RESEARCH METHODOLOGY

STUDY MATERIAL

SECOND SEMESTER

CORE COURSE : PS2C05

For

M.A.POLITICAL SCIENCE

(2017 ADMISSION ONWARDS)

UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

Calicut University P.O, Malappuram, Kerala, India 673 635

495

UNIVERSITY OF CALICUT
SCHOOL OF DISTANCE EDUCATION

STUDY MATERIAL

SECOND SEMESTER

MA POLITICAL SCIENCE
(2017 ADMISSION ONWARDS)

CORE COURSE :
PS2C05 : RESEARCH METHODOLOGY

Prepared by :

Sri. P. K. Varghese
Associate. Professor and Head
PG Department of Political Science
ST. Mary's College,
Sulthan Bathery

Layout: 'H' Section, SDE

CONTENTS ***PAGE NO.***

MODULE I

RESEARCH METHODOLOGY

Nature & Meaning of Research

In the modern complex world every society today is faced with serious social, economic & political problems. These problems need systematic, intelligent and Practical solutions. Problem solving is technical process. It requires the accumulation of new knowledge. Research provides the means for accumulating knowledge & wisdom. In other words, research is a systematic effort of gathering analysis & interpretation of problems confronted by humanity. It is a thinking process and scientific method of studying a problem and finding solution. It is an in-depth analysis based on reflective thinking.

Definitions

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. Research is an academic activity and the term should be used in a technical sense.

a) -William Emory defines Research as "any organised enquiry designed and carried out to provide information for solving a problem"

b) The new Oxford English Dictionary defines research is "the scientific investigation into and study of material, sources etc in order to establish facts and the reach new conclusions".

c) Redman and Mory defines, research as "a systematised effort to gain new knowledge".

d) "A careful investigation or inquiry specially through search for new facts in any branch of knowledge" Advanced Leaner's Dictionary.

Characteristics of Research

The above definitions reveal the following characteristics of Research

1. Research is a systematic and critical investigation into a phenomenon.
2. It is not mere compilation of facts.
3. It adopts scientific method.
4. It is objective & Logical
5. It is based on empirical evidence.
6. Research is directed towards finding answers to questions
7. It emphasis the generalisation of theories and principles.

Objectives of Research

The objectives of Research can be grouped under the following heads

1. To gain familiarity with a phenomenon or to achieve new insights to it.

2. To portray accurately the characteristics of a particular individual situation or a group.

3. To determine the frequency with which something occurs or with which it is associated with something else.

4. To test a hypothesis or a casual relationship between variables.

Motivations in Research

What makes people to undertake research?

The answer is as follows.

1. Desire to get a research degree along with its benefits.

2. Desire to face the challenge in the solving the unsolved Problem.

3. Desire to get intellectual joy of doing some creative work.

4. Desire to be of service to Society.

5. Desire to get respectability.

Importance of Research

"All progress is born of enquiry. Doubt is often better than overconfidence, for it leads to enquiry & enquiry leads to investigation". Research has an important role in guiding social plan. Knowledge of the society & the cultural behaviour of the people require proper planning for their well development. Because knowledge & cultural behaviour of human being are interdependent. A reliable knowledge is needed for planning & this is possible only through research.

Knowledge is a kind of power with which one can face the implication of a particular Phenomenon.

Research provides the basis for all govt policies in our economic system.

Research help us in making predictions. Eg. Chernobil Nuclear, nuclear plant disastrour, Bhopal gas disastrour.

Research is equally important in seeking answer to various social problems In addition to this, the significance of research can be understood with the following points.

1. To the students who are to write a PHD; it is a careerism.

2. To Professionals in research methodology, research means a source of live hood.

3. To Philosophers & thinkers research may mean the outlet for new ideas and insights.

4. To literary man research means the development of new styles & creative work.

5. To the intellectuals research mean the generalisation of new theories.

Research Method & Research Methodology

It is necessary to explain the differences between research methods & research methodology. Research methods may be understood as all those methods & techniques that are used for conducting research. Research methods, thus refer to the methods the researcher use in performing the research operations. In other words all those methods which are used by the researcher during the course of his research problem are termed as as research methods.

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. Abraham Kaplan defines research methodology in this way. Research methodology is "the description, explanation & Justification of various methods of conducting research".

Research Methodology has many dimensions and research methods do constitute a part of Research Methodology. The scope of Research Methodology is wider than that of research methods. "Thus, when we talk of research methodology we not only talk of the research methods but also considered the logic behind the methods we use in the context of our particular method or technique & why we are not using others. So that research results are capable of being evaluated either by the researcher himself or by others" Why a research study has been undertaken how the research problem has been defined in what way & why the hypothesis has been formulated, what data have been adopted etc ate usually answered when we talk of Research Methodology.

Scientific Method

Research is a scientific endeavor

"The Scientific Method is a systematic step-by-step procedure following the logical process of reasoning". (Clover Vernon.T) Scientific Method is a means for gaining knowledge of the universe. It is an objective logical & Systematic Method of analysis of a phenomenon, devise permit the accumulation of reliable knowledge. It is a systematized form of analysis. It is characterized by intellectual attitude. The Scientific Method is based on certain articles of faith they are;

a) Reliance on evidence

Truth is established on the basis of evident conclusion is admitted only when it is based on evidenence. The answer to a question is not decided by imagination or guess

b) Commitment to Objectivity

Objectivity is the hall mark of Scientific method. Objectivity is the willingness & ability to accept truth with our bias.

c) Ethical Neutrality

Science does not pass normal judgment on facts. It does not say that they are good or bad. Science never imposes anything. Science aims at nothing but making true & adequate statements about the object.

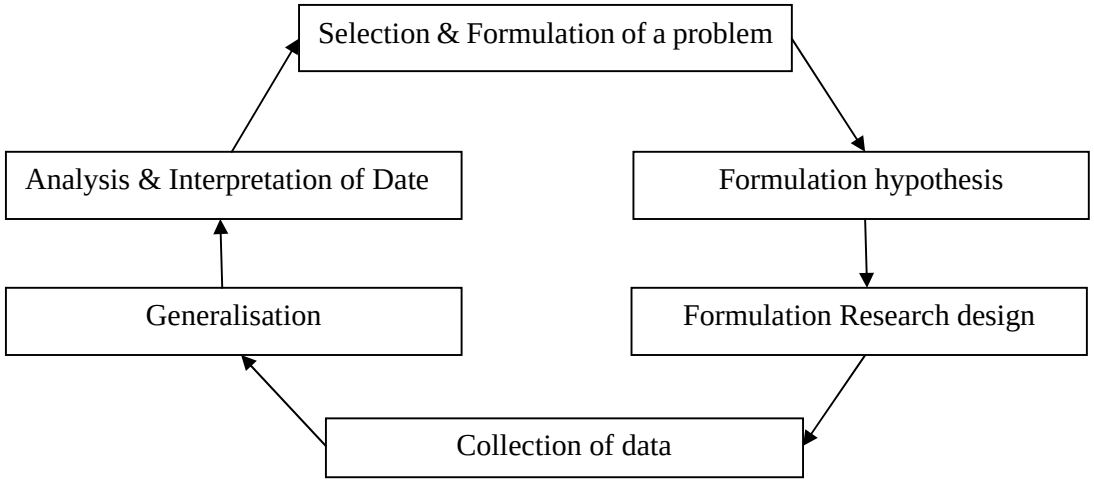
d) Verifiability

The conclusions arrived by a scientist should be verifiable. He must make known to others how he reached at his conclusion. Such verifications help in further research.

f) Logical Reasoning Process

The Scientific Method involves the logical process of reasoning. The reasoning process is used for drawing inference from the finding of a study or for arriving at a conclusion.

The Research Process



The Research Process is the Paradigm of research project. In a research project there are various scientific activities. The research process is a system of Interrelated activities. Usually research begins with the selection of a problem. The various stages in the research process are explained in the above diagram. Research is a cyclical process. If the Data do not support the hypothesis, research is repeated again.

C.R. Kothari in his book, "Research Methodology: Methods & Techniques" presents a brief overview of a research process. He has given the following order concerning the Research Process.

1. Formulation the Research problem
2. Extensive Literature survey
3. Developing the hypothesis
4. Preparing the research design
5. Determining sample design
6. Collection of Data
7. Execution of the Project

8. Analysis of Data
9. Hypothesis testing
10. Generalisation & Interpretation
11. Preparation of the report.

Qualities of Good Research Worker

The success of any Research to a great extent depends on the qualities of the Researcher. The qualities are two fold.

1. General Qualities
2. Specific Qualities

1. **General Qualities**

a) Scientific attitude

The 1st essential quality of a successful research worker is that be must possess a scientific frame of mind. Human beings have certain prejudices but a researcher should not be guided by this. He must develop a spirit of science in his mind.

b) Imagination & insight

The researcher must possess a high degree of imagination. He should be able to go deeper & deeper into the area of social phenomena & visualise the intangible aspects of society.

c) Perseverance

The work of scientific Research requires unlimited patience. He should not get easily discouraged. He may often face serious difficulties. But he must develop courage to face, the difficulties & work patiently.

d) Quick Grasping Power

The Researcher should possess the power to grasp the significance of things quickly.

e) Clarity of thinking

A good Researcher should have clear idea about terminology that he is going to use.

2. Specific Qualities

a) Knowledge of the Subject

The researcher should be an expert in the study of the subject which he is going to research. Hence he should read all texts on the matter & form of clear-cut idea bout the subject under study.

b) Knowledge of the Research Technique

The Research worker should also possess an ultimated knowledge of the techniques he applies in solving the problem.

c) Personal Taste

A Personal taste in the study will inspire him & keep his morale high in times of difficulties.

d) Unbiased Attitude

The Researcher should have no pre conception about the subject under study. He should maintain an open mind.

Factors Which Hinder Research

1. Tradition in the community is a powerful retarding influence
2. Lack of time, energy & resources.
3. Research is considered to the business of a few armchair academicians.

Problems faced by Researchers in India

Researchers in India particularly those engaged in research in Social Science face the following problems.

1. The lack of scientific training in the methodology of research.
2. There is insufficient interaction between the University Research Department and business establishments & govt. departments.
3. In the fear of misuse govt. is not willing to supply basic documents.
4. There does not exist a code of conduct for researchers.
5. Another difficulty is insufficient secretarial assistance
6. Library management is not satisfactory in many places.
7. Lack of time and money

Social Science Research

Sciences are broadly divided into physical sciences & social sciences. Social sciences include various disciplines dealing with human nature, human life, human behaviour, social groups & Social institutions. Example Artropology, Commerce, Economics, Geography, History, Law, Political science, Phychology, Sociology etc. All these branches are separate but are interdependent.

