widely. Questionnaire may be classified on a number of different bases. The classification of questionnaires used below is based on the variable of structure:

- *Structured/standardized questionnaire*
- *Unstructured/non-standardized questionnaire*

Structured questionnaires are those in which there are definite, concrete and pre-ordained questions with additional questions limited to those necessary to clarify inadequate answers or to elicit more detailed responses. The questions are presented with exactly the same wording, and in the same order to all the respondents. Fixed alternative questions are given here.

Unstructured questionnaires are not the same to all the respondents. The characteristics of structured questionnaire are absent here.

6.2.4 ELEMENTS OF A QUESTIONNAIRE:

The information sought by the questionnaire may be classified as:

Identifying information: The following items may be included under this category: cross-reference questionnaire number, name of survey, name of sponsoring the survey, name of individual or family interviewed, sex of informant etc.

Social background and factual data: Here the age of the family members, marital status, education, religion, occupation, income etc. are given.

Subject matter of the survey: The informant may be asked a direct question on the facts, as he understands them. Straightforward questions are also asked for certain information. Information question, seeking advice and exploratory questions are asked here.

6.2.5 PREPARATION OF QUESTIONNAIRE:

Questionnaire is considered as the heart of a survey operation. Hence it should be constructed carefully. The questions must be clear, simple and to the point. They must be well organized from the point of view of the respondent and be formulated in such a manner as to provide the data in so far as possible in the desired form. This is especially true of a mail questionnaire, which essentially has to speak for itself. If it is not clear, not only the replies may be vague and of little value but many potential respondents may not bother returning the questionnaire at all.

Several considerations should be borne in mind while designing a questionnaire. Careful planning, the physical design of the questions, careful selection and phrasing of the questions definitely affect the number of returns as also the meaning and accuracy of the findings.

The following facts should be considered while designing a mailed questionnaire.

- *The physical appearance of the questionnaire affects the co-operation the researcher receives. Hence an attracted questionnaire is a plus point.*
- *While preparing the questions the standards of the respondents should be considered.*
- *The choice of words is an important consideration. The informant must grasp the spirit of the question rather than its precise wordings.*
- *Sequence of the items should be given attention.*
- *The purpose of the question is an important consideration. It may be to ascertain facts, to test the knowledge of the informant or discover his beliefs or attitudes. If opinions are desired, care must be exercised to see that the questions do not just bring out only the points of fact.*

Before using questionnaire method, it is advisable to conduct 'pilot study' (pilot survey) for testing the questionnaires. In a big inquiry the significance of pilot survey is felt very much. Pilot survey is the replica and rehearsal of the main survey. Such a survey, being conducted by experts, brings to the light the weakness of the questionnaire and also of survey techniques. From experience gained in this way, improvement can be effected.

6.2.6 ASPECTS OF QUESTIONNAIRE PREPARATION:

There are three main aspects of a questionnaire are:

- *General Format,*
- *Question Sequence, and*
- *Question Wording*

Researcher should note the following with regard to these three main aspects of a questionnaire:

GENERAL FORMAT:

The form of a questionnaire will depend partly on the type of data being sought and partly on the data collection method to be used. The choice lies between two extremes. On the one hand, there is the highly structured questionnaire in which all questions and answers are specified and comments in the respondent's own words are held to a minimum. At the other end is the unstructured questionnaire in which the interviewer is provided with a general brief on the sort of information to be obtained but the exact question is largely his own responsibility.

The unstructured questionnaires are useful in carrying out in depth interviews where the aim is to probe for attitudes and reasons. They may also be effectively employed in pre-testing, the result of which can be used as a basis for constructing a structured questionnaire at a later

stage. Thus, in order to ascertain the expectation of the television viewers about a programme interviews may be conducted with unstructured questionnaires. The resulting range of answers may then be used to prepare a structured questionnaire for use on the main part of the study.

The main disadvantage with an unstructured questionnaire is that it requires personal interview. It can't be used in the mailed questionnaire method of data collection.

A structured questionnaire usually has fixed alternative answers to each question. They are simple to administer and relatively inexpensive to analyze. The questionnaires have, however, their limitations. It is not possible to record the responses made by the respondent in their own words. They are considered inappropriate in investigations where the aim happens to be to probe for attitudes and feelings.

QUESTION SEQUENCE:

In order to make the questionnaire effective and to ensure quality to the replies received, a researcher should pay attention to the question-sequence in preparing the questionnaire. A proper sequence of questions reduces considerably the chances of individual questions being misunderstood. The question-sequence must be clear and smoothly moving, meaning thereby that the relation of one question to another should be readily apparent to the respondent, with questions that are easiest to answer being put in the beginning. The introduction to the questionnaire should be as short simple and easy to answer. The first few questions are important, as they are likely to influence the attitude of the respondent and in seeking his desired cooperation. The opening question should warm up and arouse human interest.

As a general rule, questions that put too great strain on the memory or the intellect should be reserved till later. Likewise, questions relating to personal wealth and personal character should be avoided in the beginning.

The questions that are vital to the interview come following the opening questions. Question sequence can be rearranged here. The question sequence should go from general to the more specific. The question sequence should confirm the respondents' way of thinking. With structured questionnaire the best that can be done is to determine with pre-testing the question sequence, which is likely to produce good report with most people.

QUESTION WORDING:

Great care is required in formulating the questions. Reliable and meaningful returns depend to a large extent on this process. The wording of the questions should be impartial to avoid a biased

picture of the true state of affairs. Adjectives and descriptive phrases should be avoided. Though multiple-choice questions are used in the structured questionnaires various open-ended questions are also inserted with it to provide a more complete picture of the respondent's feelings and attitudes.

Words should be properly chosen for smooth understanding of the respondents. Simple words are always welcome while preparing questionnaire. Words with ambiguous meanings, danger words, catchwords or words with emotional connotations should be avoided.

All questions should meet these standards viz.

- *Should be easily understood;*
- *Should be concrete and should conform as much as possible to the respondent's way of thinking; and*
- *Should be simple.*

More importance is also to be given for specific question formulation and pre-test question.

Biased questions and "slant-side questions" should be avoided. Never try to harm the prestige of the informant.

6.2.7 PHYSICAL FORM OF A QUESTIONNAIRE:

The process of constructing questionnaire is divided into following types:

- Information to be sought.
- Type of questionnaire to be used.
- Writing a first draft.
- Re-examining and revising questions
- Pre-testing and editing the questionnaire
- Specifying procedure for its use.

The physical form of a questionnaire is as follows:

Size: The size of a questionnaire depends upon the scope of the survey. One side of the form should be used. Adequate space should be left. Enough background materials should be given to encourage the informant. Sometimes booklets should be sent if the questionnaire is large.

Quality of the paper: The paper, on which the questionnaire is written, should be durable. Colour papers may be used in questionnaire to attract the attention of the informant.

Arrangement of items on the questionnaire: Questions, which belong together, should be arranged together. When the question is dependent upon the answer to the preceding one, it should be given a subordinate place.

6.2.8 PRE-TESTING A QUESTIONNAIRE:

The pre-testing of questionnaire consists of selecting, approaching and interviewing a small segment in the same manner to be followed in the full-scale operation and then analyzing the results in the light of the objective of the study.

Pretest is done for the smooth understanding of the informants. The ambiguous question and complex phrasing are avoided.

The pre-test is a valuable indicator of the effectiveness of a questionnaire to collect data. Whether the respondents are misinterpreting any question is known from pre-test. The results obtained in a pretest can suggest new ideas or hypotheses for further study.

Before the pre-test the questionnaire should be prepared well to avoid the test repeatedly.

6.2.9 MERITS AND DEMERITS OF QUESTIONNAIRE METHOD:

The merits of questionnaire method are as follow:

- *Wider and more representative coverage is possible at the same cost.*
- *No field staff is required.*
- *Cost per questionnaire relatively low.*
- *No bias of interviews*
- *Respondent can answer questions directly*
- *The respondents have a greater confidence that they will not be identified as holding a particular view or opinion.*
- *The questionnaire places less pressure on the respondents for immediate response.*

The demerits of questionnaire method is given below:

- *High degree of non-response*
- *Questions, which require probing, can't be asked*
- *Slowest of all methods of data collection*
- *Assumes that the respondent is educated*
- *Respondents often misinterpret a question*

We decide to use survey research to answer the research question. A well-administered questionnaire prepared by self is considered the most appropriate survey technique. We can conduct survey that includes several scales to measure our variables in the study.

The survey questionnaires should begin with a brief introduction to the study. Each section should include basic instructions about completing the question. The sections should be arranged systematically to prevent earlier questions from biasing answers to later questions.

Careful planning of the physical design of the questions, careful selection and phrasing of the questions affect the number of returns and the meaning and accuracy of findings.

Questionnaire method is essential in media research. To test the various aspects of the source, the message, the channel and the receivers of the media system it is used. Media exposure can be measured by this method.

6.3 SUMMARY:

- A questionnaire is a performa containing a sequence of questions to elicit information from the interviewees.
- A questionnaire consists of a number of questions printed in a definite order on a form.
- Questionnaires are either personally administered or sent to the respondents by post or e-mail.
- There are two types of questionnaire: Structured and Unstructured questionnaire.
- There are three main aspects of questionnaire viz. (i) The general form, (ii) The question sequence, and (iii) The question wording.
- Physical forms of the questionnaire should be attractive.
- Pre-testing is necessary to check the effectiveness of the questionnaire.
- Questionnaire must contain simple but straightforward directions for the respondents so that they may not feel any difficulty in answering the question.
- Questionnaire form is essential while measuring media exposure.

6.4 KEY WORDS:

Questionnaire: A questionnaire is a performa containing a sequence of questions to elicit information from the interviewees. A questionnaire consists of a number of questions printed in a definite order on a form. Questionnaire must contain simple but straightforward directions for the respondents so that they may not feel any difficulty in answering the question.

Questionnaire Administration: Questionnaires are either personally administered or sent to the respondents by post or e-mail.

Types of Questionnaire: There are two types of questionnaire: Structured and Unstructured questionnaire.

6.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. What is questionnaire? Explain briefly how to design a questionnaire.

2. What are the main aspects of a questionnaire? Write the advantages and disadvantages of a mailed questionnaire.
3. Prepare a questionnaire to measure the media exposure of literate adults in your locality.
4. Write short notes on:
    a. Pre-testing
    b. Structural questionnaire
    c. Physical form of questionnaire
5. What are the basic differences between a schedule and a questionnaire?
6. Define a target group and design questions to collect information on the following topics:
        i. Political party affiliation.
        ii. Attitudes towards television soap operas
        iii. Attitudes towards newspaper editorials.
        iv. Attitudes towards the frequency of television commercials
        v. Public television viewing habits.

6.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*
- **Introduction to Communication Research** by *John C Reinard* (Benchmark, 1994)
- **Practical Marketing Research** by *Jefferey L Pope* (Amacom, 1993)
- **Introduction to Survey Research** by *Pamela L Alreck & Robert B Settle* (Irwin, 1995)
- **Communication Research: Strategies and Sources (2nd ed)** by *Rubin, R.B., Rubin, A.M. and Piele, L.J. Belmont, CA,* (Wadsworth)

M. A. Mass Communication (2nd year)

MEDIA RESEARCH MMC 205 Lesson: 7

CONTENT ANALYSIS

Writer: Prof. B. K. Kuthiala

Chairperson, Dept of Mass Communication, Kurukshetra University, Kurukshetra.