Social Science Research is a systematic method of exploring analysing & conceptualizing human life in order to extent, correct or verify the knowledge of human behaviour & social life.

Social Research, "Seeks to find explanations to unexplained social phenomena, to clarify the doubtful & correct the misconceived facts social life"- Pauline. V. Young.

Objectives of Social Science Research

a) The aim of Social Science Research is to discover new facts or verify and test old facts.
b) It tris to understand the human behaviour & its interaction with the environment & Social institutions.
c) It tris to find out causal connection between human activities and natural laws governing them
d) Another purpose of Social Science Research is to develop new tools and techniques in social science.

Functions of Social Science Research

1. Discovery of facts & their interpretations - Research provides answer to questions of what, where, when & how of man, social life and institutions. There are half truths pseudotruths and superstitions. Discovery of facts enlights us.

2. Diagnosis of problems- The developing countries face so many problems such as poverty unemployment, Social tensions, law productivity etc. Social Science Research helps to discover solution to this problems.

3. Systematization of knowledge- The facts discovered through research are past & parcel of the body of knowledge.

4. Prediction- Social Science Research aims at predicting social events.

5. Planning - Panning is needed for socio-economic development & Social Science Research provides sufficient data for planning.

6. Social Welfare- Social Science Research unfold & identify the causes of social evils & problems.

Good Research

I. James Harold Fox in "criteria of good research" says that scientific research should satisfy the following conditions.

1. The purpose of Research should be clearly defined and common concepts should be used

2. The Research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement, keeping the continuity of what has been attained.

3. The design of the Research should be carefully planned to yield results that are as objective as possible.

4. The Research report should be complete and should be frank and without any flows.

5. Collection and analysis of data should be adequate and the reliability should be checked carefully.

6. Conclusions should be justified by data

7. Researches must be an experienced person with goal reputation.

II.

1. Good Research is systematic

2. Good Research is logical

3. Good Research is empirical

4. Good Research is replicable (Denny N Bellenger and Burnet A Green Berg)

B. HYPOTHESIS

When a researcher observes known facts and takes up a problem for analysis, he first has to start somewhere and this point of starting is Hypothesis. In other words, one has to proceed to formulate tentative solution. This purposed solutions constitute the Hypothesis. The collection of facts (data) will be fruitful if they are either for or against this proposed solution. The tentative explanation or solutions are the very basis for research process.

When to make a Hypothesis?

Hypotheses are not given to us readymade. This is so specially in social sciences. Because there is not a system of highly developed theoretical order in many social sciences. As a result in many social science researchers a considerable portion of research is devoted for hypothesis making. So it should be remembered that research can begin only with a well-formulated Hypothesis.

Definition

1. In the words of George A. Lund Burg " a hypothesis is a tentative generalization the validity of which remains to be tested……In its most elementary stage the hypothesis may be very bunch, guess, imaginative data, which becomes the basis for action or investigation".

2. Goode and Hatt defined it as " a proposition which can be put to test to determined its validity".

3. Rummel " a hypothesis is a statement capable of being tested and there by varified or rejected".

Need (importance) of Hypothesis

In all analytical and experimental studies hypothesis should be set up in order to give a proper direction to them. Hypothesis are useful and the guide Research Process in proper directions. In addition to put in the theory to test, a hypothesis has to performe certain other functions.

In many ways it is a guiding print to research. Young says "Formulation of hypothesis gives definite the point of enquiry aids in establishing direction in which to proceed and help to delimit the field of enquiry".

The use of hypothesis prevents a blind search and indiscriminate gathering of data which may later prove irrelevant to the problem under study.

In the data collection hypothesis serves as the forerunner.

A Researcher based on hypothesis can save a lot of time and keep the researcher from considerable amount of confusion.

Hypothesis is helpful in directing the researcher to find out order among facts.

Hypothesis have also certain practical values to society besides serving as a means for seeking solution to various problems, they help in understanding the social phenomena in the proper perspective.

Sources of Hypothesis

Hypothesis can be derived from various sources.

1. Theory

This is one of the main sources of hypothesis. It gives direction to research by stating what is known. Logical deduction from theory leads to new hypothesis.

2. Observation

Hypothesis can be derived from observation. For example, from observation of price behaviour in a market the relationship b/w price and demand of an article can be hypothesised.

3. Analogies

Analogies are another sources of hypothesis. Julian Hexley has pointed out that causal observation in nature or in the framework of another science may be a fertile source of Hypothesis.

4. Intuition and personal experiences

Intuition and personal experiences may also contribute to the formulation of hypothesis. Personal life and experience of person determine their perception and conception these may, in term direct a person to certain hypothesis more quickly. The story Newton and falling apple, the flash of wisdom to Sree Buddha under Banyan tree Illustrate this accidental process.

5. Findings and Studies

Hypothesis may be developed out of the findings of other studies in order to repeat the test.

6. Culture

Another source of hypothesis is the culture in which the researcher is nurtured For example sociology as an academic discipline originated from western culture Over the past decade a large

part of the hypothesis on American society examine by researchers were connected with violence. Indian society is caste-ridden riddled with inequalities and privileges.

Characteristics of a Good hypothesis

What is a good hypothesis? What are the criteria of for judging it. An acceptable should fulfill certain conditions.

1. Conceptual Clarity

A hypothesis should be conceptually clear. It should consist of clearly defined and understandable concepts

2. Specificity

A hypothesis should be specific and explain the expected relation b/w variables and the conditions under which these relations will hold.

3. Testability

A hypothesis should be testable and should not be a moral judgement. It should be possible to collect empirical evidences to test techniques.

4. Availability of techniques

Hypothesis should be related to available techniques. Otherwise they will not be researchable therefore the research must make sure that methods are available for testing his proposed hypothesis.

5. Consistency

Hypothesis should be logically consistent. The propositions derived should not be contradictory

6. Objectivity

Scientific hypothesis should be free from value judgment. The researcher system of values has n o placing Research.

7. Simplicity

A hypothesis should be as simple as possible. Simplicity demands insight. The more in insight the researcher has into a problem, the simpler will be his hypothesis. Types of Hypothesis

1. Descriptive Hypothesis

These are propositions, they described the characteristics of a variable. The variable may be an object, person, organisation, situation or event. For ex. "The rate of unemployment among arts graduates is higher than that of commerce graduates".

2. Relational Hypothesis

These are propositions which describe the relationship b/w two variables. The relation suggested many be positive or negative for ex. 'Families with higher income spent more for recreation'. 'Upper class people have more children than lower class people'.

3. Causal Hypothesis

Causal Hypothesis states that the existence of, or a change in, one variable causes for leads to an effect on other variable. The 1st variables is called independent variable later the dependent variable.

4. Common Sense Hypothesis

These represent the commonsense ideas. They state the existence of empirical uniformities received through day to day observations.

5. Analytical Hypothesis

These are concerned with the relationship of analytic variables. These hypothesis occurs and the higher level of abstraction.

6. Null Hypothesis

Null means 'Zero' When a hypothesis is stated negatively. It is called Null Hypothesis. The object of this hypothesis is to avoid the personal bias of the investigator. In the matter of collection of data. A null hypothesis is used to collect additional support for the known hypothesis.

7. False Hypothesis

A hypothesis which is bound to be unsatisfactory when verified is called a false hypothesis.

8. Barren Hypothesis

A hypothesis from which no consequences can be deducted is called a Barren Hypothesis. It is a hypothesis which cannot to test. Ex. The child fell ill because a wicked women's eye felt upon it. This is a baseless hypothesis because it cannot be verify.

Testing of Hypothesis

Science does not admit anything as valid knowledge until satisfactory test confirm the validity. A hypothesis should be subjected to regrets test and. Type I and Type II errors should be eliminated.

C. CONCEPTS

Concepts are basic elements of scientific method but by and large all concepts are abstractions and represent only certain aspects of reality. In the words of P.V.Young "Each new class of data, isolated from other classes on the other basis of definite characteristics, is given name, a label in short hand concept. A concept is in reality a definition in short hand of a class or group of facts".

Categories of Concept

Concepts are divided into two categories i.e. Concepts by postulation and concept by intuition. The concepts following in the first category have meaning except from the specific theory; When these concepts are used in two different theories these communicate two different meanings, sometimes even different and opposite from each other on the other hand concept by intuition devotes something which is immediately apprehended. The meaning of these concepts is constant whoever use it. Both the categories of concepts have equal importance and significance in social science research.

Features of Good Concept

a) The concepts should be clear, definite and precise.

b) The concept should be comprehensive and clear in formation and understanding.

c) The concept should avoid multiple meaning and as far as possible should convey exactly what was intended when the concept was coined.

Types of Concepts

a) Concrete concepts:- Symbolize material objects which can be seen, touched and eg. book , table

b) Abstract concepts refer to properties or characteristics of objects. eg. weight, height

Characteristics of concepts

1. Concepts are symbols which we attach to the bundle of meanings we hold.
2. Concepts represent only one part of reality.
3. Different people hold different concepts of the same thing.
4. Concepts also represent various degree of abstraction.

(A concept is thus an abstract symbol representing an object, a property of object, or a certain phenomena.)

Variable

The concrete observable events which represent the abstract concepts or constructs are called variables.

MODULE II

TYPES OF RESEARCH

Research is classified into different forms on the basis of intent & methods.

The following are the different types of research.

1. Descriptive Vs Analytical

Descriptive research includes Surveys or fact-finding enquiries of different kinds. The major purpose of descriptive research description of the state of affairs as it exist at present. The main characteristics of this method is that the researcher has no control over the variables; He can only report what has happened or what is happening.

In Analytical research, on the other hand the researcher has to use facts or information already available & analyse this to make a critical evaluation, of the material.

2. Applied Vs Fundamental

Research can either be applied (or action) research fundamental (or pure) research Applied Research aims at finding a solution for an immediate problem facing a society or an organisation whereas Fundamental Research is mainly concerned with Generalisation and with the formulation of a theory. 'Gathering knowledge for knowledge' is termed pure research. Research studies concerning natural phenomenon, human behaviour etc are examples of Fundamental Research. But Research aims at certain conclusion facing a concrete social problems is an example of applied Research.

3. Qualitative Vs Quantitative

Quantitative Research is based on the measurement of quantity or amount. It is applicable to a phenomenon that is phenomenon relating to or involving quality or kind. Qualitative Research is specially important in the behavioural sciences were the aim is to discover the underlying motives of human behaviour.

4. Conceptual Vs Empirical

Conceptual Research is that related to some abstract ideas for theory. It is generally used by philosophers and thinkers to develop the new concepts or to interpret existing ones.

On the other hand Empirical Researches relie on experiments or observation alone, often without due regard for system of theory. It is data based research coming up with conclusions which are capable of been variable of observation and experiment.

5. One Time Research or Longitudinal Research

In the formal case the research is confined to a single time period, whereas the later case the research is carried on over several time periods.

6. Laboratory Research and Field setting Research

This classification is based on the environment in which research is carried out.

7. Historical Research

Historical Research is that which utilities historical sources like documents remains etc to study events ideas of the past including the philosophy of persons and groups at any remote point of time

SURVEY RESEARCH

Survey is a fact finding study. It is a method of research involving collection of data directly from a population or sample thereof at particular time. It must not be confused with mere clerical routine of gathering and tabulating figures. It requires expert and imaginative planning carefull analysis and rational interpretation of the findings.

Definitions

1. Mark Abraham defines survey as "a social survey is a process by which Quantitative facts are collected about the social aspects of a community composition and activities".

2. Herman N Morse defines It as "a method of analysis on scientific and orderly form for defined purpose of given social situations and activities."

The Characteristics of Survey

1. It is a field study; It is always conducted in a natural setting.

2. It seeks responses directly from the respondents.

3. It can cover a very large population.

4. A survey involves an extensive and intensive study.

5. A survey covers a definite geographical area, city, a district or a state

Steps involved in a Survey

The sequences of the task involved in carried out a survey from the 1st stage of planning to the Final stage of preparing the report is presented below.

a) Selection of problem and its formulation

b) Preparation of the research design.

c) Operationalisation of concepts and construction of measuring indexes and states.

d) Sampling

e) Construction of tools for collection of data and there pre-test.

f) Field work and collection of data

g) Processing of data and tabulation

h) Analysis of data

i) Reporting

Purpose of the Survey

1. The purpose of survey is to provide information's do government or planners or business enterprises.

2. Many enquiries aim to explain phenomenon

3. Surveys may be designed to make comparison of demographic groups.

4. Surveys are useful for making predictions

Types of Survey

1. General or Specific survey

When a survey is conducted for collecting general information about population institution or phenomenon without any particular object or hypothesis it is known as general survey.

Specific survey are conducted for specific problems or for testing the validity of some theory or hypothesis.

2. Regular and Adhoc Survey

Some surveys are regular in nature and must be repeated after regular intervals. Such survey is called Regular Survey.

3. Preliminary And Final Survey

A Preliminary survey is generally known as 'Pilot study' and it is a fore run of the Final Survey. Final survey is made after the pilot study has completed.

4. Senses and Sample Survey

A survey make our all the units of a given universe then it is called a sense survey. If the survey covers only a fraction of the universe, then it is called sample survey.

Advantages of Survey

The major advantages of the survey method are

1. The versatility of the survey method is its greatest strength. It is the only practical way to collect many types of information's from individuals, socio-economic data, attitudes, opinions, experience and expectations.

2. The survey method facilitates drawing generalisations about large populations on the basis of studies of representative sample.

3. The survey method is flexible to permit the use of various methods of collection of data.
4. The survey help the researches to face unanticipated problems.
5. Survey is useful in verifying theories

Limitations of Survey

1. Survey method is primarily meant for collection of data from primary sources. So its success depends upon the willingness and co-operations of the respondents.
2. The survey method depends primarily on verbal behaviour. The respondent can give misleading answers.
3. A sample survey is subject to sampling error.
4. There is a limit of the number of items of information that can be collected in a single survey. There is an optimal length of time for an interview.
5. A survey is very expensive in terms of time and cost.

RESEARCH DESIGN

Meaning

"A Research Design is the logical and systematic planning in directing the research. The design research from translating a general scientific model into varied research problem. But in practices in most of the basis it is just a plan of study. The research design can either be formal or informal.

Definition

1. "It constitutes the blue print for the collection, measurement and analysis of data" -Philips Bernard S
2. It "provides a systematic plan of procedure for the researcher to follow" -Best John N
3. "The design research from controlling general scientific model into varied research procedure"- P.V. Young
4. "A research design is "the programme that guides the investigator in the process of collecting, analysis and interpreting observations". - David and Shava

A research design addressers itself to certain key issues such as:

a) What is the problem uncles study?

b) What is the major research question?

c) What is the area of the study?

d) How many people will be study?

e) How this people will be selected?

f) What methods and techniques will be used to collect data from them?

Features of Research Design

a) It is a plan that specifies the objectives of study and the hypothesis to be tested.

b) It is an outline that specifies the sources and types of information relevent to the research question.

c) It is a blueprint specifying the methods to be adopted for gathering and analysis of data.

d) It is a scheme defining the procedure involved in a research process.

Features of a good Design

A good design has the following features.

1. Flexibility
2. Efficiency
3. Appropriate
4. Economical
5. Minimum error
6. Maximum reliability
7. Smallest experimental error
8. Maximum information

Why a Research Design

1. Research Design is needed because it helps in the smooth sailing of Research operations.
2. A Research without a pre-drawn plan is like an ocean voyage without mariners compus.
3. The Research Design helps in providing direction our study.
4. It prevents welter in a study.
5. The use of Research Design prevents blind search.
6. A Research Design fixes clear cut boundaries to a research.
7. It makes the research systematic

8. It help us to meet unexpected events.

Contents of a Research Design

Usually a Research Design consist of the following details

1. What is the study about?
2. Why is the study being made?
3. Where will the study be carried out?
4. What type of data is required?
5. Where can the required data be found?
6. What period of time will the studied include?
7. What will be the sample design?
8. What technique of data collection will be used?
9. How will the data we analyse?
10. In what style the report will be prepared?

By way of conclusion it can be said that research design must contain at least:

a) Statement of a problem

b) Procedure and techniques

c) Sampling frame

d) Processing and analysis of data

Types of Research Design

1. Exploratory Research Design (Formulative Research)

Exploratory Research studies are also termed as formulative research studies. Exploratory Research is preliminary study of an in familiar problem about which the researcher has little or no knowledge. It is similar to a doctor initial investigation of patient suffering from an in familiar malady for getting some clues for identifying.

2. Descriptive Research Design

Descriptive study is fact finding investigation with adequate interpretation. It is the sample type of research. It is more specific than the exploratory study. As it has focus on particular aspects

or dimensions of the problem studied. It is design to gather descriptive informations and provides information for formulating more sophisticated studies. Data are collected by using of appropriate methods.

3. Action Research

Action Research is a type of evaluation study. It is a concurrent evaluation study of an action programme launched for solving a problem. Action research is otherwise called Apply Research.

The following are the different phases in action research.

1. A base lane survey of the pre-action situation.
2. A feasibility study of the proposed action programme
3. Planning and launching the programme.
4. Concurrent evaluation of the programme
5. Making modifications and changes in the programme and its methods of implementations in the light of research finding.
6. Final Evaluation

(The Researcher can design his research depends upon the nature of the research being conducted.)

MODULE III

SAMPLING

Need of sampling

Sometimes it is not feasible to study a whole group or an extremely large group. For example social work researcher may be interested in learning about the mentally challenged children, mentally ill, prison inmates, street children or some other large group of people.

It would be difficult or rather impossible to study all members of the groups. Here comes the process called sampling, which allows to study a manageable number of people from the large group to device inferences that are likely to be applicable to all the people of the large group.

Another reason why we would study a sample is that the results of obtained from the sample are more precise and correct than the results obtained from the study of the whole group.

Cost involved in studying all units of a large group is yet another factor which suggest to study a small group of people.

Associated with cost there are certain other factors such as time available for the study

Above all, the point to be kept in mind is if we can get almost same result by studying a carefully selected small group of people, why should we study the large group at all.

Some Technical terms

1. Population or Universe

   Population or universe is the aggregate of all units possessing certain specified characteristics on which the sample seeks to draw inferences.

2. Frame :- The frame describes the population interms of sampling units .It may be a geographical area. In essence a frame lists or maps elements of the universe.

3. Census :- Census denotes a total enumeration of individuals elements for units in defined population.

4. Sample : A Sample is composed of some fractions or part of the total number of elements or units in a defined population.

5. Design: The Designing means the method by which sample to chosen.

6. Random: A mathematical term 'Random' means that every element of the total population has a equally change of probability on being chosen for the sampling.

7. Unit: any population or universe should contain some specifications in terms of content units, extent and time for Eg: "A farmers household in a district in Punjab in 1975" There is a unit determination in a household and time destination of the population .

8. Parameter : Parameter is the value of a variable calculation from the population which is being studied.

9. Precision : Precision of is a sample is designated by the computation of slandered error.

10. Stratification: It makes which the segmentation of a sample. It is a number of data. Characteristics of Good sample

a) Representativeness: A sample must be representative of the population. In measurement terms as well as in quality.

b) Accuracy: Accuracy is defined as the degree to which has to absent which sample.

c) Precision: The sample must yield precised estimate. Standard error should be minimized.

d) Size: A good sample must be adequate in size. It should not too small or too big.

Advantages of sampling

1. Sampling reduces time and cost of research studies.

2. Sampling saves labour

3. The quality of study is often better with sampling.

4. Sampling provides much quicker results.

Limitations

1. In the absence of a thorough knowledge, sampling methods the result option may be incorrect or misleading.

2. A complicated sampling may require may labour than a complete coverage.

3. A pure representation is impossible in most cases

Sampling Methods

Sampling methods may be classified into two types.

a) Probability or Random sampling

b) Non Probability or Non- Random sampling

Probability sampling is the following types:

a) Simple Random sampling

b) Stratified Random

c) Systematic Random

d) Random Sampling with probability proportional to size.

e) Cluster sampling

f) Area sampling

Non Probability sampling may be classified into:

a) Convenient sampling

b) Purposive sampling

c) Quota sampling

d) Snow-Ball sampling

Probability sampling Methods

A) Simple Random Sampling

1. Lottery Method: This is the simplest and most familiar procedure of random sampling. If a simple of ten students is to be taken out of a list of 50 students take 50 equals size in a global container and thoroughly shuffle them. Take to steps from the container one after another each time before drawing a stip shuffle the container. Thus we can take the decide sample from a population using Random methods.

2. Use of table of Random numbers

10	06	96	43	27	15
37	73	44	36	91	60
08	54	72	90	74	22
09	25	88	94	65	04
12	11	66	99	49	17

This method is developed by Fisher, Yates and Tippest (Tippet table) to select a Random sample out of a given frame. One should simply start to read number from the table of Random Number.

We can select from the second column from the row we get sample 77,47,44,01 and 80 one thus the decide number of sample can be taken from a table of Random number shown as below.

3. Use of Computer

If the population is very large and if computer facilities are available, a computer may be used for drawing a Random sample. The computer can be programmed to printout a series of Random member as the research decides.