Converted in to SIM format by: Sh. M. R. Patra

Faculty Member, Department of C M & T, GJUST, Hisar, Haryana.

LESSON STRUCTURE:

This lesson shall provide an introduction to the . We shall start with the . Finally, we shall try to understand the. The lesson structure shall be as follows:

7.0 OBJECTIVES:

The objectives of this lesson are as follows:

- ***To get an Introduction to Content Analysis***
- ***To Know About the various Aspects of Content Analysis***
- ***To Know About the Reasons Behind Studying Media Content***
- ***To Know About the Process of Content Analysis***
- ***To Know About the Limitations of Content Analysis***

7.1 INTRODUCTION:

Content analysis is one of the most important methods of communication research. It is unique to communication study and one of the most important research techniques in social sciences. The broad purpose of content analysis is to analyze data within a given context in view of the meanings given to them.

Most research techniques are concerned with observing stimuli and resistances, describing the behaviours, differentiating individual characteristics, quantifying social variables and thus testing hypothesis. Content analysis on the other hand is outside the physical vehicle of communication and analyses the symbolic qualities of the content to trace the antecedents,

correlates or sequences of communication and therefore, making the unobserved context of data more clear.

7.2 PRESENTATION OF CONTENT:

The content of this lesson is presented as follows:

- *Content Analysis- An Introduction*
- *Aspects of Content Analysis*
- *Reasons Behind Studying Media Content*
- *Process of Content Analysis*
- *Limitations of Content Analysis*

7.2.1 CONTNT ANALYSIS- AN INTRODUCTION:

Barnard Berelson describes content analysis as *scientific description of the content of communication*. In this regard, the often-referred formula is Harold Lasswell's formula: *Who says What to Whom in What channel with What effect?* Accordingly, content analysis answers the question about WHAT i.e. the content of the channel. In other words, content analysis can be called message analysis.

But content analysis does not confine itself to the content of the media. It also deals with the other questions of Lasswell's formula namely "Who (source), Whom (audience), channels, and effects".

Content analysis also encompasses other communicative circumstances and contexts such as psychological conditions institutional and cultural variables. In order to understand the clear meaning of content analysis let us illustrate with some examples

SOME EXAMPLES OF CONTENT ANALYSIS

- How much space is given to advertising in newspaper?
- What percentage of the total time do ads, news, current affair programmes, films, etc., on television, consume?
- How many news stories appear about the rural development in newspapers? What is proportion of the space they occupy?
- How many times Prime Minister and the Leader of Opposition are mentioned in newspapers, radio and television?

7.2.2 ASPECTS OF CONTENT ANALYSIS:

Content analysis became popular during the Second World War when intelligence units on both the sides monitored the broadcasts on radio. Analysis of the content of the broadcasts helped to monitor the movement of the troops of the enemies. For example, it was possible to trace the

movement of German troops in occupied countries by studying the popular music played over radio stations in particular areas.

If a radio station suddenly changed to music that appealed to German soldiers it was concluded that Germans have occupied the area. The American agencies had broken the secret code of Japanese transmission and thus were able to provide useful information to the fighting troops.

After the war the procedures for analyzing the content of the newspapers, radio, cinema and television broadcast and indeed, any form of communication were more completely developed. Today content analysis is a set of systematic and objective procedures for the quantitative study of messages. Content analysis can be used to study any form of message, from telephone gossip to religious scriptures. Textbooks, novels, slogans, election manifestos, advertisements, speeches, procedures of the researches etc. are some of the subject matters of content analysis. It is mainly a tool of research, which can reveal the hidden messages of the content that media are presenting to the audiences.

All the steps involved in the use of scientific research are followed in content analysis. The research topic is selected, objectives designed, information about the topic collected, observations made, data processed and analyzed, conclusions derived and results reported. The major difference is at the stage of making observations. The observations are not made on people but on the content of the communication.

DATA OF CONTENT ANALYSIS:

The material for content analysis includes the context to which meanings are attributed. These may include verbal discourse, written documents and visual presentations. The verbal discourse may include interpersonal talk, group discussions, public speeches, and spoken words on radio, cinema and television. The written documents include personal letters, official documents, newspapers, magazines, books, etc.

Visual presentations include doodling while thinking or talking, freehand drawings by the children, paintings, photographs, graphic art, shots and sequences (cinema and television) and full programmes of television and cinema.

In fact content analysis can be compared to the analysis of food we eat. A food analyst may tell us the quantity of proteins, carbohydrates, fats, minerals, vitamins, etc. that are contained in a given food item. Similarly the content of the communication that we consume can be considered as the food that our mind takes.

We are so careful about what is the content of the food that we give to our body; it would be appropriate also to keep a watch on what is the content that we give to our mind. If keeping our body healthy is important, perhaps, equally or more important is to keep our mind in good health.

Most of the content analytic studies pertain to the analysis of newspapers, magazines, books, radio broadcast, films, comics and television programmes. However, the method is increasingly applied to situations like personal letters, official documents, talks of children, recording of the negotiations, accounts of the witnesses in the courts etc. The new areas, which will render themselves to content analysis, are the chats on Internet.

Social scientists have also content analyzed postage stamps, motifs on ancient pottery, dreams, wall writings and *graffiti* written in public toilets, trains, buses and tourist spots, etc. The slogans written on the back of vehicles have also been content analyzed and have revealed interesting data.

OBJECTIVES AND HYPOTHESIS OF CONTENT ANALYSIS:

There are two broad objectives of any content analysis study. These are:

(i) To study the degree of freedom a media organization exercises in relation to the society and also the degree of freedom within the organization.

(ii) To study how the media-organizational processes and procedures that influence the selection and processing of the content.

Communication researchers have proposed five broad hypotheses for content analysis.

- *Content reflects the social reality:* Mass media can be seen as the mirror images of the society and whatever important happens in the society is contained in the various media. Thus the users of media in fact witness whatever is happening around them through the media. Thus content analyses of media will be an indicator of the events and value systems of the society of whose media are analyzed.
- *The content of mass media is influenced by the socialization and attitudes of the media workers:* The manner in which the content of the media is selected or rejected and also processes vary from media to media but at operational levels it is more or less an individual decision. This decision of acceptance or rejection of an item and the manner in which the content is presented depends upon the training, attitude, opinion, bias, etc. of the media person who is involved in the process.

- Experiments have shown that same information given to different sub-editors leads to a wide variety of news reports. Similarly different reporters witnessing the same event reported differently. Sociological research reveals that individual characteristics of the media persons play an important role in deciding the content of the media.
- *Content is influenced by media organizational routines:* Every media organization has its own work culture. We are all familiar with the stylebooks of news organizations. Each news organization has its own stylebook and this influences the presentation of the content. A traditional newspaper will cover events up to late evening only. But a more dynamic newspaper can even take up events that happened late in night. The editorial policies or the content policies of the media organizations also influence the content a great deal.
- *Content is influenced by social institutions and forces:* Media organizations do not function in isolation. They are the sub -systems of the social, political and economic system of the society. The broad systems are bound to influence the sub -systems and hence the content of the media is also determined by the priorities of the socio- economic values of the society.
- *Content of the media is a function of ideological positions and maintains the status quo:* According to the Cultural Ratification Theory of the media effects the content of media is such that it helps to maintain the status quo. In other words, nothing goes in media, which is drastically challenging or revolutionary to the existing structure and function of the society. The content of the media helps to maintain the status quo.

7.2.3 REASONS FOR STUDYING MEDIA CONTENT:

Media became the subject matter of analysis for two reasons. Firstly while studying the effects of mass communication it was found necessary to study the stimuli provided by the media. These stimuli come in the form of the content. Secondly, on the part of the media professionals and also media researchers there is a need to understand the appeal of the content i.e. the strength of the message and its nature. Thus these need to be studied. This has to be studied more from the point of view of the audiences.

Both the above-mentioned reasons have practical basis from the point of view of mass communication and they have gradually expanded to embrace many related issues as well. Early study of content dealt with mainly the informational content of news. Now the portrayal of

crime, violence, sex, female body, stereotypes, use of media as propaganda, and minority and caste biases in media have become the subjects of study for content analyses.

STUDY OF MEANINGS:

Communication has also been conceived as the transfer of meanings rather than the transfer of messages. It means that it is important to understand the meaning given to a particular message or text because we know that the receivers will interpret the same message or text in different manners. Therefore, communication is really what the receivers understand by it. Thus content analytical studies do not restrict to the analysis of the texts only. It also goes to possible range of meanings or intrepretation by the receivers.

In other words we can say that content analysis also studies what is' between the lines' or it distinguishes between the intended message and the received message.

For example, the denotation of Bofors is a 'gun produced by a company with given specifications'. But the implied meaning of the word is something to do with ‘corruption and embezzlement.'

In ads the use of the derived meanings is a very common occurrence. When we use a model in an ad we relate the product to the model. Both model and product take added meanings.

Denotative meaning is fixed for all while connotative meanings involve both variable meanings according to the recipient and the elements of positive or negative evaluation. If the media content consists of large amount of texts, then, it is necessary to investigate the latent meanings as well.

7.2.4 PROCESS OF CONTENT ANALYSIS:

Once the researcher has decided the objectives of the research, the second step is to identify the units of analysis. While doing the content analysis of a newspaper the news items, articles, features and editorials, photographs, etc. can be the units of analysis. While studying the portrayal of sexual behaviour, shots and sequences portraying sex may be the units of analysis.

Words, sentences, paragraphs, pages can also be the units of analysis. Similarly programmes on radio and television can also be units of analysis. The units of analysis depend upon the nature of investigation that is being carried out.

The next step is to decide the categories of analysis. For example, while doing a content analysis study of the dateline of the news stories of a newspaper the categories can be:

national, capital, state capitals, other metropolitan cities, big cities, district headquarters, towns, villages, capitals of foreign countries.

Similarly, in the same study UNI, PTI, Reuters, Correspondent, Staff Reporter, Stringer, or combination of these may be the categories of analysis. While doing the content analysis of television programmes, News, Current Affairs, Chat Shows, Count Down Programmes, Films, Film Based Programmes, Science Programmes, etc. can be the categories.

While analyzing the objectivity of news items the categories can be 'fully balanced', ' partly balanced', ' not balanced', etc. can be the categories of analysis.

The units of analysis and various categories of the units of analysis are given symbols either in the form of alphabets or numerals. This information, the units, the categories of analysis and the symbols given to them are organized in a systematic manner in the form of a Code Book.

The Code Book is a reference document, which is standardized for a given study and used uniformly by all researchers at the stages of coding and tabulation.

CODING IN CONTENT ANALYSIS:

With Code Book as a guide, the qualitative data content in the media is converted into different symbols, which are placed on a coding sheet. The code sheet is generally a paper on which rows and columns are drawn so that it contains a number of boxes.

Each box has a column number and a row number. Each unit of analysis is given a fixed column number and the data about a given variable of all the units of analysis is coded in a box. For example, in the Code Book we decide that column nos.10-11 will contain information about the placement of the news and categories and codes are:

Category	*Codes*
First lead story----------	91
Second lead story----------	92
Third lead story----------	93
Other stories on front page---	94
The number of page on which the story appears----------	02

Now if we are analyzing a story on third page then we write **03** in column numbers **10** and **11** of the code sheet, which have been already specified, for page numbers. While analyzing the next item, which appears, say on page 16 we will put **16** in the specified columns. Coding is very

meticulous and time-consuming task. It needs lot of concentration on part of the researcher. It has to be done very carefully otherwise the whole research study may get spoiled. Sometimes we use more than one person to perform this task of coding. In such cases there is a possibility of variation between the coders.

For example one coder may think that the story is balanced and the other coder may think that it is partly balanced. Therefore, in content analysis study it is of utmost importance that all the units of analysis as also the categories are explicitly defined and explained so that they are mutually exclusive.

Another method of managing the variation of perception of the coders is to check the *inter-coder differences* and then quote them in the report of the study. A very high variation in the coding perceptions will lead to distorted results. Generally another researcher checks the coding done by one researcher so that the errors can be minimized. Communication researchers have also evolved formula to measure inter-coder differences.

TABULATION

Once the coding has been done and checked, the data has to be tabulated. Tabulation means counting of similar codes and also cross tabulating of two or more variables. If the data is small the tabulation can be done mainly by counting or by tally marks (IIII, IIII). But it is advisable that computers carry out the tabulation. There is much software available for such analysis.

The most commonly used is *SPSS* (Special Programme for Social Sciences). The first step of analysis is frequency tabulation where the numbers and percentages of each category are given in a tabular form. The second step is cross tabulation where two variables that are likely to influence each other or dependent upon each other are put across each other.

For example, the place of the dateline and whether the story is political in nature can be cross tabulated to determine whether most of the political stories arise from national, capital or state capitals. Once the tabulated data is available it is interpreted and conclusions drawn.

ILLUSTRATION OF CONTENT ANALYSES:

Content analysis appears to be a tedious task, but clear understanding makes it not only easy but very interesting also. In order to make you understand a real example is given below:

Subject of research: Content analysis of editorials of three leading newspapers.

Objectives: The objectives are to determining the comparative importance given to Prime Minister and the Leader of Opposition. This study aims to find out the nature of treatment given to Prime Minister and leader of Opposition in the editorials of three leading newspapers.

Units and Categories: **In this study the units of analysis are the editorials of three selected newspapers. Let us say that the researcher has decided to analyze the newspaper of one-month say for example April 2000. Thus all the editorials appearing in the selected newspapers in the month of April will constitute the units of analyses of the study.**

Code Book: Next step is to prepare the Code Book. The following Code Book can be used (this is only an illustration and can be expanded according to the requirement of the study).

CODE BOOK

Col No.	Item	Category	Code	Remarks
01-03	Sr.No.	Sr.No.	001	Give Sr.No.to each editorial
04	Source	Times of India	1	
		Hindustan Times	2	
		The Hindu	3	
05-06	Space	Total space given to the edtorial	Actual space in col. cm	Measure the space in col.cms. with a scale
07	PM's name	No. of times P.M.'s name mentioned in the editorial	Not mentioned	0
			Once	1
			Twice	2
08	Leader of opposition	No. of times Leader of opposition's name mentioned	Not mentioned at all	0
			Once	1
			Twice	2
09	Reference	Highly positive		1
		Positive		2
	Neutral		3	
		Negative		4
		Highly negative		5

This can be expanded and continued according to the need of study.

A TYPICAL CODING SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												

18
19
20
21
22
23
24
25

A Typical Code Sheet

SAMPLING:

Sometimes when the units of analysis that we are covering for content analysis is very large we resort to sampling. Sampling means selecting a random representative sample. In such a case it is not required that all the units should be analyzed but a small selected sample can be analyzed and the results would reveal the properties of the entire universe under study.

In case of newspapers and magazines the two procedures of sampling are used which can be used in isolation or in combination with each other.

Firstly all the days of which the newspapers are to be analyzed can be listed and the sample selected randomly. For example, if we want to analyze the newspapers of one year then there would be 365 issues. We can select 50 issues out of these 365 by using random number tables or by creating random number on the computers. Each issue is given a number from 001 to 365 and the numbers that come in the random selection are selected.

The second method is to construct a week and /or to take a regular week. Out of the 52 weeks in the above proposal we can select any four weeks and those four weeks newspapers can be analyzed. Alternatively we can decide to take Monday of the first week of January, Tuesday the first week of February, Wednesday of the first week of March and so on. Any method can be used for selecting the random sample, which has no inbuilt bias of selection in it.

Similarly all the programmes of the day on television can be listed and given numbers and the sample selected randomly. The same random selection can be done for all the items in a newspaper or of all the programmes on radio and television. But care must be taken that the sample should be sufficiently large and selected randomly without any prejudice or bias.

7.2.5 LIMITATIONS OF CONTENT ANALYSIS:

The process of content analysis as a research tool has some inherent limitations. Content analysis is in fact a process of converting qualitative data into quantitative data. This quantitative data is likely to be treated for statistical analysis. But the conversion of quality into quantity may not be very standardized and therefore statistical analysis may be misleading.

Secondly, as mentioned earlier the coding process is quite subjective and can have the influence of the coder. This makes the content analysis not replicable. In recent years soft wares have been developed to computer analyze the content. This to some extent avoids the subjectivity of the coder.

Lastly, content analysis is also expected to contribute to social theory. But the categories for content analysis are obtained from the very material being analyzed and therefore, the findings may not be generalized. By categorizing the content we may be excluding much of the symbolic richness and uniqueness of the data.

7.3 SUMMARY:

- Content analysis is the scientific description of the content of communication. Content analysis answers the question about WHAT i.e. the content of the channel. In other words, content analysis can be called message analysis.
- Most of the content analytic studies pertain to the analysis of newspapers, magazines, books, radio broadcast, films, comics and television programmes. However, the method is increasingly applied to situations like personal letters, official documents, talks of children, recording of the negotiations, accounts of the witnesses in the courts etc. The new areas, which will render themselves to content analysis, are the chats on Internet.
- Social scientists have also content analyzed postage stamps, motifs on ancient pottery, dreams, wall writings and *graffiti* written in public toilets, trains, buses and tourist spots, etc. The slogans written on the back of vehicles have also been content analyzed and have revealed interesting data.
- Content analysis is in fact a process of converting qualitative data into quantitative data. But the conversion of qualitative data into quantitative data may not be very standardized and therefore statistical analysis may be misleading. Secondly, the coding process is quite subjective and can have the influence of the coder.

7.4 KEY WORDS:

Content Analysis: Content analysis analyses the symbolic qualities of the content to trace the antecedents, correlates or sequences of communication and therefore, making the unobserved context of data more clear. It is unique to communication study and one of the most important research techniques in social sciences. The broad purpose of content analysis is to analyze data within a given context in view of the meanings given to them.

Study of Meanings: Communication has also been conceived as the transfer of meanings rather than the transfer of messages. It means that it is important to understand the meaning given to a particular message or text because we know that the receivers will interpret the same message or text in different manners. Therefore, communication is really what the receivers understand by it. Thus content analytical studies do not restrict to the analysis of the texts only. It also goes to possible range of meanings or intrepretation by the receivers.

Coding in Content Analysis: With Code Book as a guide, the qualitative data content in the media is converted into different symbols, which are placed on a coding sheet. The code sheet is generally a paper on which rows and columns are drawn so that it contains a number of boxes.

7.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. Write a detailed note on content analysis.
2. Discuss the various aspects of content analysis with examples.
3. Discuss the process of content analysis.
4. Discuss the importance of coding in content analysis.

7.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*
- **Introduction to Communication Research** by *John C Reinard* (Benchmark, 1994)
- **Practical Marketing Research** by *Jefferey L Pope* (Amacom, 1993)
- **Introduction to Survey Research** by *Pamela L Alreck & Robert B Settle* (Irwin, 1995)
- **Communication Research: Strategies and Sources (2nd ed)** by *Rubin, R.B., Rubin, A.M. and Piele, L.J.. Belmont, CA,* (Wadsworth)

ADVERTISING RESEARCH

Writer: Sh. Mihir Ranjan Patra

Faculty Member, Department of C M & T, GJUST, Hisar, Haryana.

Vetter: Sh. Sushil K. Singh

Faculty Member, Department of C M & T, GJUST, Hisar, Haryana.

Converted in to SIM format by: Sh. Mihir Ranjan Patra

LESSON STRUCTURE:

This lesson shall start with an introduction to advertising research. We shall then discuss about the reasons why advertising research is done. Next we shall discuss advertising pre-testing and post-testing. Finally, we shall try to understand some major methods of advertising research. The lesson structure shall be as follows:

8.0 OBJECTIVES:

The objectives of this lesson are as follows:

- ***To Have* an Introduction to Advertising Research**
- ***To Know About the Reasons Behind Advertising Evaluation***
- ***To Know About Advertising Pre-testing***
- ***To Know About Advertising Post-testing***

8.1 INTRODUCTION:

Advertising is *omnipresent*. It is everywhere. Advertising is often considered *omnipotent*. It is thought to be very powerful. Vance Packard once called advertising the *'hidden persuader'*. Others say that advertising is a *powerful tool of business and marketing*. Some others say that advertising *manipulates* our needs and makes us buy things, which we did not want. Advertising is considered so powerful that doing business today without advertising is like winking at a girl in a dark room.

Countering claims about this powerful persuasive nature of advertising is one of the most notorious saying in the world of advertising, *"I know half the money I spent on advertising is*

wasted; but I can never find which half"? Advertisers spend huge amounts of money on advertising.

A big question that arises here is *whether all the money are well spent*? That is *are advertisements really as effective as they are claimed to be?* The vast amounts spent on advertising necessitate systematic and objective inquiry into the role of advertising, its effectiveness and its overall contribution.

This systematic and objective inquiry is called advertising research. It is also called *evaluative research*, *advertising evaluation*, or advertising *effectiveness research*. Whatever name it is given, advertising research helps avoid costly mistakes. It helps to predict the relative strengths of alternative strategies and to increase the efficiency of advertising in general. Measurement of advertising effectiveness helps maximize the contribution of advertising.

8.2 PRESENTATION OF CONTENT:

In this lesson, we shall discuss about the various facets of advertising research. Hers we shall first discuss about the reasons behind advertising evaluation. Then we shall focus on pre-testing and post-testing. The content of this lesson shall be presented as follows:

- Advertising Research- An Introduction
- Reasons Behind Advertising Evaluation
- Advertising Pre-testing
- Advertising Post-testing

8.2.1 ADVERTISING RESEARCH- AN INTRODUCTION:

Measuring advertising effectiveness in quantitative terms is very difficult. The simplest reason being the workings of human brains cannot be quantified. Also advertising is not the sole means of promotion. Nor is it the only sole source of information and influence. We buy a product or adopt a service or idea because of so many factors. These include word of mouth channels, retailer push sell, public relations and so many other factors in addition to advertising.

However, over the last few decades, a lot many methods have been devised to measure the effectiveness of advertising. A lot of these hypotheses have been derived from wide ranging areas of psychology and behavioural sciences like motivation, learning, conditioning, and of course, communication. These methods do not try to relate advertising effectiveness with sales figures. This is because before contributing to sales, advertising has to fulfill its communication objectives like:

- *Informing target audience through exposure,*
- *Reminding them,*
- *Creating and reinforcing an idea or image,*
- *Motivating or conditioning the customers to buy, while*
- *Creating brand preference, or*

- *Reassuring to create brand loyalty.*

The effectiveness of advertising to achieve these objectives eventually contributes to its sales effectiveness.