B) Stratified Sample

This is an improved type of random probability sampling. In this method the population is subdivided into homogenous groups or strata and from each strata from random sample is drawn. For eg. University students may be divided on the basis of discipline and each discipline group may again be divided into junior and seniors; The employees of a business firm may be divided into managers and non managers and each of this group may be subdivided into salary, grade wise strata.

C) Systematic sampling (Fixed Interview Method)

This method of sampling is an alternative to random selection. It consists of every nth item in the population after a random start with an item from 1 to N. Suppose it is decided to select a sample of 20 students from a list of 300 students, divide the population total of 300/20. The quotation is 50 (Fraction in the division is not taken) select a number at a random b/w 1 and 15 by using lottery method. Suppose the selected number is '9' then the student numbered '9', '24' (9+15), 39 (24+15), 54 (39+15) etc. are selected as sample.

As the Interval between sample units is fixed, this method is also known as fixed interval method.

D) Proportionate Stratified Sampling

This sampling involves drawing a sample from each strain in proportion to their share in the total population. For example the final year MBA students of the management faculty of a university consist of the following specialization group.

Specialisation	No. of Students	Proportion
Production	40	.4
Finance	20	.2
Marketing	30	.3
Rural Development	10	1
	100	1

The Researcher wants to draw an overall sample of 30. Then the strata sample size would be

Strata	Sample
Production	30x.4=12
Finance	30x.2=6
Marketing	30x.3=9
Rural Development	30x.1 =3
Total	30

Thus proportionate sampling gives proper representation to each stratum and its statistical efficiency is very high. Therefore that is very popular.

Non Probability Sampling Methods

a) Convenience Accidental Sampling

This is a non probability sampling. It means selecting sample units in a just 'Hit and Miss' fashion. Example interviewing people whom will happen to meet. For example, a teacher may select ten students in his class. This method is also known as accidental sampling because the respondents whom the researcher meets accidently are included in the sampling. It has some advantages.

a) It is the cheapest and simplest method of data

b) It does not require a list of population

c) It does not require any statistical experience

It has some limitation also

a) It may not yield the desirable

b) It is not a reliable sample method

1. Purposive or Judgment Sampling

This method is deliberate selection of sampling units. It is also known as Judgment sampling. Here the chance depends upon the judgment of the researcher.

It has some merits

1. It is less costly and more convenient. It has demerit. It does not measure proper representation.

2. It requires prior information about people

2. Quota Sampling

This a form a convenience sampling involving selection of Quota groups such as ; sex, age, social class. Here each investigators may be given an assignment Quota requires and

3. Snow ball Sampling

This is a colourful name for a technique of building up a list or a sample of a special population by using an initial set of the members as informants.

MODULE IV

DATA COLLECTION

The search for answers to research questions is called collection of data. Data are facts, and other relevant materials, past and present, serving as bases for study and analyses. The data needed for social science research may be broadly classified into (a) Data pertaining to human beings, (b) Data relating to organizations and (c) Data pertaining to territorial areas.

Personal data or data related to human beings consist of (1) Demographic and socio-economic characteristics of individuals: Age, sex Race, social class religion marital status, education, occupation, income, family size, location of the house hold, life style, etc., (2) Behavioral Variables: Attitudes, opinions, awareness, Knowledge, practice, intentions, etc.

Organizational data consist of data relating to an organization's origin, ownership, objectives, resources, functions, performance and growth.

Territorial data are related to geophysical characteristics, resources endowment, population, occupational pattern, infrastructure, structure, degree of development, etc. of spatial divisions like villages, cities taluks, districts, state and the nation.

Importance of data

The data serve as the bases or raw material for analysis. Without an analysis of factual data, no specific inferences can be drawn on the questions under study. Inference based on imagination or guess work cannot provide correct answers to research questions. The relevance adequacy and reliability of data determine the quality of the findings of a study.

Data from the basis for testing the hypotheses formulated in a study. Data also provide the facts and figures required for constructing measurement scale and tables, which are analyses with statistical techniques. Inferences on the results of statistical analysis and tests of significance provide the answers to research questions. Thus, the scientific process of measurements, analysis, testing and inferences depended on the availability of relevant data and their accuracy. Hence, the importance of data for nay research studies.

Sources of data

The sources of data may be classified into (a) primary sources and (b) secondary sources.

Primary sources are original sources from which the researcher directly collects data that have not been previously collected. Primary data are first-hand information collected through various methods such as interviewing, mailing, observation etc. Secondary sources containing data which have been collected and compiled for another purpose. The secondary sources consists of readily available compendia and already compiled statistical statements and reports whose data may be used by researches for their studies. E.g., census reports, annual reports and financial reports. Secondary sources consist of not only published records and reports, but also unpublished records.

Objective data and subjective data

Objective data is independent of any single person's opinion, whereas subjective data can be an individual's opinion or it can be dependent upon the researcher.

Qualitative data and quantitative data

Qualitative data is the description of things made without assigning numeric value. For example, facts generated from unstructured interview. It needs researcher's interpretation.

Quantitative data entails measurements in which numbers are used directly to represent properties of things. It is ready for statistical analysis. The larger sample is required in quantitative data, and with proper sampling design, the ability to generalize is also high.

Main methods of Data collection

Most research studies collect fresh data from the respondents even though already existing data are utilized for developing the research design or supplementing the data to be collected. There are various methods of data collection. 'Method is different from a 'Tool' while a method refers to the way or mode of gathering data, a tool is an instrument used for the method. For example, a schedule is used for interviewing. The important methods are (a) *observation,* (b) *interviewing,* (c) *mail survey (D) schedule.* Observations involves gathering of data relating to the selected research by viewing and or listening. Interviewing involves face to face conversation between the investigator and the respondent. Mailing is used for collecting data by getting questionnaires completed by respondents. Experimentation involves a study of independent variables under controlled conditions. Experiments may be conducted in a laboratory or in field in a natural setting. Simulation involves creation of an artificial situation similar to the actual life situation. Projective methods aim at drawing inferences on the characteristics of respondents by presenting to them stimuli. Even method has its advantages and disadvantages.

A researcher can select one or more of the methods keeping in view the above factors. No method is universal. Each method's unique features should be compared with the needs and conditions of the study and thus the choice of the methods should be decided.

Observation

Observation is a basic method of getting information about the world around us. Observation part and parcel of our daily life but many types of data required as evidence to support social research are also obtained through the observational method. The greatest asset of observational technique is that it is possible to record the actual occurrence of social events. While many research technique depend mainly if not entirely on recalling the past events, observational method yields such as are related to real life situations. A trained researcher can even observe and record all the minor details of a community with the help of this technique which to others might seem insignificant.

Observation means viewing or seeing. Most of such observations are just causal and have no specific purpose. But observation in a method of data collection is different from such causal viewing. Observation may be defined as a systematic viewing of a specific phenomenon in its

proper setting for the specific purpose of gathering data for a particular study. Observation as a method includes both 'seeing' and 'hearing'. It is accompanied by perceiving as well.

Observation is a classical method of scientific inquiry. Observation also plays a major roe in formulating and testing hypothesis in social sciences. Behavioral scientists observe interactions in small groups; political scientists observe the behavior of political leaders and political institutions.

Observation may serve a variety of research purposes. It can be used in exploratory research to develop a preliminary understanding of social phenomena. It can be applied to study real life situations as well as to conduct experimental research. Again, it can simply be used to collect supplementary data in support of other tools of data collection. Observation includes the most causal and uncontrolled experiences as well as exact recording as is done in experimentation. In fact, observation is useful for studying simpler as well as complex research problems.

Observation becomes scientific, when it (a) serves a formulated research purpose, (b) is planned deliberately, (c) is record systematically, and (d) is subjected to check and controls on validity and reliability. Validity refers to the extent to which the recorder observations accurately reflect the construct they arc intended to measure. Validity is assessed by examining how well the observations agree with alternative measures of the same construct. Reliability entails consistency and freedom from measurement error.

Characteristics of observation method

Observation as a method of data collection has certain characteristics.

1. It is both a physical and mental activity. The observing eye 'catches' many things which are slighted, but attraction is focused on data that are pertinent to the given study.

2. Observation is selective. Researcher does not observe anything and everything, but selects the range of things to be observed on the basis of the nature, scope and objectives of his study

3. Observation is purposive and not casual. It is made for the specific purpose of nothing things relevant to the study.

4. It captures the natural social context in which persons' behavior occurs.

5. It grasps the significant events and occurrences that affect social relations of the participants.

6. Observation should be exact and be based on standardized tools of research such as observation schedule, social-metric scale, and precision instruments, if any.

Types of observation

Observation may be classified in different ways. With reference to investigator's role, it may be classified into (a) participant observation, and (b) non-participant observation, in terms of mode of observation, it may be classified into (c) direct observation and (d) indirect observation.

With reference to the rigor of the system adopted, observation is classified into (e) controlled observation, and (f) uncontrolled observation.

Participant observation

In this observation, the observer is a part of the phenomena or group which is observed and he acts as both an observer and a participant. The persons who are observed should not be aware of the researcher's purpose. Then only their behavior will be 'natural'. The concealment of research objective and researcher's identity is justified on the ground that it makes it possible to study certain aspects of the group's culture which are not revealed to outsiders makes it possible to study certain aspects of the group's culture which are not revealed to outsiders.

The advantages of participant observation are:

1. The observer can understand the emotional reactions of the observed group, and get a deeper insight of their experiences.

2. The observer will be able to record context which gives meaning to the observed behavior and heard statements.

Disadvantages

1. The participant observer narrows his range of observation.

2. To the extent that the participant observer participates emotionally, the objectivity is lost.

Because of the above limitations, participant observation is generally restricted to those cases where non-participant observation is not practical.

Non-participant observation

In this method, the observer stands apart and does not participate in the phenomenon observed. Naturally, there is no emotional involvement on the part of the observer. This method calls for skill in recording observations in an unnoticed manner.

Direct observation

This means observation of an event personally by the observer when it takes place. This method is flexible and allows the observer to see and record subtle aspects of events and behavior as they occur. He can free to shift places, change the focused the observation. A limitation of this method is that the observer's perception circuit may not be able to cover all relevant events when the latter move quickly, resulting in the incompleteness of the observation.

Indirect observation

This does not involve the physical presence of the observer, and the recording is done by mechanical, photographic or electronic devices. This method is less flexible than direct observation, but it is less biasing and less erratic in recording accuracy. It also provides a permanent record for an analysis of different aspects of the event.

Controlled observation

This involves standardization of observational technique and exercise of maximum control over extrinsic and intrinsic variables by adopting experimental design and systematically recording observations. Controlled observation is earned out either in the laboratory or in the field. It is typified by clear and explicit decisions on what, how and when to observe. It is primarily used for inferring causality, and testing causal hypothesis.