Measurement of effectiveness of advertising may be based on a single advertisement, on an entire campaign, or on a particular portion of a campaign. Also effectiveness evaluations may be undertaken at a single point of time or compiled over short or extended periods of time.

8.2.2 REASONS BEHIND ADVERTISING RESEARCH:

A big question often arises in the minds of advertisers: Why Evaluate? Here is the answer. Advertising involves huge spending. These spendings are considered as investments. Thus advertising is accountable in terms of returns. To find out the efficiency and efficacy of the money spent, the effectiveness of advertising needs to be measured.

For advertising to make full contribution to sales and profit, well-planned and executed research is essential to pinpoint areas within the advertising effort that are successful, and that need improving. Otherwise mistakes or shortcomings in advertising will badly affect sales while eating away sizable amounts of money.

Often sales measurements are thought to be a major yardstick for advertising effectiveness. This would be true only when advertising is the dominant contributor to sales, and where sales response is immediate (like in 'sale' advertisements). But since advertising does not work alone, sales records cannot be the sole measure of advertising effectiveness. So evaluative methods of measuring advertising effectiveness are adopted.

Another question then arises: When to evaluate? Measuring or testing of advertising effectiveness may take place at any stage of the advertising process - from the planning stage to execution to the post-campaign stage. Often advertisers and advertising agencies face the critical dilemma of when to test - before the ads are placed in the media, during the campaign or after the campaign is over.

Evaluative research before the ads are placed in the media or *pre-testing* can assist in the development of more effective advertisements. The most important thing here is that mistakes or shortcomings can be found out and improved upon before media costs have been incurred. However, the limitations of pre-testing include the lack of real or actual conditions as such tests are conducted under simulated situations and with a limited representative audience. Also often the ads being tested are not in final shape. But evaluative research as the ads are

placed in the media, concurrent testing, and evaluating ads after the campaign is over, post-testing, are conducted in real situations and actual conditions.

However, both concurrent testing and post-testing are more expensive in terms of money and time spent than pre-testing. Also many advertisers prefer post-testing only. Very few opt for concurrent testing.

8.2.3 ADVERTISING PRE-TESTING:

Such research attempts to predict the performance of specific ads in terms of liking, motivation etc. of audience members. Different types of copy, length of copy, types of visuals, various appeals and the various types of approaches will work differently for different products and different target audiences. So advertisers want to finalize the best possible options that are likely to produce better results than others.

Pre-testing is a kind of insurance against bad mistakes. It finds out the appropriateness of the ads and their individual components like headline, visuals, body copy and layout etc. It cannot, however, show what kind of sales response ads can elicit. Such tests are confined to the communication of the advertising messages. Major methods of pre-testing include:

- *Consumer Jury,*
- *Storyboard Tests,*
- *Laboratory Tests (Tachistoscope, Pyschogalvanometer, Eye camera, Pupil Dilation)*
- *Attitude Tests (Projective Techniques and Depth Interviewing).*

CONSUMER JURY:

Here a representative cross section of the target audience is selected as jury members to judge the advertisements being tested. These persons are most likely to be exposed to the final ads. The response of such a jury is totally different from those of advertising personnel who, on one hand, over estimate their knowledge of prospective buyers, while on the other hand, are too concerned with technical aspects like copy, visuals, layout, filming etc.

Respondents in a consumer jury test are asked to evaluate one or more ads by some special criteria as attention getting power, believability of claims etc. They are asked to rank the ads in the order of merit. To create real and life-like situations, print ads are inserted in magazines or TV ads are shown with some recorded programme.

Such tests usually help separate very weak ads from very strong ads. Also these tests do not involve much time or money. However, such studies have some disadvantages too. The rating of the respondents may be based on unimportant details. Consumer jury tests provide only the conscious evaluation and not subconscious evaluation, which plays an important role in

buying behaviour. Also as the respondents often play the role of experts they provide subjective evaluations, and not objective evaluations based on their own reactions.

And such tests are mostly confined to the noticeability of the ads while ignoring other aspects. Also such studies do not provide much control as everything is in the hands of the respondents.

STORYBOARD TESTS:

Such tests are used for TV ads. Before TV ads are shot, storyboards (series of important shots drawn in the comic strip fashion) are created. These storyboards are transferred on to filmstrips and the audio part is recorded. The selected audience is shown the synchronized version of the filmstrips and audio tape in the slide and sound format. These way television ads can be evaluated even before they are prepared.

Storyboard testing is a cost saving evaluation method, but it is far distanced from the actual experience of watching TV ads. So it is not the most effective method of evaluation. Also it excludes features like brightness, loudness and most importantly movement that add life to TV ads.

LABORATORY TESTS:

When we come across an advertisement, we react and respond in many ways - like raising of eyebrows, dilation of pupil, other eye movements, facial expressions and body movements. Special laboratory conditions are created to measure such bodily responses. These conditions provide the researcher a highly controlled environment to conduct the test.

Such tests can measure attention, comprehension, and retention of the ad message. A wide variety of instruments and devices are used for this purpose. These include:

The Tachistoscope: This is basically a slide projector, which can be operated under varying conditions of speed and illumination. This device helps find out how fast or slow the respondents perceive and respond to the advertising message. The tachistoscope, however, helps measure only the initial response after watching the ads for the first time and not the response to ads after multiple viewing.

The Psycho Galvanometer: This device is used to measure the bodily responses while the respondent is watching an ad. This highly complex device uses electrodes that are attached to the respondent's body to measure the electrical resistance (which is the manifestation of the response).

Eye camera: This is one of the most widely used devices. It measures the actual viewing behaviour of the respondents. This camera is fitted with high power lenses and is focused on the eyes of the respondents. It records continuously the activities of the eye as it moves

horizontally and vertically while the respondent is watching pictures on a screen. This device helps find out where the respondent looked at any moment, how the eye moved over the picture, and how long it concentrated on a point. The eye camera is used to test print ads, posters, TV ads etc.

Pupil Dilation: This method measures the changes in the size of the pupil of the eye as the respondent watches or sees an ad. Larger or expanded pupil means stronger interest and smaller or constricted pupil means lower interest.

All these mechanical devices used for laboratory testing can only measure how respondents react to an advertisement while watching it. These devices can not measure attitude changes that take place long after the first viewing. Neither can such studies predict the respondents' buying behaviour.

Another problem with laboratory tests using mechanical devices is that such tests involve very small samples of the target market. Then there is the problem of the alien and artificial environment of the laboratory, which is entirely different from real life situations.

ATTITUDE TESTING:

Attitudes are viewpoints or opinions that are characterized by a predisposition or state of readiness to act or react in a particular way to certain stimulus. Here ads are the stimuli. And through a clever mix of information and images, advertising tries to create a favourable disposition or attitudinal change towards the product among the target audience. Attitude testing tries to measure the degree and extent of these attitudinal changes as created by advertisements. Here direct questioning is not used. Rather attitude scales are used. The attitude scale measures the position of an individual's attitudes along a continuum varying form wholly favourable at one end to wholly unfavourable at the other.

Here respondents are given a number of relevant statements and their attitudinal positions on the scale for these statements are obtained. From these scores, the favourability of respondents towards the product is measured.

However, providing respondents with statements and asking them to rank these statements on the attitude scale puts the respondents in the role of experts. This leads to a lot of biased and subjective judgement. To overcome such problems, projective techniques and depth interviewing are used.

Projective techniques: These techniques are used to overcome the barriers of rationality, logicality and politeness, which often play an important role in case of direct questioning. In direct questioning people often tend to give politically correct answers that are considered right by many. Also they try not to hurt the researcher and thus avoid negative answers.

In case of projective techniques, an indirect approach is adopted. Instead of asking questions, the respondents are subjected to different tests. These include the association test, sentence completion test, and thematic appreciation test (TAT).

Association tests attempt to get an immediate response to a stimulus such as a word or picture by asking the respondent to say the first thing that comes to his mind. Sentence completion tests are an extension of the association test. Here the respondents are given incomplete sentences and asked to complete them. Thematic appreciation tests (TAT) use pictures, which are shown to respondents. They are asked to tell stories about the pictures. These descriptions and interpretations are analyzed to find out about their attitudes.

Depth Interviewing: Here the respondent is first put at ease by the researcher while he tries to build up a rapport with the respondents. Then the respondent is asked leading or probing questions to bring out his underlying subconscious reaction to the brand or organization advertised. The questions are never structured and the interview is always conducted in a free and cordial manner. The flexibility and freeness brings out many facts, which usually are hidden beneath the conscious mind of the respondent.

Depth interviewing needs to be conducted by highly skilled and trained psychologists to be able to fully explore the attitudes of respondents.

8.2.4 ADVERTISING POST-TESTING:

One often faces the problem of "artificiality' while conducting pre-testing. This problem is easily overcome during post-testing. Post-tests attempt to measure the 'actual effect of real advertisements in real situations'. This is a more practical approach to measure the effectiveness of advertisements. Also, post-testing measures total advertising effectiveness, while pre-testing only measures the effectiveness of specific aspects of advertisements. Different types of tests are conducted as part of post-testing advertisements. These include:

- *Recognition Tests*
- *Recall Tests*
- *Persuasion Tests*

- *Purchase Behaviour Tests or Sales Tests.*

RECOGNITION TESTS:

Whatever the purpose of an advertisement, its first task is to be seen, read, or heard. Every advertisement uses some means or other to get attention and hold it. Here comes the first big hurdle - recognition. This is simply a matter of identifying an advertisement that one has seen before. Recognition is a necessary condition for effective advertising. If an advertisement cannot pass this hurdle, it will probably not be effective. Recognition tests are usually used for print ads.

While many types of recognition tests have been designed, *Daniel Starch* of *Starch-INRA-Hooper Company* developed the most widely used of such tests. The *Starch Recognition Test* sends newspaper or magazines to respondents and then sends interviewers to conduct the tests. Starch tests usually find out the 'recognition rates' of various elements of the ads like the visual or illustration, headline, logo, body copy, colour, size, shape etc. Such tests provide information regarding

- The percentage of readers, who remember seeing the advertisement *(Noted),*
- **The percentage of readers who recall seeing or reading any part of the advertisement identifying the product or brand, the company name, or logo *(Associated),***
- The percentage of readers who reported reading at least one part of the advertisement *(Read most)*.

One big advantage of the *Starch Test* is that it is simpler as it uses easy questions and can be conducted quickly. Also Starch test has evolved over the last few decades into a highly precise method that covers many product categories. The Starch test has proved highly reliable too.

For television advertisements, there is the *Bruzzone-Test* developed by the *Bruzzone Research Company*. This test is conducted through mail. Respondents are sent questionnaires that show scenes from TV ads with the script, but without the brand name. Respondents are asked whether they remember having seen the commercials before. If the answer is 'yes', then they are asked to identify the brand. This is followed by a ranking of the ads by the respondents on the basis of a list of adjectives. In addition to measuring recognition of TV ads, this test also provides assessment of liking, preference and purchase etc. of the brands.

Another company that has developed Recognition tests for TV and radio ads is the *Communis Company*. Communis tests involve showing brief and edited (5-10 seconds) TV ads without the brand and company identification. The respondents are then asked to indicate if they

have seen the ad, identify the brand and point out elements of the ads, which have been edited out.

The advantages of recognition tests (particularly the Starch test) include that these tests answer the following questions for an advertiser:

- *To what extent is my advertisement seen or/and read?*
- *Are my present advertisements better read or watched than my previous ads?*
- *Are my advertisements better read than those of my competitors?*
- *Is the reading of the ads of my current campaign increasing or decreasing?*
- *How can I present my sales message that it will be better read?*

The greatest benefit of the recognition tests is that it measures what an advertisement has achieved under normal (real) conditions. While response from the audience in terms of recognition does not necessarily bring about sales, the achievement of attention and interest by an advertisement is an important step that often leads to purchase. Another important aspect of the recognition test is its ability to measure effectiveness of ads in all kinds of media and both in real and laboratory situations. In addition, being a low cost method, it is used by most advertising researchers.

Recognition tests, however, are not final measures of advertising effectiveness. In fact, recognition is very easy to achieve by using attention-getting devices like catchy visuals, unusual headlines, bizarre or odd shapes, flashy and vivid colour etc. And recognition alone does not ensure purchase by consumers. So advertisers conduct other types of tests also in addition to recognition tests.

RECALL TESTS:

The recall test is a kind of a memory test that attempts to measure the impression or penetration made by an advertisement on the readers' or viewer's mind. It evaluates the memorability of an advertisement by contacting audience members and asking them what they remember about it. As a test of memory, recall is more demanding and difficult than recognition. Various recall tests differ in the subject matter they deal with and the aid-to-memory they provide. Some deal with print ads while others deal with broadcast ads. Some recall tests use aids to help audience members to remember while others do not use any such aids.

These tests try to answer questions like:

- How many people recall seeing or hearing the ad?
- How much and what do they remember about it?

Some other methods deal with campaign themes and slogans and answer questions like: How fast and how widely is the theme (idea) registering?

Some other tests try to evaluate advertisements before they are placed in the media and answer the question:

How well are the 'test' advertisements recalled after controlled exposures in dummy magazines or while being shown along a set of different ads with recorded programmes?

Other recall test methods try to find out what people have learned about the product, the service or the company advertised. The aid-to-memory or the amount of help provided to the respondents ranges from very little clues like the product category to a complete series of clues designed to draw out the very last detail of the advertisement. According to the presence or absence of clues or aids, recall tests are divided into two types - aided recall and unaided recall.

Whatever the method used, the final objective of recall tests is to find out whether the respondent has established a strong connection between the brand name and the sales message.

Day-After-Recall Test (DAR):

The day-after-recall test is a common method to evaluate television commercials. Noted researcher George Gallup first devised this in the early 1940's. Gallup was then working with the Young and Rubicam advertising agency. Later he joined the Burke Marketing Research Company, where he further developed this method.

The Gallup Recall method involves telephoning 150 to 300 programme viewers 24 hours after a particular television commercial was broadcast. Some companies use a different time period, such as 48 hours or 72 hours. Respondents are asked if they can recall any commercial telecast the previous day in a product category (to which the advertised brand belongs). This is unaided recall, as the brand name or company name is not mentioned. If they cannot recall the advertisement being tested without any clue, then they are given clues about it. This is aided recall.

Once they recall the advertisement, they are asked what they remember about the advertisement, what was said, what was shown, and what the main idea was. They are also asked about the sales message, the story line, the plot, the some visual or audio elements etc. After the interviewing over telephone is over, then the 'scores' are measured in terms of the following:

- *A Proved Name Registration (PNR) score which is the percentage of audience members who recalled the advertisement and proved recall by describing the ad accurately.*
- *An Idea Playback Profile which measures the level of sales message recall.*
- *A Favourable Buying Attitude score that measures its persuasiveness. These 'scores' are then compared with proved norms or average scores of ads of similar length, similar product categories, and similar brands. While the day-after-recall test is an 'on air' test in which only those ads are evaluated which have been telecast and seen by people in real, home situations.*

Sometimes, the ad to be tested is shown on a local cable channel and viewers are told in advance to watch the programme on that channel. This method saves a lot of money, time and efforts.

In addition to the Gallup Recall Test for TV ads, there are other methods also. The Gallup-Robinson Test is specifically designed for print ads. Mapes and Ross Inc. tests recall for both print and broadcast ads.

The main advantage of recall tests is based on the idea that if people recall the ad (or any part of it) then they may buy it. This is because it is thought that top-of-the-mind-recall (the first brand remembered when one thinks of buying a particular product) plays a crucial role in the purchase behaviour. But the criticism is based on the arguement that do people buy a brand if they remember it?

Another criticism is based as different rates of recall of 'thinking' ads (which provide a lot of information, mostly used for SMCG's) and 'feeling' ads (which are image-based and appeal to the heart, mostly used for low differentiating FMCG's). Feeling ads have high recall rates (more than 40 per cent) while thinking ads have low recall rates (about 15 per cent). However, both types of ads succeed in persuading buyers to purchase.

However, over the last six decades recall tests have proved valid and highly reliable than most other tests and thus are used extensively.

PERSUASION TESTS:

Recognition and recall tests ask the questions - do you remember, and what you remember. Persuasion tests ask - were you influenced? Persuasion tests are concerned with 'attitude shift' on part of the audiences after they have seen the ad. Such tests evaluate the effectiveness of an advertisement by measuring whether the ad affects the customers' intentions to buy a brand.

During persuasion tests, consumers are invited to a specific place usually to preview a television programme. This is a pretence as the real motive is to show them the to be tested advertisements in an almost 'real' situation and evaluate their effects. This is done to minimize the artificiality of the situation that occurs in recognition and recall tests.

Before they are shown the programme and the ads, the respondents are asked about their preferences for various brands. This is usually done by filling a questionnaire. Then they watch the programme - complete with advertisements positioned before, during and after the programme. These are a clever mix of existing and new (to be tested) ads. This way the respondents are not aware about the real motive.

After the programme is over, the respondents are asked a mixed variety of questions, which relate both the programme and the ads. These answers are compared with answers of

questions asked before the programmes to find out if there has been any change in the respondents' attitude, liking, and preference towards the brands.

Horace Schwerin and *Paul Lazarsfield* introduced this kind of 'theatre-testing' in the 1950's. Now such tests are being conducted by research organization like McCollum and Spielman, ASI, and ARS. The pre- and post-preferences are measured by determining

- The favourite brand,
- The next preferred alternative,
- Those brands that would not be considered, and
- Those brands that are neither rejected nor accepted.

In addition, the following aspects are also explored:

- Comprehension of message or slogan,
- Communication of secondary copy ideas,
- Evaluation of demonstration and spokespersons etc,
- Perception of brand uniqueness or brand differentiation,
- Irritating or confusing elements, and
- Viewer involvement.

From these explorations, researchers find out the 'attitude shift' (AS) and 'awareness and communication' (AC) levels. One variety of persuasion test used by some research organizations include double exposure of ads during the programme. Some organizations conduct an additional interview about 72 hours to find out recall. Some use a control location for conducting the test, while some of them use shopping complexes, big departmental stores or super bazaars as the venue for conducting the test.

The *Mapes & Ross Company* does not use the theatre-testing method. It broadcasts the ads in a pre selected prime time position. Respondents are contacted over phone (200 in number) and invited to participate in a survey. The respondents provide unaided brand name awareness and are questioned about their brand preferences for a number of brand categories. The next day (ie. after 24 hours of watching the ads), the respondents again answer questions regarding brand recall and brand preference.

Persuasion tests work on the fact that an important function of advertising is to change (if necessary), build and maintain a distinct and positive image for the advertised brand, or company. This image is a composite mix of attitudes, feelings and perceptions so it is important to measure if advertising exposure brings about changes in the attitudes, feelings and perceptions through persuasion tests.

While most persuasion tests try to find out attitude shifts about specific brands, *Terence Shimp*'s research method concentrates on studying respondents' attitude to specific

advertisements. This kind of test is conducted for ads using the 'affective strategy', which try to not to influence consumers' beliefs towards the advertised brand but to create favourable attitudes towards the advertisement itself. Such ads usually try to create a positive feeling and work on the principle that if the consumers like the ad, they will like the brand.

The biggest advantage of persuasion test is that it tries to measure attitudes, which are much closer to purchase behaviour than simple recognition or recall. But critics of this method say that like recognition and recall, mere persuasion may not directly lead to purchase.

PURCHASE BEHAVIOUR TEST:

Here researchers test the actual brand-choice in an in-store, real world setting to ascertain if advertising exposure has resulted in any changes in purchase behaviour. Instead of asking questions to respondents about recall, recognition or persuasion, such studies try to find out their actual behaviour, i.e. if they are buying the brand after being exposed to the ads.

The problem with this method is that proper sampling cannot be done. Also purchase behaviour is influenced by many factors and advertising is just one of these factors. Isolating the effects of advertising from all other influences in quantitative terms is very difficult.

This problem is solved to some extent by using control groups - where only one group is exposed to the ads and the other similar and comparable group is not exposed to the ads being tested. Then changes in purchase behaviour of both the groups are measured. If the difference between the exposed and the unexposed group is significant, then advertising is considered to be effective.

Another alternative is to use small test markets to find out the effect of advertising on purchase behaviour.

OTHER METHODS OF MEASURING AD EFFECTIVENESS:

In addition to the recognition test, recall test, persuasion test and purchase behaviour test, many other methods of measuring advertising effectiveness are being practiced. These include: Direct-Response counts or Inquiry tests, Communication tests, Focus groups etc.

DIRECT RESPONSE COUNTS:

Here the response of the consumers is measured through a feedback system. Here advertisements request for direct response through different means. These include *a toll free number, a coupon or an offer made in the ad* (print ad or TV commercial). Such ads include an address, a phone number, or / and the e-mail address or web site. And instead of finding out the

recall or persuasion, the advertiser counts the number of readers or viewers who request for more information or who actually buy the brand. This test sometimes is called the inquiry test, but it is not completely accurate as this method counts even the actual sale.

One variation of this is a split-ad run, where two different versions of the same ad are published in alternate copies of same issues of newspapers or magazines. These ads have different numbers and addresses. From the responses to the different versions of the ad, their effectiveness can be measured.

COMMUNICATION TESTS:

This test is for those advertisers who don't believe in the methods discussed earlier. Communication test involves three questions:

- Did the ad deliver the message it was intended to deliver?
- Did the ad deliver any messages it was not intended to deliver?
- How did the representatives of the target audience (respondents) react to the message, the characters, the situation, and the tone?

Answers to these questions are not definitive measures of advertising effectiveness, still these questions are very important. Slowly more and more advertisers have started adopting this method to measure advertising effectiveness.

FOCUS GROUPS:

Here very small (5 to 7 persons) groups are interviewed in depth in an informal manner about specific advertisements. The views of the group members are analyzed to measure the possible effects of the ads. Focus group studies are highly unreliable as different groups or even individuals of one group may have different opinions. Such studies are often used for saving both time and money. But for final evaluation of ads, focus group results are not reliable and thus are not widely used.

In the end, it can be said that, while measuring effectiveness of advertisements is a high priority area for advertisers, no full-proof method has so far been devised. Tests that are fast and affordable have obvious defects. The safer methods are time consuming, highly expensive and cannot be undertaken on a regular basis. Another big problem is the staunch opposition by the 'creative people' in ad agencies towards such evaluative research.