Uncontrolled observation

This does not involve control over extrinsic and intrinsic variables. It is primarily used for descriptive research. Participant observation is a typical uncontrolled one.

Planning of observation

The use of observation method requires proper planning.

First, the researcher should carefully examine the relevance of observation method to the data needs of the selected study.

Second, he must identify the specific investigative questions which call for use of observation method. These determine the data to be collected.

Third, he must decide the obseivation content, viz., specific conditions, events and activities that have to be observed for the required data. The observation content should include the relevant variables.

Fourth, for each variable chosen, the operational definition should be specified.

Fifth, the observation setting, the subjects to be observed, the timing and mode of observation, recording, procedure, recording instruments to be used, and other details of the task should be determined.

Last, observers should be selected and trained. The persons to be selected must have sufficient concentration powers, strong memory power and untrubusive nature. Selected persons should be imparted both theoretical and practical training.

Observation Tools and Recording Devices

Systematic observation requires the use of observation schedule (or observationnaire), diary and various mechanical recording devices.

Schedule: The data requirements are identified by analyzing the core of the problem, the objectives of the study, the investigative questions, hypothesis and the operational definition of concepts and out of the data requirements, items of data to be collected through observation are identified. A schedule is then constructed, covering those items of data.

It should be constructed in such a manner as to make it possible to record the necessary information easily and correctly. Enough space should be provided for recording observations for

each time. The item should appear in logical groupings and in order in which the observer would observe them.

Field observation: This may take the form of a diary or cards. Each item of observation is recorded under appropriate sub-heading. At the time of observation, rough noting may be made, and at the end of the day, full log may be made. The card system is flexible and facilities arrangement and re-arrangement of items in any desired order.

Mechanical devices: These may include cameras, tape recorders, videotapes and electronic devices. Still, motion, sound, color and time lapse cameras give a permanent record of events, Microscopic and telescopic lens may be used in cameras.

Advantages of observation

Observation has certain advantages

1. The main virtue of observation is its directness, it make it possible to study behavior as it occurs.. The researcher need not ask people about their behavior and interactions, he can simply watch what they do and say.

2. Data collected by observation may describe the observed phenomena as they occur in their natural settings. Other methods introduce elements or artificiality into the researched situation.

3. Observation is more suitable for studying subjects who are unable to articulate meaningfully.

4. Observation is less demanding of the subjects and less biasing effect on their conduct than does questioning.

Limitations of study

1. Observation is of no use of studying past events or activities. One has to depend upon documents or narrations by people for studying such things.

2. It is not suitable for studying opinions and attitudes.

3. Observation poses difficulties in obtaining a representative sample.

4. Observation is a slow and expensive process. Requiring human observes and/or costly surveillance equipments.

Interview

Interviewing is one of the prominent methods of data collection. An interview is a face to face interaction between two individuals in which a person asks questions from another person in order to gather information. Interview emerged as a tool of data collection by the turn of the last century and has by now become an integral part of social research. During earlier times, interviews were conducted more in the nature of probing conversation. Guided by a careful observer this method was used as a powerful instrument for obtaining information.

It involves not only conversation, but also learning from the respondent's gestures, facial expressions and pauses, and his environment. Interviewing requires face-to face contact or contact over telephone and calls for interviewing skills. It is done by using a structured schedule or an unstructured guide.

Importance of interview

Interviewing may be used either as a main method or as a supplementary one in studies of persons. Interviewing is the only suitable method for gathering information from illiterate or less educated respondents. It is useful for collecting a wide range of data from factual demographic data to highly personal and intimate information relating to a person's opinions, attitudes, and values, beliefs, past experience and future intentions. When qualitative information is required or probing is necessary to draw out fully, and then interviewing is required. Where the area covered for the survey is a compact, or when a sufficient number of qualified interviews are available, personal interview is feasible.

Interview is often superior to other data- gathering methods. People are usually more willing to talk than to write. Once rapport is established, even confidential information may be obtained. It permits probing into the context and reasons for answers to questions.

Interview can add flesh to statistical information. It enables the investigator to grasp the behavioral context of the data furnished by the respondents. It permits the investigator to seek clarifications and brings to the forefront those questions, that for one reason or another, respondents do not want to answer.

Characteristics of interview

Interview as a method of data collection has certain characteristics.

1. The participants- the interviewer and the respondent- are strangers. Hence, the investigator has to get him introduced to the respondent in an appropriate manner.

2. The relationship between the participants is a transitory one. It has a fixed beginning and termination points. The interview proper is a fleeting, momentary experience for them.

3. Interview is not a mere causal conversational exchange, but a conversation with a specific purpose, viz., and obtaining information relevant to study.

4. Interview is a mode of obtaining verbal answers to questions put verbally.

5. The interaction between the interviewer and the respondent need not necessarily be on a face to face basis, because interview can be conducted over the telephone also.

6. Although interview is usually a conversation between two persons, it need not be limited to single respondent. It can also be conducted with a group of persons, such as family members, or a group of children or a group of customers, depending on the requirements of the study.

7. Interview is an interaction process. The interaction between the interviewer and the respondent depends upon how they perceive each other.

Types of interview

The interviews may be classified into (a) structured or directive interview, (b) unstructured or non-directive interview, (c) focused interview, and (d) clinical interview and (d) depth interview.

Structured, directive interview

This is an interview made with a detailed standardized schedule. The same questions are put to all the respondents and in the same order. Each questions is asked in the same way each interview, promoting measurement reliability. This type of interview is used for large-scale formalized surveys.

Unstructured or non-directive interview

This is least structured one. The interviewer encourages the respondent to talk freely about a given topic with a minimum of promoting or guidance. In this type of interview, a detailed pre-schedule is not used. Only a broad interview guide is used.

Focused interview

This is a semi-structured interview where the investigator attempts to focus the discussions on the actual effects of a given experience to which the respondents have been exposed. It takes place with the respondents known to have involved in a particular experience.

Clinical interview

This is similar to the focused interview but with a subtle differences. While the focused interview is concerned with the effects of a specific experience, clinical interview is concerned with broad underlying feelings or motivations or with the course of the individual's life experiences.

Depth interview

This is an intensive and searching interview aiming at studying the respondent's opinion, emotions or convictions on the basis of an interview guide. This requires much more training inter-personal skills than structured interviewing. This deliberately aims to elicit unconscious as well extremely personal feelings and emotions.

Advantages of interview

There are several real advantages to personal interview.

First, the greatest value of this method is the depth and detail of information that can be secured.

Second, the interviewer can do more to improve the percentage of responses and the quality of information received than other method. He can note the conditions of the interview situations,

and adopt appropriate approaches to overcome such problems as the respondent's unwillingness, incorrect understanding of questions, suspicion, etc.

Third, the interviewer can gather other supplemental information like economic level, living conditions etc. Through observation of the respondent's environment.

Fourth, the interviewer can use special scoring devices, visual materials and like in order to improve the quality of interviewing.

Fifth, the accuracy and dependability of the answers given by the respondent can be checked by observation and probing.

Last, interview is flexible and adaptable to individual situations. Even more control can be exercised over the interview situation.

Limitations of Interview

First, Interview is not free from limitations. Its greatest drawback is that it is costly both in money and time.

Second, the interview results are often adversely affected by interviewer's mode of asking questions and interactions, and incorrect recording and also be the respondents faulty perception, faulty memory, inability to articulate etc.

Third, certain types of personal and financial information may be refused in face-to face interviews. Such information might be supplied more willingly on mail questionnaires, especially if they are to be unsigned.

Fourth, interview poses the problem of recording information obtained from the respondents, no foolproof system is available. Note taking is invariably distracting to both respondent and the interviewer and affects the thread of the conversation.

Last, interview calls for highly skilled interviewers. The availability of such persons is limited and the training of interviewers is often a long and costly process.

Schedule

A schedule refers to set of questions related to a subject, printed or typed in a definite order. It is a device for securing information whereby a person is asked to answer the given set of questions.

The schedule is an important research tool which facilities the collection of data from large, diverse and widely scattered groups of people. It can be used to collect quantitative data as well as for secure g information of qualitative nature. In most empirical studies the primary research tool is the schedule.

The schedule is administered by the research investigator. It is not self-administered. In the case of the schedule, the answers are obtained from the respondent in a face-to face situation. The responses or answers are noted down by the interviewer, Moreover, the interviewer can act as a stimulus or can furnish on the spot clarifications to the respondent if required. Thus, a schedule

presupposes a face to face interaction between the interviewer and the respondent. When the questions are self-administered and require the respondent to answer all items. When the questions are self-administered and require the respondent to answer all questions by himself it is called mailed questionnaire. Such questions are often sent by mail/post to the respondent. Sometimes they are distributed to a group of people who may have come to attend a conference, with the request that they may fill it up and return the same.

Usually a schedule contains structured items. By structured is meant that questions have fixed wording. They are also typed or printed in a definite order. Thus a particular set of questions having exactly the same wording and sequence is administered to all the respondents.

Important considerations in the construction of a schedule

A schedule should contain a limited number of questions. Only such questions as are extremely important to fulfill the requirements of a study should be included. Questions which may elicit some already known or obvious information should be deleted. Generally, respondents do not like to devote sufficient time ans energy for a long schedule.

A schedule is usually divided into several sections. Each section must contain a set of questions related to a particular item or theme. In the light of requirement of the research problem, some rationale must be developed to include each item or theme. Questions relating to the same general theme must be placed together. Questions placed at the beginning of a schedule should be such that they are able to draw the respondents complete attention. They should be able to evoke his interest. However the opening question should be neutral. In other words, the beginning should not contain any controversial issue as the respondents may develop a negative orientation towards the whole questionnaire. This may lead to tardy responses or even outright refusals.

The researcher should carefully determine the sequence of the different themes covered in a schedule. A gradation of themes starting from simpler ones and gradually leading to complex questions ones should be made. There should be logical sequence of themes as well as questions. The transition from one theme to the other should not be abrupt. Complex questions requiring serious thinking are preferably placed somewhere in the middle of the schedule as the respondent may develop fatigue towards the end and may not give to such questions the attention they deserve.

A crucial aspect of a schedule relates to the formulation of questions. These should be framed in such a way that the researcher may logically expect the answers to be significant for his research problem. A good schedule grows from sound study of the problem and review of literature on the subject. Every item included in the schedule must be related to the objectives of the study. A tentative list of areas on which questions are to be asked is drawn up. It is useful to consult knowledgeable people and conduct interviews to arrive at greater clarity. In the beginning efforts should be made to cover as many items as possible. Gradually the researcher may detect omissions, gaps or ambiguities. Also, he may determine which items are most important and which are not. Any research venture can adequately cover only a limited number of themes directly related to the research objectives. Most of the questions should focus sharply on such important themes. The actual process of formulating questions requires great skill and expertise. A detailed discussion on this aspect runs beyond the scope of this unit.