However, while taking complex and hard decisions, evaluative research findings can provide effective guidance. Of course, the advertiser has to use these research findings rationally depending upon the situation. Then leave it to the ultimate judges - the

customers. Because, an advertisement is not what the advertisers and ad agencies put into it, but is what the consumers think of it and how they act on it.

8.3 SUMMARY:

- The vast amounts spent on advertising necessitate systematic and objective inquiry into the role of advertising, its effectiveness and its overall contribution. This systematic and objective inquiry is called advertising research. It is also called *evaluative research*, *advertising evaluation*, or advertising *effectiveness research*. Whatever name it is given, advertising research helps avoid costly mistakes. It helps to predict the relative strengths of alternative strategies and to increase the efficiency of advertising in general.
- Measuring advertising effectiveness in quantitative terms is very difficult. The simplest reason being the workings of human brains cannot be quantified. Also advertising is neither the sole means of promotion, nor is it the only sole source of information and influence.
- Evaluative research before the ads are placed in the media or *pre-testing* can assist in the development of more effective advertisements. The most important thing here is that mistakes or shortcomings can be found out and improved upon before media costs have been incurred. However, the limitations of pre-testing include the lack of real or actual conditions as such tests are conducted under simulated situations and with a limited representative audience.
- Evaluative research conducted when the ads are placed in the media, concurrent testing, and evaluating ads after the campaign is over, post-testing, are conducted in real situations and actual conditions. Both concurrent testing and post-testing are more expensive in terms of money and time spent than pre-testing. Also many advertisers prefer post-testing only.
- **Major methods of pre-testing include: Consumer Jury, Storyboard Tests, Laboratory Tests (Tachistoscope, Pyschogalvanometer, Eye camera, Pupil Dilation), and Attitude Tests (Projective Techniques and Depth Interviewing).**
- **Attitudes are viewpoints or opinions that are characterized by a predisposition or state of readiness to act or react in a particular way to certain stimulus. Here ads are the stimuli. Attitude testing tries to measure the degree and extent of these attitudinal changes as created by advertisements.**
- Projective techniques are used to overcome the barriers of rationality, logicality and politeness, which often play an important role in case of direct questioning. In case of projective techniques, an indirect approach is adopted. Instead of asking questions, the respondents are subjected to different tests. These include the association test, sentence completion test, and thematic appreciation test (TAT).
- Different types of tests are conducted as part of post-testing advertisements. These include: Recognition Tests, Recall Tests, Persuasion Tests, and Purchase Behaviour Tests or Sales Tests.

8.4 KEY WORDS:

Advertising Research: The systematic and objective inquiry about the role of advertising and its effectiveness is called advertising research. It is also called *evaluative research*, *advertising evaluation*, or advertising *effectiveness research*. Measurement of advertising effectiveness helps maximize the contribution of advertising.

Advertising Pre-testing: It is a kind of insurance against bad mistakes. It finds out the appropriateness of the ads and their individual components like headline, visuals, body copy and layout, etc., before the ads are released in the media. This type of research attempts to predict the performance of specific ads in terms of liking, motivation etc. of audience members. Through pre-testing advertisers try to finalize the best possible options that are likely to produce better results than others.

Pre-testing Methods: **Major methods of pre-testing include: Consumer Jury, Storyboard Tests, Laboratory Tests (Tachistoscope, Pyschogalvanometer, Eye camera, Pupil Dilation), and Attitude Tests (Projective Techniques and Depth Interviewing).**

Consumer Jury: Here a representative cross section of the target audience is selected as jury members to judge the advertisements being tested. These persons are most likely to be exposed to the final ads. Respondents in a consumer jury test are asked to evaluate one or more ads by some special criteria as attention getting power, believability of claims etc. They are asked to rank the ads in the order of merit. To create real and life-like situations, print ads are inserted in magazines or TV ads are shown with some recorded programme.

Storyboard Tests: Such tests are used for TV ads. Before TV ads are shot, storyboards (series of important shots drawn in the comic strip fashion) are created. These storyboards are transferred on to filmstrips and the audio part is recorded. The selected audience is shown the synchronized version of the filmstrips and audiotape in the slide and sound format. These way television ads can be evaluated even before they are prepared.

The Tachistoscope: This is basically a slide projector, which can be operated under varying conditions of speed and illumination. This device helps find out how fast or slow the respondents perceive and respond to the advertising message.

The Psycho Galvanometer: This device is used to measure the bodily responses while the respondent is watching an ad. This highly complex device uses electrodes that are attached to the respondent's body to measure the electrical resistance (which is the manifestation of the response).

Eye camera: This is one of the most widely used devices. It measures the actual viewing behaviour of the respondents. This camera is fitted with high power lenses and is focused on

the eyes of the respondents. It records continuously the activities of the eye as it moves horizontally and vertically while the respondent is watching pictures on a screen.

Pupil Dilation: This method measures the changes in the size of the pupil of the eye as the respondent watches or sees an ad. Larger or expanded pupil means stronger interest and smaller or constricted pupil means lower interest.

Attitude Testing: Attitudes are viewpoints or opinions that are characterized by a predisposition or state of readiness to act or react in a particular way to certain stimulus. Here ads are the stimuli. Attitude testing tries to measure the degree and extent of these attitudinal changes as created by advertisements.

Projective techniques: These techniques are used to overcome the barriers of rationality, logicality and politeness, which often play an important role in case of direct questioning. In case of projective techniques, an indirect approach is adopted. Instead of asking questions, the respondents are subjected to different tests. These include the association test, sentence completion test, and thematic appreciation test (TAT).

Depth Interviewing: Here the respondent is first put at ease by the researcher while he tries to build up a rapport with the respondents. Then the respondent is asked leading or probing questions to bring out his underlying subconscious reaction to the brand or organization advertised.

Post-testing Methods: Different types of tests are conducted as part of post-testing advertisements. These include: Recognition Tests, Recall Tests, Persuasion Tests, and Purchase Behaviour Tests or Sales Tests.

8.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. Write a detailed note on advertising research.
2. Discuss the various methods used for advertising pre-testing in detail.
3. Write a detailed note on the various methods used for advertising post-testing.

8.6 REFERENCES / SUGGESTED READINGS:

- **Introduction to Communication Research** by *John C. Reinard*.
- **Mass Media IV** by *Ray Eldon Hiebert et al*
- **Mass Media Research** by *Roger D. Wimmer & Joseph R. Dominick*
- **Doing Media Research - An Introduction** by *Susanna Houring Priest*
- **Introduction to Communication Research** by *Reinard* (Benchmark, 1994)
- **Practical Marketing Research** by *Jeffery L Pope* (Amacom, 1993)
- **Introduction to Survey Research** by *Alreck & Settle* (Irwin, 1995)
- **Communication Research: Strategies and Sources (2nd ed)** by *Rubin, R.B., Rubin, A.M. and Piele, L.J. Belmont, CA,* (Wadsworth)

STATISTICAL METHODS IN MEDIA RESEARCH

Writer: Dr. Ved Paul

Reader, Department of Business Economics, GJUST, Hisar, Haryana.

Vetter: Prof. B. K. Kuthiala

Chairperson, Department of Mass Communication, KU, Kurukshetra, Haryana.

LESSON STRUCTURE:

This lesson shall provide an introduction to the statistical methods used in media research. We shall start with summary measures. Finally, we shall try to understand the *Chi-Square Test as a Statistical Tool.* The lesson structure shall be as follows:

9.0 OBJECTIVES:

The objectives of this lesson are as follows:

- To Know About *Summary Measures as Statistical Tools*
- To Know About *Chi-Square Test as a Statistical Tool*

9.1 INTRODUCTION:

Media Research generates large amount of data. Meaningful information is to be drawn from this data. Statistical methods help us in this process. First we shall discuss about some summary measures used in research. The objective of this part is to make students familiar with statistical methods of summarizing the data. With the help of summary measures we may put the data into a single number to depict its characteristics. The second part of this lesson includes chi-square test. This test is used to test the hypothesis regarding the characteristics of the population, which is divided into different categories on the basis of some attributes.

These methods will also help to interpret the data in journalistic reporting.

9.2 PRESENTATION OF CONTENT:

The content of this lesson shall be presented as follows:

- *Summary Measures as Statistical Tools*
- *Chi-Square Test as a Statistical Tool*

9.2.1 STATISTICAL METHODS (SUMMARY MEASURES):

Quantitative data show certain general characteristics, which can be briefly put together as follows:

- They show a tendency to concentrate at certain values, usually somewhere in the centre of the distribution. Measures of this tendency are called measures of central tendency or averages.
- The data vary about a measure of central tendency. This refers to the variability characteristics of the data, often called dispersion. A measure of variability is concerned with quantifying the magnitude of spreadness of individual observations around the central value.
- The data in a frequency distribution may fall into symmetrical or asymmetrical patterns. The measures of this direction and degree of asymmetry are called measures of skewness.
- Polygons in frequency distribution exhibit peakedness. Measures of peakedness are called measures or kurtosis.

The purpose of these measures is to discover the characteristics of a set of data and hence to facilitate comparison within a set of data or between sets of data. In this part we shall discuss the measures of first two of the above-mentioned characteristics.

MEASURES OF CENTRAL TENDENCY/ AVERAGES:

The most important characteristics of a set of data is its measure of central tendency. For example we may have data about the reading hours of the newspaper of different persons in a certain city. Instead of dealing with reading hours data of individual a researcher may be interested in ascertaining the average reading hours of the person in the city. Similarly in order to ascertain the degree of power shortage the administrator in-charge of power will be interest to know the average daily power demand and average daily power generation in a state.

What is the meaning of this term average? Generally speaking, when we talk about average hours, or average power shortage, we are really looking for a central figure amongst a number of observations, which is representative of the entire group. Similarly when we say he is

an average student what it means is that he is typical of the group of which he is a part. Thus, an average is a single value, which is used to represent an entire set of data. This value permits us to compare individual values in the data with it and also permits us to compare different sets of data. The three principal measures of central tendency widely used in statistical analysis are the arithmetic mean, median and mode.

ARITHMETIC MEAN:

The arithmetic mean, which is sometimes simply referred to as "mean" is the most commonly used average. It is sum of the values observed divided by the total number of observation of the data set.

Suppose x1, x2, ……, xn are the n observations contained in the sample.

Their Arithmetic mean is

$$X = \frac{x1 + x2 \ldots\ldots\ldots\ldots..xn}{n} = \sum_{i=1}^{n} n/n$$

n = total number of observations

Here X = Arithmetic mean. $\sum_{i=1}^{n} Xi$ = Sum of all the values of the variable xi.e.x1' x2,

…….., xn

In computing arithmetic mean with the help of this formula, we have two steps:

(i) the observation of the data and Take the sum of all obtain ∑Sx

(ii) Divide this total by the total number of observation i.e.n.

Example : Find the arithmetic mean of hours of reading the newspaper per day of five persons.

Person	1	2	3	4	5
Nos. of Hours	5	.75	1.0	1.2.	.90

Solution

X (Nos. of Hours)	.5	.75	1.0	1.20	.90

$$\text{Arithmetic mean } (X) = \sum_{i=1}^{n} xi$$

$\sum xi = .5 + .75 + 1.0 + 1.2 + .9 = 4.35$

$n = 5$

$$X = \frac{4.35}{5} = .87 \text{ hours}$$

Hence the average hours per person is .87 hours.

If the data is given in the form of frequency distribution, the mean x is computed as :

$$X = \frac{f1\,x1 + f2\,x2 + \ldots\ldots\ldots\ldots\ldots\ldots + fk\,xk}{f1 + f2 + \ldots\ldots\ldots\ldots fk} = \frac{\sum_{i=1}^{k} fi\,xi}{\sum_{i=1}^{k} fi\,xi}$$

Here $fi, f2, \ldots\ldots\ldots\ldots\ldots fk$ are the corresponding frequencies of the values of x

Example: Find the arithmetic mean of the following data.

Monthly Expenditure on Newspaper (Rupees)	20	30	50	60	70	100	150
Nos. of persons (f)	10	16	20	30	22	12	7

Sol :

Values of X =	20	30	50	60	70	100	150
Frequencies =	10	16	20	30	22	12	7
fx =	200	480	1000	1800	1540	1200	1050

$$X, = \frac{\sum fx}{\sum f} = \frac{7270}{117} = \text{Rs. } 62.13$$

Thus, the average monthly expenditure of given persons on newspaper is Rs.62.13

THE ARITHMETIC MEAN OF GROUPED DATA:

If a frequency distribution of the data is given in the forms of classes we no longer have the original values of the observations. Let us have the following data on the income of 100 workers.

Income (Rs.)	Frequency	(f) m	mf
20-40	6	30	180
40-60	9	50	450
60-80	11	70	770
80-100	14	90	1260
100-120	20	110	2200
120-140	15	130	1950
140-160	10	150	1500
160-180	8	170	1360
180-200	7	190	1330

In this data, the actual values of the observations are not given to us.

Take the case of first class, it shows there are 6 workers whose incomes lies between Rs.20 to Rs.40. Her actual income of these workers is unknown to us. Therefore to find the arithmetic mean of this type of data, we have to deal with the representatives of each class. Within each class, each item is assumed to have the value of the mid point of that class. The mid point in each class has to be taken for each item in the class it represents. The mid points computed from each class of the above data are shown by 'm'. To compute the arithmetic mean of the data, now multiply the values of 'm' with corresponding frequencies and then take the total of these products. Just as in the ungrouped data, we divide this total by the total number of observations in the distribution to obtain the arithmetic mean. The method for computing Arithmetic Mean is:

$$X, = \frac{\sum fm}{\sum f} = \frac{11000}{100} = \text{Rs.}110$$

So average income of the workers is Rs.110/-

In case of short-out method for computing arithmetic mean we use the following formula:

$$X = Xd + \frac{\sum fd}{\sum f}$$

Here Xd = assumed mean

d= deviations of mid points from the assumed mean i.e. – Xd

If the class intervals are not uniform, the short method for computing the mean cannot be used.

MEDIAN:

The median of a collection observations is defined as the middle most observation in the sense that one half of the number of observations is less than median while the other half of observation is larger than the median. To determine the median, it is necessary to first array the observation either in a descending or ascending order of magnitude and then count their number. If the number of observation is odd, media is equal to (n+1)/2 the observation. If the number is even, median is arithmetic mean of n/2 and n/2+1 the observations.

For example, the median of a series consisting five observations (5,8,10,11,14) is 10, 3rd, observation i.e. (5+1)/2 the observation. Had 16 been the sixth observations in the series, the median would be (10+11)/2=10.5 i.e. arithmetic mean of – 6/2th and (6/2)+1 th observations.

Median is also called positional average. The term position refers to the place of a value in a series. Media is considered as a comparison of arithmetic mean when data consist extreme values. For example if a data consist the following observations.

10, 12, 14, 16, 100.

The median of this series is 3rd observation i.e. 14. Now compute the arithmetic of this series, which is equal to 30.4. It shows, arithmetic mean is not representative of this series. The median M=14, on the other hand is a representative measure of the observations.

When the data is given in the form of frequency distribution, to find the median we use the following procedure:

- Put the data in ascending or descending order of magnitude.
- Compute the cumulative frequencies i.e. take the summation of successive frequencies corresponding to given values of the variable.
- Locate the median which is (n+1)/2
- From the column of cumulative frequency find that which is equal to (N+1)/2 or next higher to that and determine the value of the variable corresponding to it. That will be the value of median.

Sample: Compute the median by using the following data on the wages of the workers:

Wages (Rs.)	20	21	22	23	24	25	26	27	28
No. of Workers	8	10	11	16	20	25	15	9	6

Solution: First put the values of the variable into ascending order

Wages(Rs.)	Nos. of workers (f)	Cumulative frequencies (cf)
20	8	8
21	10	18
22	11	29
23	16	45
24	20	65
25	25	90
26	15	105
27	9	114
28	6	120

Median $\frac{N+1}{2}$ the Observation = $\frac{120+1}{2}$ = 60.5 th observation

This value lies in the cumulative frequency whose value is 65. Corresponding to this cumulative frequency the value of our variable is 24.

Thus Median = 24/-

THE MEDIAN FOR GROUPED DATA:

In grouped data, the individual observations have lost their identity, and the middle observation cannot be found by counting. It is necessary to get inside a class to find the value that divides the number of all observation in half. If we divide the number of frequencies (N) in two halves, we find that the middle observation falls within a class. To locate this class, we cumulate frequency until we reach the lowest class whose cumulative frequency is greater than N/2, This class is called the median class. After that, we find the median value from the median class. The method for this procedure is

$$\text{Median} = l + \frac{\frac{N}{2} \sum f_i}{f_{med}} x_i$$

Where e = the lower limit of median class

N = the total frequency.

S fi = the sum of all frequencies accumulated before entering the median class.

f med = the frequencies of the median class, and

i = the width of the median class.

Example: Find out the median of the following data.

Marls	0-4	4-8	8-12	12-14	14-18	18-20	20-25	25-above
Nos.	10	12	18	7	5	8	4	6

Solution: First put the data in ascending or descending out and then find the median.

Marks	No. of student (f)	Cumulative frequency (c.f)
0-4	10	10
4-8	12	22
8-12	18	40
12-14	7	47
14-18	5	52
18-20	8	60
20-25	4	64
25-above	6	70

Median = size of N/2th item = 70/2 = 35 th observation.

Median lies in the class 8-12

= 10.88

so Median is 10.88 marks.

$$\text{Median} = 1 + \frac{\sum f\text{i}}{f\text{med}} \times \text{i}$$

$$8 + \frac{35 - 22}{18} \times 4$$

MODE:

There are many situations in which arithmetic mean and median fail to reveal the true characteristics of data. When we talk of average consumer average student, average size of shoes or ready-made garments we have in mind mode and not the arithmetic mean or median.

Here average student means the type of student who is met most frequently with regard to some quality. In statistics the value of variable, which occurs most frequently, is called mode.

THE MODE FOR UNGROUPED DATA:

Mode practically does not require any calculation in case of ungrouped data. All we have to do is to find the value that occurs most frequently. For example in a set of observation consisting of the values 9, 10, 11,11, 11, 15 modes is 11 because it occurs twice as compared to other values, which occur only once. Arranging the observations in an array and counting the number of times each observation occurs can conveniently find out the mode. If the data is given in the form of frequency distribution, mode can be determined just by looking to that value of the variable, which has corresponding highest frequency.

Example: Compute the mode of the following data

Shoes size	6	7	8	9	10
Nos. of persons (frequency)	4	17	22	5	2

Solution:

In this case the value 8 has occurred the maximum number of times i.e. 22.

Thus the mode is 8, which is most common size of shoes.

THE MODE OF GROUPED DATA:

To compute the mode of the grouped data we have to pass through he following steps:

- Find the class with most frequencies in the premodal class from of the number of frequencies in the modal class.
- Subtract the number of frequencies in the premodal class from of the number of frequencies in the modal class. The results is denoted by
- Subtract the number of frequencies in the post modal class from the number of frequencies in the modal class. This is denoted by
- Divide ?1 by sum of ?1 and ?2 and multiply the quotient obtained by the size of the class interval of the modal class.
- Add the result obtained by performing the operation in step (iv) above to the lower limit of the modal class. This sum is the mode.

The method for this procedure is:

?1

Mode = 11 + Xi ?1

?1 ?2

?2

Where l1= lower limit of the modal class.

= The difference between the frequencies in the modal class and pre-modal class.

= The difference between the frequencies in the modal class and the post modal class and

i = the size of the class internal of the modal class.

Example: Calculate the mode of the distribution given below:

Monthly Wages in Rs.	50-70	70-90	90-110	110-130	130-150	150-170
No. of workers	4	44	38	28	6	8

Solution:

Wages	Workers(f)
50-90	4
70-90	44
90-110	38
110-130	28
130-150	6
150-170	8

Maximum frequency is 44, corresponding to this, (70-90) is modal class:

?1 44-4 40

Mode = l1 + xi = 70 + x 20 = 70 + 20 = 87

?1 ?2 44-4 + 44-38 46

Hence mode is Rs.87.4.

MEASUREMENT OF VARIABILITY:

The average is a representative of the collection of observation in the sense that it enables us to identify the centre. But it does not reveal how the individual observations are spread out on each side of the centre. The knowledge of variability of the individual observation around the average is very important for testing the reliability of average. For example, suppose the average per

capita income of a country is very high. On the basis of this it may be concluded that living standard of its people is very high. If there is strong variability in the incomes of the people and income of the country is concentrated in the hands of few people, in this case our conclusion based on average income may be wrong. Average is hardly fully representative of a collection of observation unless we know the manner in which the individual observations scatter around it in short a further description of the data is necessary if we want to know how representative the average is. The measurement of the magnitude of scatterness of the individual observations about the average is called a measure of variation or dispersion; it is this measure that tells us how representative the average is as a description of the data. If the observations scatter in a very narrow range, then average would appear to be highly representative.

There are five measures of dispersion – named the range, quartile deviation, mean absolute deviation, variance and standard deviation. In this part we shall take standard deviation only, which is one of the most appropriate measure of dispersion.

STANDARD DEVIATION:

To compute the standard deviation of the ungrouped data, first find the deviation of each observation of the data from the arithmetic mean of the data. After that the square these deviation these deviation and obtain the sum of them. In next step, divide the sum of square of deviation by the total number of observation and then take the under root of it, to get the standard deviation. We denote the population standard deviation by Greek letter a (sigma), while in case of sample it is denoted by 's'.

The formula of above procedure is:

$$s = \frac{\sum (xi - x)}{N} = \frac{(xi - x) + (x2 - x) + - + (Xn - x)}{N}$$

Where $\sum (xi - x)$ = Sum of square of the values of x from its mean.

N = total number of observation.