The amount of space needed for answering open ended questions has to be determined. For example, suddenly the researcher may find that an open ended question needs more space for the answer than has been provided in the printed schedule. Some sort of preliminary exercise helps in assessing this requirement as well.

Telephone interviewing

Telephone interviewing is non-personal method of data collection. It may be used as a major method or supplementary method.

It will be useful in the following situations:

1. When the universe is composed of those persons whose names are listed in telephone directories, e.g., business houses, business executive, doctors, other professionals.
2. When make the respondents are widely scattered and when there are many call backs to make.
3. When the subject is interesting or important to respondents.
4. When the survey must be conducted in a very short period of time, provided the units of study are listed in telephone directory.

The advantages of telephone interview are:

1. The survey can be completed at very low cost, because telephone survey does not involve travel time and cost and all calls can be made from a single location.
2. Information can be collected in a short period of time. 5 to 10 interviews can be conducted per hour.
3. Quality of response is good, because interviewer bias is reduced as there is no face to face contact between the interviewer and the respondent.
4. It has higher response rate.
5. It has greater sample control.

Telephone interview has several limitations.

1. There is a limit to the length of interview. Usually, a call cannot last over five minutes. Only five or six simple questions can be asked. Hence, telephone cannot be used for a longer questionnaire.
2. The type of information to be collected is limited to what can be given in simple, short answers of a few words. Hence, telephone is not suitable for complex surveys, and there is no possibility of obtaining detailed information.
3. If the questions cover personal matters, most respondent will not cooperate with the interviewer.

4. The respondent's characteristics and environment cannot be observed.

5. It is rather difficult to establish rapport between the respondent and the interviewer.

Mail survey

The mail survey is another method of collecting primary data. This method involves sending questionnaires to the respondents with a request to complete them and return them by post. This can be used in the case of educated respondents only. The mail questionnaires should be simple so that the respondents can easily understand the questions and answer them. It should preferably contain mostly closed-end and multiple choice questions so that it could be completed within a few minutes. The distinctive feature of the mail survey is that the questionnaire is self-administered by the respondents themselves and the responses are recorded by them, and not by the investigator as in the case of personal interview method. It does not involve face-to face conversation between the investigator and the respondent. Communication is carried out only in writing and this requires more cooperation from the respondents than do verbal communication.

Procedure

The researcher should prepare a mailing list of the selected respondents by collecting the addresses from the telephone directory of the association or organization to which they belong. A covering letter should accompany a copy of the questionnaire. It must explain to the respondent the purpose of the study and the importance of his cooperation to the success of the project. Anonymity may be assured.

Alternative modes of sending questionnaires

There are some alternative methods of distributing questionnaires to the respondents. They are: (1) Personal delivery, (2) Attaching questionnaire to product. (3) Attaching questionnaire in a newspaper of magazine and (4) News stand inserts.

Personal delivery: The researcher or his assistant may deliver the questionnaires to the potential respondents with a request to complete them at their convenience. After a day or two he can collect the completed questionnaires from them. Often referred to as the self-administered questionnaire method, it combines the advantages of the personal interview and the mail survey. Alternatively, the questionnaires may be delivered in person and the completed questionnaires may be returned by mail by the respondents.

Attaching questionnaire to a product: A firm test- a firm test-marketing a product may attach a questionnaire to a product and request the buyer to complete it and mail it back to the firm. The respondent is usually rewarded by a gift or a discount coupon.

Advertising the questionnaire: The questionnaire with the instructions for completion may be advertised on a page of magazine or in a section of newspapers. The potential respondent completes it tears it out and mails it to the advertiser.

News-stand inserts: This method involves inserting the covering letter, questionnaire and self-addressed reply-paid envelope into a random sample of newsstand copies of a newspaper or magazine.

Advantages of mail surveys are:

1. They are less costly than personal interviews, as cost of mailing is the same throughout the country, irrespective of distances.

2. They can cover extensive geographical areas.

3. Mailing is useful in contacting persons such as senior business executives who are Difficult to reach in any other way.

4. The respondents can complete the questionnaires at their conveniences.

5. Mail surveys, being more impersonal, provide more anonymity than personal interviews.

6. Mail survey is totally free from the interviewer bias, as there is no personal contact between the respondents and the investigator.

7. Certain personal and economic data may be given more accurately in an unsigned mail questionnaire.

Disadvantages of mail surveys are:

1. The scope for mail survey is very limited in a country like India where the percentage of literacy is very low.
2. The response rate of mail surveys is low. Hence, the resulting sample will not be a representative one.
3. It is difficult to determine the degree of representativeness of a sample obtained by mail.
4. The causes for inadequate and non-responses cannot be known, and no probing is possible.
5. Information on the personal characteristics of the respondent and his environment cannot be secured.
6. Respondent may not cooperative if the mail questionnaire is long or complex.
7. Several returned questionnaires may contain unanswered questions and incomplete responses.

Tools for Data collection

The various methods of data gathering involve the use of appropriate recording forms. These are called tools or instruments of data collection. They consist of- Questionnaire, observation schedule, interview guide, interview schedule and mailed questionnaire.

Each of the above tools is used for specific method of data gathering: Observation schedule for observation method, interview schedule and interview guide for interviewing, questionnaire for mail survey.

Functions

The tools of data collection translate the research objectives into specific questions/items, the response to which will provide the data required to achieve the research objectives. In order to achieve this purpose, each question/item must convey to the respondent the respondent the idea or group of ideas required by the research objective research objects, and each item must obtain a response which can be analyzed for fulfilling the research objectives.

Information gathered through the tools provides descriptions of individuals, institutions or other phenomenon under study. The characteristics may help to explain differences in behavioral pattern and performance of objects under study.

Information gathered through the tools serve another purpose also. It is useful for measurement the various variables pertaining to the study. The variables and their interrelationships are analyzed for testing the hypothesis or for exploring the content areas set by the research objectives.

Questionnaire

Questionnaire depends upon research objectives. For each objective or research questions, list all the associated questions that a researcher wants to answer through study. Then the information required to answer them is listed, and finally, the questions are listed. A questionnaire consists of a set of questions presented to a respondent for answers. The questionnaire is used during structured surveys or interviews. The respondent read the questions, interpret what is expected, and then write down the answers themselves. It is also called an interview schedule when the researcher asks the questions and records the respondents reply on the interview schedule. Here, the researcher may have to explain questions to the respondents.

There are many options before the researchers adopt this method, but questionnaires should be developed and tested carefully before being administered on a large scale. There are three basic types of questionnaires, closed-ended open ended, and a combination of both.

1. **Closed-ended questionnaire:** closed-ended questionnaires generally include multiple choice questions or scale questions. This type of questionnaire can be at, the administered to a large number of respondents or sample size. As there is set format, the data generated from questionnaire can be easily fed into a computer system for the purpose of analysis.

2. **Open-ended questionnaire:** open-ended questionnaires offer the flexibility to respondents to answer in their own words. It may leave a blank section to write an answer. Closed-end questionnaires might be used to find out how many people use metro rail service in New Delhi, but open-ended questionnaires might be used to find out what people think about the quality of service.

3. **Combined questionnaire:** in this method, it is possible to find out how many people use a service and what they think of the service in the same form. The combined questionnaire

may begin with a series of closed-end questions, with boxes to tick or scales to rank, and then finish with a section of open-ended questions or a more detailed response.

Observation schedule or Observationnaire

This is form on which each unit observation for observations of an object or a phenomenon is recorded. This item to be observed is determined with reference to the nature and objectives of the study. They are grouped into appropriate categories and listed in the schedule in the order in which the observer would observe them.

The items are structured with possible alternatives. Space is each unit observation for encircling or checking, or recording, as the case may be.

Provision is made for the correct identifications of each case observed and of the observer.

The schedule should be so constructed as to make it possible to record the observations easily and correctly and to tabulate and analysis effectively.

The schedule must be as devised as to provide the required verifiable and quantifiable data and to avoid selective bias and misinterpretations of observed items. The units of observation must be simple, and meticulously worded so as to facilitate precise and uniform recording.

Interview Guide

This is used for non-directive and depth interviews. It does not contain a complete list of it on which information has to be elicited from a respondent; it just contains only the broad topics or areas to be covered in the interview.

Interview guide serves as a suggestive reference or promoter during interview. It aids in focusing attention on salient points relating to the study and in securing comparable data in different interviews by the same or different interviewers.

There is considerable flexibility as to the manner, and order language In which the interviewer asks the questions. If the interviewer has to refer the guide very often, it would defeat its own purpose. The interviewer cannot listen closely and analytically if his attention rests on the guide. He may fail to respond to the cues and implications of the interviewee's remarks.

Interview schedule and mailed Questionnaire

Both these tools are widely used in surveys. Both are complete lists of questions on which information is elicited from the respondent's. The basic difference between them lies In recording responses. While a schedule is filled out by the interviewer, a questionnaire is completed by the respondent.

MODULE V

PROBLEM FORMULATION

In Research process, the 1st and foremost step is that of selecting properly and defining a research problem. The researchers must find the problem and formulate it so that it becomes susceptible research. Like a doctor, a researcher must examine all the symptoms concerning a problem before he can diagnosis correctly.

"A problem well put is half solved". This saying highlights the importance of proper formulation of the selected problem. The primary task of Research is the collection of relevant data and the analysis of data or finding answers to research questions.

The proper performance of this task depends upon the identification of correct data and information required for the study. Once the problem is formulated he can execute the other steps without any waste of time and energy. Thus formulation is a direction and specific focus to research effort. It helps to delimit the field of enquiry and prevent blind research and indiscriminate gathering of data. A proper formulation help to solve all major tasks for research like sampling, collection of data, construction of tools, plan of analysis etc.

What is a Research Problem?

A Research problem in general refers to some difficulty the researches experiences in the context of a theoretical or practical situation and wants to obtain a solution for the same.

"The term problem means a question or issue to be examined"

The term problem originate from the Greek word 'Probellim' - meaning anything that thrown forwards, a question proposed for solution, a matter stated for examination.

What is formulation?

Formulation means "translating and transforming the selected Research problem in to a scientifically researchable question".

An illustration

Let us suppose that a Research problem in general way as follows "Why is productivity in Japan so much higher than India".

In this form of question has a number of ambiguities such as: what sort of productivity is being referred to? With industries the same is related? With what period of time the productivity is being talked about? In view of all such ambiguities the given statements or the question is too much general to be amenable to analysis, Rethinking and discussion about the problem may resulting narrowing down the question to "what factors were responsible for the higher labour productivity of Japan's manufacturing Industries during the decade 1971 to 1980 relative to India's manufacturing Industries"?

This version of the problem is definitely an improvement over its earlier versions for the various ambiguities have been removed to the extend possible. Further rethinking and rephrasing of the problem will become in this form.

"To what extent did labour productivity in 1971 to 1980 in Japan exceed that of India in respect of 15 selected manufacturing Industries? What factors were responsible for the productivity differentiates between the two countries by Industries?

With this of formulation, the various terms involves such as 'labour productivity', 'productivity differentials etc are explained clearly. The time period, the need of data etc are considered in this type of formulation.

Selection of a Problem

The Research problem undertaken for study must be carefully selected the task is a difficult one, although it may not appear to this. So in this connection researcher can seek the help of a guide. However the research problem cannot be borrowed. A problem must spring from the mind of researcher like a plant spring from its seed. A research guide can only help a researcher to choose the subject. The following paints may be observed by the researcher in selecting a research problem.

1. Subject which is overdone should not be chosen.
2. Controversial subjects should not be taken.
3. Too narrow or too wide problems should be avoided.
4. The subject selected for research should be familiar and feasible.
5. The subject should be within our time limit.
6. The subject should be within our affordable budget.

Sources of Problem

The sources from which one may be able to identity research problems are

1. Reading

When we critically study and articles relating to subject of our interest, pertinent questions may arise in our mind. Similarly areas of research may strike to our mind when we read research reports.

Academic Experiences

Classroom lectures, class discussions seminar discussions and out -of-class exchanges of ideas with fellow students and professors will suggest many stimulating problems to be studied.

Daily Experience

Life is dynamic. We learn new things and undergo new experiences every day. It we are all inquisitive and sensitive to like situation we may bit upon questions worth of investigation. The story about Newton testifies to this. Apples have fallen on the beads of people before Newton. But it was sensitive Newton alone raised the question regarding fall of apple which led to the discovery of Law of gravitation.

Consultation

Discussion with experts, researchers etc. will help to identify meaningful problems of research.

Field situation

Field visits, training and extension work provide exposure to problems which call for study.

Brain storming

Intensified discussion within a group of interested person may often be a means of identifying pertinent questions and of developing new ideas about a problem.

Intuition

Sometimes new ideas may strike to one's mind like a flash reflective mind is spring of knowledge. Eg. Sri Buddha.

Techniques of formulating Research Problem

How to define a Research Problem is undoubtedly a herculian task. However it is a task that must be talked intelligently. The usual approach is that the Researcher should himself pose a question and set techniques and procedure for throwing tight non the problem.

Defining a Research Problem properly and clearly is a crucial part of Research study and must in no case should accomplished hurriedlly. However in practice this is frequently overlooked. The techniques involved in defining and formulating a Research problem are as follows.

1. Statement of the problem in a general way
2. Understanding the nature of the problem
3. Surveying the available literature
4. Developing ideas through discussion
5. Rephrasing the Research Problem.

1. Statement of the problem in a General way

First of all the problem should be stated in broad general way keeping in view either some practical concern or some scientific or intellectual interests. For the purpose the researcher must

immerse himself thoroughly in the subject matter concerning which he wishes to pose a problem. In Research, some preliminary survey or Piolot Survey is desirable. Then he can himself states the problem or be can seek the help of a guide. Often the guide puts forth the problem in general terms, and then it is up to the Researcher to narrow it down and phrase the problem in operational term. The stated problem may have various ambiguities that must be resolved by cool thinking and thinking at the same time the feasibility of particular solutions has to be consider and the same should be kept in view wild stating the problem.

2. Understanding the nature of the problem.

The next step in defining the problem is to understand its origin and nature clearly. The best way of understand the problem is to discuss it with those who 1st raised it in order to find out how the problem originally came out and with what objectives in view. If the researcher has stated the problem himself, he should consider once again all those points that induced him to make a general statement concerning the problem. For a better understanding of the nature of the problem involved, he can enter into discussion with those who have a good knowledge of the problem concerned or similar other problems. The researcher should also keeping you the environment within which the problem is to be studied or understood.

3. Surveying the available literature

All the available literature concerning the problem at hand must necessarily be surveyed and examined before a definition of research problem is given. He must be conversant with relevant theories in the field, report and the records as also of all other relevant literature. He must devote sufficient time in reviewing of research already undertaken on related problems. This is done to find out what data and other materials, if any, are available for operational purposes. This would also help the researcher to know if there are certain gaps in the theories or whether the existing theory applicable to the problem study are in consistent with each other, or whether the findings of different studies do not follow pattern consistent with the theoretical expedition and so on. All these enable a research to take new strides in the field of Furtherance of knowledge that he can move to starting from the existing premise studies on related problems are useful for indicating the type of difficulties that may be encountered in the present study as also the possible analytical short coming. At times such studies also suggest useful and even new lines of approach to the present problem.

Developing ideas through discussion

Discussion concerning a problem often produces useful information. Various new ideas can be developed through such an exercise, hence, a researcher must discuss him problems with his colleagues and others who have enough of experience in the same area or in working on similar problems. This is known as experience survey. People with rich experience are in a position to enlightened the researcher firm

Rephrasing the Research Problem

Finally the researcher must patiently sit to rephrase the research problem into a working proposition- Once the nature of the problem has been clearly understood, the environment (with in which the problem has to be studied) has been defined, discussion over the problem have taken

place and the available literature has been surveyed and examined rephrasing the problem into analytical or operational terms is not a difficult task. Through rephrasing the researcher puts the research problem in as specific terms as possible so that it may become operationable and may help in the development of working hypothesis.

While defining a Research Problem the following points also may be noted.

a) Technical terms should be clearly defined

b) Basic Assumptions should be clearly defined

c) A straight forward approach should be provided

d) The suitability of time period and the source of data must be considered.

e) The scope of investigation and the limit of investigation should also we defined.

MODULE VI

RESEARCH REPORT

MEANING

A report is a detailed description of what has been done and how that been done with respect to a particular area or topic. A research report is a presentation or research findings in the form of report. It is a necessary part of the research process. It is the oral or written presentation of evidence. Research report writing is the culmination of the research investigation. Reporting is the end product of a research activity. (Indeed its practical application will follow"

Need/purpose of research report

1. It helps to communicate to the interested person the methodology and the results of the study.
2. It serves as a means for presenting the problem studied, methods and techniques used for collecting and analysing data me findings conclusions and recommendations in an organised manner Thus, it helps to evaluate the researcher's ability and competence to research
3. It serves as a basic reference material for future use m developing research proposals in the same or relevant area
4. It serves as a means for judging the quality of the completed research project
5. It provides actual base for formulating policies and strategies relating to the subject matter studied
6. It provides systematic knowledge or problems and issues analysed

Types of Reports

Research reports may be classified into two types-a& oral and written reports

A. Oral Report

In this, the researcher uses spoken words for communicating his study for eg: in seminars, conferences etc. It helps to have two-way communication between the researcher and the audience However no permanent record concerning the research details is available.

B. Written Report

In this, the researcher uses written words for presenting his study. Written reports are of six types

1. Technical Report/Thesis

This is a comprehensive full report of the research process. It is primarily meant for academic community ie., the scientists and other researchers. It is a formal long report covering all the aspects of the research process. The problem studied, the objectives of the study methods and techniques used, a detailed account of sampling field and other research procedures, analysis, detailed findings and conclusions and suggestions. There is also a technical appendix for method-

ological details, copies of measuring instruments and the like. It is comprehensive and complete It is written by using technical language, following a specified pattern

2. Popular Report

This type o report is designed for an audience of executives/administrators and other non-technical users. The reader is less concerned with methodological details, but more interested in studying quickly the major findings and conclusion. It should present broad facts, findings and recommendations. It must be interesting, simple and lucid. It must avoid all technical jargons and details at to the method of investigation. The style may be more journalistic but be precise and it should encourage rapid reading and quick comprehension . More headlines, underlining, pictures and graphs may be used.

3. Interim Report

When there is long time gap between data collection and the presentation of the results, the study may lose as significance and usefulness. To avoid such eventualities a short report, containing (a) the first results of the analysis or (2) the final outcome of the analysis of some aspects completely analysed is presented. Such a report is called interim report. This type of report required particularly when the study was undertaken for a sponsor; whose interest may lose it there is inordinate delay in giving a report. It helps the sponsor to take action without waiting for the full report.

4. Summary report

A summary report is prepared for the consumption of lay audience viz., general public it is written in non-technical and simple language. It is a short report of two or three pages. It contains a brief reference to the objective of the study, its major findings and their implications.

5. Research Abstract

Research Abstract is a short summary of the technical report. It is usually prepared by doctoral students on the even of submitting his thesis. It contains a brief presentation of the statement of the problem, the objectives of the study methods and techniques used and an over view of the report A brief summary of the results of the study may also be added.

6. Research Article

Research Article is designed for publication in a professional journal. It must be clearly written in concise and unambiguous language. It must be logically organisesd progressing from a statement of the problem and the purpose of study, through the analysis of evidence, to the conclusions and implications

Steps/Stages in report writing

1. Plan the project in advance, fix the target and final date of completing the report.

2. Prepare a layout of the structure of the report. Arrange the data, document, bibliography etc., in conformity with the structure of the report.

3. Prepare the outline for the report. The outline should be based on all main points and sub points.

4. Prepare a rough report of what one has done in his studies. He has to write down the procedure adopted by him in collecting the material, the techniques or analysis adopted by him, the broad findings and generalisations and suggestions. This forms a rough report.

5. Keep the rough report for few days for careful reading and then revising it on the basis of thinking and discussing with others. Expert guidance and experienced person's help can be sought for the purpose and revise accordingly.'

6. Rewrite the report on the basis of the revision made and corrections effected on the first report. Eliminate irrelevant aspects.

7. Prepare final bibliography. The bibliography is a list of books referred or consulted pertinent to the research

8. Write the final draft of the report 11 should be written in a concise and objective style and in simple language

Planning report writing

After the data analysis is over, planning stage begins. At this stage, the researcher deter lines various basic questions, viz., who says, what, to whom, in which way and with what effect, of the report.

1. The target audience.

The form and style of reporting and other aspects depend upon the type of the reader for whom the report *s intended. The target audience may be (a) academic /scientific community b) the sponsors of research or c) the general public. In each situation the form and content of the report would be different. For instance where the target audience is academic community, a technical type report will best serve the purpose. However where general public constitute the intended audience, 'popular' report has to be resorted to.

2. The communication characteristics of the audience.

The level of knowledge and understanding of the selected audience should be considered. The kind of language (scientific or journalistic), their interests etc., determine the scope, form and style of reporting.