2.1.1 The Standard Deviation of Ungrouped Data:

Suppose the data consist of the observation

3, 10, 9, 9, 4, 7, 14 then standard deviation is computed as:

Mean = $x = \frac{3+4+7+9+9+10+14}{7} = 8$

$$s = \frac{(3-8)2 + (10-8)2 + (9-8)2 + (4-8)2 + (7-8)2 + (14-8)2}{7}$$

$$s = \frac{25 + 4\ 1 + 1 + 1\ 6 + 1\ 36}{7} = 3.46$$

If the data is given in the form of frequency distribution then following steps are taken to compute the standard deviation.

i. Take the deviation of each observation from the mean and then square it.

ii. Multiply these deviation by the respective frequencies and obtain the total.

$$\sum f\ (X-X)2$$

iii. Multiply these deviation by the respective frequencies and obtain the total. The above procedure could be summarized in the following formula :

$$s = \frac{\sum f\ (X) - X\ 2}{\sum f}$$

THE STANDARD DEVIATION OF THE GROUPED DATA:

In case of grouped data to find the standard deviation, we adopt the following the procedure:

i. Find the mid points of each class.

ii. Take the deviation of these mid points from the arithmetic mean of the data.

iii. Square the deviations and multiply them with the respective frequencies of each class and obtain the sum.

iv. Divide the total of above (iii) step by total number of observations and take the under root of it to get. The formula of above procedure is

$$s = \frac{\sum f(X - X)\ 2}{N}$$

Example: Calculate the standard deviation of the following frequency distribution of marks

Marks	10-14	15-19	20-24	25-29	30-34	35-39
No. of Student	8	10	22	35	15	10

Solution:

Marks	No. of student (f)	Mid point (x)	fx	fx2
10-14	8	12	96	1152
15-19	10	17	170	2890
20-24	22	22	484	10648
25-29	35	27	945	25515
30-34	15	32	489	15360
35-39	10	37	370	13690

$$s = \frac{\sum f(X - X)^2}{N} = \frac{\sum f X^2}{N} - \left(\frac{\sum f X}{N}\right)^2$$

$$s = \frac{69255}{100} - \left(\frac{2545}{100}\right)^2 = 6.69$$

9.2.2 CHI-SQUARE TEST:

Generally in real world we draw inference about population on the basis of sample. But sample is a part of the population, so drawing inference about the population on the basis of this partial information, may be right of wrong. Thus to know the reliability of inference drawn on the basis of sample we take the help of some statistical tools called statistical tests. With the help of these tests, we test whether the sample information is consistent with the characteristics of the population for with any hypothesis about the population characteristics. it is no consistent with our hypothesis about population, then we reject the hypothesis otherwise accept it.

For example we use t-test and z-test for testing whether sample mean is close to any hypothesis about population mean. Rejection of hypothesis means results are significant i.e. our sample is providing us significant information, which is deviation from our perception about the population. On other hand accepting of hypothesis means our results are insignificant.

Chi-square test is used for testing the hypothesis regarding characteristics for the population when the population is divided in to different categories on the basis of some attributes. For example we can divide the population into different categories on the basis of attributes like sex, education, employment, occupation etc. The principal use of chi-square is to know whether there is any interdependence in the two attributes of population or not. For instance, we may be interest in knowing the interdependence between sex and education, or opinions of the people and their occupations, etc.

*Here hypothesis means null hypothesis.

TESTING PROCEDURE:

For testing the hypothesis with the help of chi-n square statistic we need a set of expected frequencies corresponding to our observed frequencies. For examples, in tossing a coin 50 times, head appeared 20 times and tail appeared 30 times, here 20 and 30 are our observed frequencies. If we expect that coin is unbiased i.e. there is no interdependence between head and tail then we that coin is unbiased i.e., there is no interdependence between head and tail then we expect that in tossing the coin 50 times, head and tail must appeared with equal frequencies i.e. 25, these are our expected frequencies.

The measure of chi-square enables us to find out the degree of discrepancy between observed frequencies and expected frequencies and thus to determine whether the discrepancy so obtained is due to chance factor or due to inherent difference. let our population has ‘n’ categories and each categories, in a sample of particular size has O1 O2 – O2 observed frequencies respectively, if corresponding to these observed frequencies we have expected frequencies e1 e2 ----------en, then chi-square (x2) statistics is:

$$X2 = \frac{(oi - ei)2}{e1} + \frac{(o2 - e2)2}{e2} + - + \frac{(on - en)2}{en}$$

$$X2 = \sum_{i=l} \frac{(oi - ei)2}{ei}$$

The whole process of testing of hypothesis by using x2 –test has following steps.

- Indicate the hypothesis. In statistics we make two types of hypothesis. One is null hypothesis and second is alternative hypothesis. Rejection of one hypothesis leads to acceptance of other hypothesis and vice-versa.
- List the observed frequencies resulting from a given sample survey.
- Calculate the expected frequencies. We calculate these frequencies by assuming that null hypotheses are true.
- Calculate the difference between the observed frequency and the corresponding expected frequency for each class in the series. we express the square of the difference as a fraction of the expected frequency concerned.
- Add together all fractions obtained from step (4)
- Add result of our x2 – test is significant if the figure obtained from step (5) exceed the appropriate critical value of x2 for the given degree of freedom at a certain level of significance. Which means that in such a case null hypothesis is rejected, otherwise it is accepted.

Illustration: For the purpose of illustration, let us consider the following problem. Suppose a survey is conducted to ascertain the popularity of a film in different age group. A sample 450 people is taken consisting of 250 young, 130 middle aged and 80 old aged. Each person is asked to give one's view whether they like, dislike or indifferent to the film. Further suppose that the observations of the survey are given in the following table, which is also called contingency table.

Contingency Table -1

Age Group	Reaction to the film			
	Like	Dislike	Indifferent	total
Young	150	60	40	250
Middle Age	54	52	14	120
Old	28	27	25	80
Total	232	139	79	450

In this table actual frequencies of difference categories are given to us like in case of young categories out of 250, 150 like the film. Now we want to test whether there is any relationship

between age group and different types of reaction of the people regarding the film. For testing it we follow the under given steps.

First make the hypothesis about the interdependence of these classes of the data

Null Hypothesis: there is null relationship between age group and reaction of the people.

Alternative Hypothesis: there is a relationship between these two attributes.

Decision criteria: In statistics generally we take level of significance equal to 5% or 1%.

Suppose in our case it is 5% i.e. a = 0.05.

Now we have to compute the value of x2 statistics. For this we have to calculate the expected frequencies corresponding to observed frequencies given in the above table. Suppose we want to find the expected frequency corresponding to young and like cell i.e. 150, for this wen use the following methods.

$$e1 = \frac{RT \times CT}{N} = \frac{250 \times 232}{450}$$

Where e1 = expected frequency.

RT = the row total for the row containing the cell

CT = the column total for the column containing the cell.

N = the total number of observations.

Similarly, by using above method we can compute the expected frequency of the other cells of the contingency table.

CONTINGENCY TABLE –II

Reaction to film

Age Group	Like	Dislike	Indifferent	Total
Young	1580(128.8)	60(77.22)	40(43.88)	250
Middle age	54(61.86)	52(34.39)	14(21.06)	120
Old	28(41.71)	27(24.71)	25(14.04)	80
Total	232	139	79	450

In this contingency table corresponding to each observed frequency, expected frequencies are

given in brackets. Now by using these values we can compute the value of x2 statistics

$$x2 = \frac{(150-128.8)^2}{128.8} + \frac{(60-77.22)^2}{77.22} + \frac{(40-43.88)^2}{43.88} + \frac{(54-61.86)^2}{61.86}$$

$$+ \frac{(52-34.39)^2}{128.8} + \frac{(14-21.06)^2}{77.22} + \frac{(28-41.24)^2}{43.88} + \frac{(27-24.71)^2}{61.86} + \frac{(25-14.0)^2}{14.04}$$

$$x2 = 3.84+3.84+.343+998+9.017+2.36+4.25+.212+8.55 = 33.05$$

This is our computed value of x2 Now compare this value with table value of x2 corresponding to degree of freedom (3-1) (3-1) = 4, at

Level of significance x = 5% = 0.05

Table value of x2 is 9.49

x2 > x2 (=049)

So reject the null hypothesis. It means our results are significant and there is interdependence between age group and people liking about a film.

Degree of freedom = (number of rows-1) (number of columns-1).

9.3 SUMMARY:

- They show a tendency to concentrate at certain values, usually somewhere in the centre of the distribution. Measures of this tendency are called measures of central tendency or averages.
- The data vary about a measure of central tendency. This refers to the variability characteristics of the data, often called dispersion. A measure of variability is concerned with quantifying the magnitude of spreadness of individual observations around the central value.
- The median of a collection observations is defined as the middle most observation in the sense that one half of the number of observations is less than median while the other half of observation is larger than the median. To determine the median, it is necessary to first array the observation either in a descending or ascending order of magnitude and then

count their number.

- There are many situations in which arithmetic mean and median fail to reveal the true characteristics of data. When we talk of average consumer average student, average size of shoes or ready-made garments we have in mind mode and not the arithmetic mean or median.
- We use t-test and z-test for testing whether sample mean is close to any hypothesis about population mean. Rejection of hypothesis means results are significant i.e. our sample is providing us significant information, which is deviation from our perception about the population. On other hand accepting of hypothesis means our results are insignificant.
- Chi-square test is used for testing the hypothesis regarding characteristics for the population when the population is divided in to different categories on the basis of some attributes. For example we can divide the population into different categories on the basis of attributes like sex, education, employment, occupation etc. The principal use of chi-square is to know whether there is any interdependence in the two attributes of population or not. For instance, we may be interest in knowing the interdependence between sex and education, or opinions of the people and their occupations, etc.

9.4 KEY WORDS:

Arithmetic Mean: The arithmetic mean, which is sometimes simply referred to as “mean” is the most commonly used average. It is sum of the values observed divided by the total number of observation of the data set.

Median: The median of a collection observations is defined as the middle most observation in the sense that one half of the number of observations is less than median while the other half of observation is larger than the median. To determine the median, it is necessary to first array the observation either in a descending or ascending order of magnitude and then count their number.

Mode: There are many situations in which arithmetic mean and median fail to reveal the true characteristics of data. When we talk of average consumer average student, average size of shoes or ready-made garments we have in mind mode and not the arithmetic mean or median.

Standard Deviation: To compute the standard deviation of the ungrouped data, first find the deviation of each observation of the data from the arithmetic mean of the data. After that the square these deviation these deviation and obtain the sum of them. In next step, divide the sum

of square of deviation by the total number of observation and then take the under root of it, to get the standard deviation. We denote the population standard deviation by Greek letter a (sigma), while in case of sample it is denoted by 's'.

Chi-square Test: This test is used for testing the hypothesis regarding characteristics for the population when the population is divided in to different categories on the basis of some attributes. For example we can divide the population into different categories on the basis of attributes like sex, education, employment, occupation etc. The principal use of chi-square is to know whether there is any interdependence in the two attributes of population or not.

9.5 SELF-ASSESSMENT QUESTIONS (SAQs):

1. Discuss the various statistical methods used in media research.
2. Write a detailed note on the measures of central tendency.
3. Write a detailed note on Chi-Square test. .

9.6 REFERENCES / SUGGESTED READINGS:

- Introduction to Communication Research by *John C. Reinard*.
- Mass Media IV by *Ray Eldon Hiebert et al*
- Mass Media Research by *Roger D. Wimmer & Joseph R. Dominick*
- Doing Media Research - An Introduction by *Susanna Houring Priest*
- Introduction to Communication Research by *John C Reinard* (Benchmark, 1994)
- Practical Marketing Research by *Jefferey L Pope* (Amacom, 1993)
- Introduction to Survey Research by *Pamela L Alreck & Robert B Settle* (Irwin, 1995)
- Communication Research: Strategies and Sources (2nd ed) by *Rubin, R.B., Rubin, A.M. and Piele, L.J. Belmont, CA,* (Wadsworth)