3. The intended purpose

It may be for evaluation by experts for the award of a degree or diploma, for references by researches and fellow scientists or for implementation by a user/ organisation. It also determines the type of the report and its contents and form of presentation.

4. **The type of report**

The type may be technical, popular or summary; it is based on the intended use.

5. The scope of the report

The scope of the contents of the report is based on the type ol report land its intended purpose. For example, a research thesis or dissertation to be submitted for award of a degree or diploma should narrate the total research process and experience, the state of the problem, a review of review studies, objectives of the study, methodology, findings, conclusion and recommendations.

6. The style of reporting

It may be simple and clear or elegant and pompous; it is decided with reference to the target audience.

7. The format of the report should be designed as explained below. Outline/ table of contents should be prepared for each of the proposed chapters of the report. A outline lends cohesiveness and direction to report writing work.

Research Report Format (layout/ Structure /contents of a report)

A Research report contain three sections viz.,

I. Preliminaries

II. The Text

III. Reference Materials

I. The preliminaries

The preliminaries include the following.

1. The title page

Title page of a research report carries the title of a thesis, name of the candidate, name and designation of the supervisor, degree for which thesis is presented, name of facility and university, month and year the thesis is presented

2. Preface

Preface includes writer's purpose of the study, a brief resume of the background, scope and general nature of the research and acknowledgements., Acknowledgement recognize persons to whom the researcher is indebted for providing guidance and assistance during the study

3. Table of contents

Table of contents includes major divisions of thesis viz., introduction, chapters with subsections, bibliography, and appendix. It provides analytical over-view of the material included in study Respective page numbers are also given.

4. List of tables

List of tables gives numbers to different tables.

5. List of figures

List of figures gives numbers a different figures.

6. The text

It is the important part of a thesis. Researcher presents his argument here. It may of five components

1. Introduction:

It provides the reader with background information to grasping the study. It helps to identify the central issues addressed by the study, summarise previous research and provide specific reason for the particular study conducted. It introduces the reader to the study. It also contains definition of major concepts employed, reference made to their books etc

2. Research procedure

It explains the methodology by which the study carried out, basic design experimental manipulations, methods of data collection, questions asked, experience of interview etc. It also explains samples used who were subjects, number of subjects, how they were selected, generalisation from particular aspect etc

3. Conclusion

It contains z ascription of the data like means, standard deviation and statistical analysis done. It guides the redder through findings gives clear and complete information.

4. Summary

It should be concluded with brief summary, recalling the problem, procedure, major finding and major conclusions

5. References

References in the text part gives references to someone else's published work. It attempts to relate our study to the existing literature. It should give the name of author, year of publication, edition, page number etc

III Reference Materials

Reference materials include two components

1. Bibliography

The bibliography lists in alphabetical order all published and unpublished references Used by the writer in preparing the report All books articles and reports and other documents may be

presented in one common list in the alphabetical order of their authors. Alternatively, the bibliography may be classified into books, articles, reports and other documents and in each section relevant reference may be arranged in alphabetical order.

2. Appendices

The following documents are included in appendices

a) Copies of data collection, instruments like interview schedules or questionnaires

b) Technical details of sampling plan

c) Complex and long primary tables

d) Supporting documents and any other evidence that may be important as backup details for the report

Principles of writing

The writing of a research report is governed by certain principles / standard practices These are described below

1. Organisation of the report

The research report requires clear organization. Each chapter may be divided into two or more sections with appropriate headings and in each section margin headings and paragraph headings may be used to indicate subject shifts. A page should not be fully filled-in from top to bottom. Wider margins should be provided on both sides and on top and bottom as well.

2. Style

A research report is a formal presentation of an objective unbiased investigation, and hence, should be written at a formal level of Standard English. It does not require elegant word usage and allusion. It just need a plain discourse with accuracy, clarity, coherence, conciseness and readability.

a) Accuracy: The report should be factual with objective presentation Exaggeration and superlatives should be avoided.

b) Clarity: The presentation should be made by using familiar terms, common words and unambiguous statements

c) Coherence. Each sentence must be so linked with other sentences that the writer's thoughts move smoothly and naturally from one statement to the next.

d) Conciseness: The statements must be succinct and precise

e) Readability: It should be easily understandable. Technicalities should be translated into language understandable by the reader interested in the results of the study. The readability can be achieved by using active verbs, correct and exact names, references, facts and figures, simple words and sentences.

3. Unclear writings

To avoid unclear writings, the following aspects should be considered:

1. Avoid the jargon, pretentious and pompous style
2. Avoid offensive words eg. adding the suffix "wise to a noun, or adding 'size" to nouns/adjectives to make verbs.
3. Omit needless words that cause verbosity For eg., of instead of' a large number of say 'many' and the like.
4. Avoid superfluous phrases. For eg' authorities agree that.
5. Avoid abstract words and use the concrete words.
6. Avoid words that exaggerate such as stupendous, immeasurable, gigantic, awfully, dreadfully.
7. Avoid tautology, or repetition eg: ln the phrases, like 'joint partnership', return back', the word joint back are redundant and should be omitted.

4. Grammar, Spelling

Presentation should be free from spelling and grammatical errors. Each word must be spelled correctly. The rules of punctuation should be carefully observed. Standard practices for capitalising words in English should be followed when working *m* English or when quoting English titles. Principal words of titles and parts of specific works are capitalised. Do not *use* masculine nouns and pronouns when content refers to both genders.

5. Words and Numerals

There are certain conventions that determine how and when to use numbers such as:

Use percent symbol (%) only in tables and figures

Use numerals to express page, street, telephone number dates and quantities combined with abbreviations and symbols

Express reference to table and exhibit figure numbers numerically

6. Documentation

Every quotation used either direct or indirect should be acknowledged through a footnote.

7. Ellipses

Omissions in quoted matter are permitted if the original meaning is not altered. Such omission are to be indicated by the sign of ellipses.

8. Abbreviations

Do not abbreviate words in the text. Spell out them in full. This rule does not apply to materials included in the footnotes, appendices, and bibliographies, tables and figures where abbreviations are rather desirable.

Documentation: Footnotes and Bibliography

Documentation

The researcher should give credit for borrowed words, ideas, symbols or other forms of expression. Their sources should be stated in the text or footnotes.

There are two alternative modes for documenting sources of ideas and information.

1. Footnote's

2. References' - cited format

1. Footnotes:

Footnotes are of two kinds. Content and reference. Content notes contains explanatory materials. Reference notes serve as documentation of sources or as means for cross-references.

Purposes of Footnotes

1. To acknowledge indebtedness - To another writer whose passage is paraphrased or whose quotation is used.
2. To amplify/clarify the ideas or information presented in the text.
3. To establish the validity of evidence.
4. To refer the reader to further sources of information on the subject under discussion.
5. To give the original version of material that has been translated in the text.
6. To provide cross-reference to various parts of the thesis

Bibliography

The bibliography to a list of references relating to a topic or subject. It is located at the main body of the report. It contains all the information found in a first footnote relating to a work. It lists in alphabetical order references uses by the writer. The references in the bibliography are arranged alphabetically sometimes by topics, sometimes by geographical location or by some other plan.

Writing the Report

The researcher report needs several revisions and rewriting before reaching the final form. The researcher should arrange the following the detailed outlines for chapters, note cards

arranged in the order of chapters, source cards arranged in an alphabetical order, statistical tables, charts and results of analysis, each in separate sheets of paper and a good pen.

First Draft

In the first draft, the researcher should concentrate on substance ie., fullness of facts, as per the planned outline. The entire first draft work should be completed without any stop for editing.

Divisions

The first draft should be read carefully again and again and edited thoroughly and revised. Any writing improves upon revision. In revising the first draft, the attention should be given to form, language, readability, clarity and lucidity. With an open and critical mind, the researcher must correct, carve, cut, add and polish.

Final Stage

The final stage of the work consists of

A. Adding the following demerits to the report

(1) Title page (2) acknowledgement/preface (3) Table of contents

(4) List of tables and charts (5) Bibliography (6) Appendices

B. The final editing of the revised and completed report. In the final editing attention should be focused on the relationship between the original research questions and the report once more.

Typing the Report

The final manuscript of the report should be given for typing to a professional typist with experience in typing research report. The writer is expected to submit an accurate and acceptable draft to the typist. The final should be correct in all grammatical conventions, capitalisation, punctuation, spelling, compound words, hyphenation and paragraphing. The writer should give clear instructions on requirements of margins, word division, indents, documentation placement, spacing headings, tables, charts and quotations.

Briefing

Briefing involves an oral presentation of the lengthy complex report in a condensed summarised form. The presentation may take 15 to 30 minutes followed by questions and discussion.

The scope of briefing varies according to its situation and purpose In the case of a briefing before the executives of the sponsor organisation, the focus of presentation will be on the conclusions based on the findings and the recommendations. In an academic presentation, the focus will be on the entire research process in general and the methodology in particular and on the contribution of the study to the wealth of knowledge. The academic people are keenly interested in

knowing the problem formulation and conceptualization, sampling, methods of and tools for data collection, their validity and reliability and the plan of analysis and the reliability of the findings.

Evaluation of a Research Report

A research report may be evaluated or reviewed

When

a) A doctoral research thesis or dissertation submitted to a University for award of Ph.D Degree evaluated by a Board of Examiners consisting of a:ademic experts.

b) A critical analysis of research report, by research students, selected from the published/unpublished report in the university library or research abstracts published in journals

c) Research promotion bodies like ICSSR may evaluate the reports

Evaluation may be done about the following

a) The appropriatness of the title
b) Importance of the problem
c) Problem formulation
d) Review of related interacting and earlier studies
e) Soundness of methodology
f) Data analysis
g) Contribution or me study conclusions and recommendations
h) Presentation

REFERENCES

1. Goode, William J; Hatt, Raulk, "Methods in Social Research" McGraw Hill.
2. Gupta, Santhosh; "Research Methods", Deep and Deep publications. New Delhi.
3. Hair JR Joseph F; Bvsh Robert P; Ortinav, David, "Marketing Research", Tata Mc Graw Hill publishing Co., New Delhi.
4. Kolthari, C.R., "Research Methodology, Methods and Techniques", Wish w a Prakashan, New Delhi.
5. Krishnaswamy, O.R; "Methodology of Research in Social Sciences", Himalaya publishing House Mumbai.
6. Saravanavel, P "Research Methodology, Kitalmahal, Allahabad.
7. Paneerselvam. R, 'Research Methodology", Prentice Hall of India New Delhi.
8. Young, Pauline V . "Scientific Social Surveys and Research" Prentice Hall of India, New Delhi
9. Thakur, Devendra, Research Methodology in Social Sciences", Deep and Deep publications, Mumbai.
10. Trochin, William M.K., "Research Methods", Biztantra, New Delhi.