Lesson 1:	INTRODUCTION, DEFINITION & VALUE OF RESEARCH

The study of research methods provides you with the knowledge and skills you need to solve the problem and meet the challenges of a fast-paced decision-making environment.

What is Research? General image of the research is that it has something to do with the laboratory where scientists are supposedly doing some experiments. Somebody who is interviewing consumers to find out their opinion about the new packaging of milk is also doing research. Research is simply the process of finding solutions to a problem after through study and analysis of the situational factors. It is gathering information needed to answer a question, and thereby help in solving a problem. We do not do study in any haphazard manner. Instead we try to follow a system or a procedure in an organized manner.

What is the value of Research? The nature of research problems could vary. The researchers try to make use of their findings for **generating theories and models** that could be used for understanding human behavior and the functioning of different structures both at the micro (organizational) and macro (societal) level. Therefore, research may be considered as an *organized, systematic, data based, critical, objective, scientific inquiry or investigation into a specific problem*, undertaken with the purpose of finding answers or solutions to it.

The value of research for policy makers, planners, business managers, and other stakeholders is that it reduces uncertainty by providing information that improves the decision-making process. The decision making process associated with the development and implementation of a strategy involves four interrelated stages:

1. Identifying problems or opportunities;
2. Diagnosing and assessing problems or opportunities;
3. Selecting and implementing a course of action; and
4. Evaluating the course of action.

Identifying problems and solutions to the same problems is in fact applying the research findings to overcome an undesirable situation. Research helps in developing methodologies. By now we know that the researchers have to develop methodologies for carrying out the research. These methodologies are for the collection of data, data processing and data analysis. For the new researchers these methodologies are already available, most of the researchers just use these. Nevertheless, there is always a scope for improvement and certainly new methodologies are developed.

Lesson 2:	SCIENTIFIC METHOD OF RESEARCH & ITS SPECIAL FEATURES

Research produces knowledge which could be used for the solution of problems as well as for the generation of universal theories, principles and laws. But all knowledge is not science. The critical factor that separates scientific knowledge from other ways of acquiring knowledge is that it uses scientific approach.

Some sciences, such as the natural sciences deal with the physical and material world. Some other sciences involve the study of people – their beliefs, behavior, interactions, attitudes, institutions, and so forth. They are sometimes called *soft sciences*.

Science is a way to produce knowledge, which is based on truth and attempts to be universal. In other words science is a method, a procedure to produce knowledge i.e. discovering universalities/principles, laws, and theories through the process of observation and re-observation. Observation here implies that scientists use "sensory experiences" for the study of the phenomena. They use their five senses, which are possessed by every normal human being. They not only do the observation of a phenomenon but also repeat the observation, may be several times. The researchers do so because they want to be accurate and definite about their findings. Re-observation may be made by the same researcher at a different time and place or done by other professionals at some other time or place By repeating the observation, the researchers want to be definite and positive about their findings. Those who want to be definite and positive are often referred to as **positivists**. The researchers do not leave their findings into scattered bits and pieces. Rather the results are organized, systematized, and made part of the existing body of knowledge; and this is how the knowledge grows. All this procedure for the creation of knowledge is called a scientific method, whereby the consequent knowledge may be referred to as scientific knowledge. In this way *science* refers to both a system for producing knowledge and the knowledge produced from that system. Since the subject matters of the researchers differ, therefore, we have the diversification of different sciences: broadly natural or physical sciences and human sciences.

Important Characteristics of Scientific Method:

1. Empirical
2. Verifiable
3. Cumulative
4. Deterministic
5. Ethical and Ideological Neutrality
6. Statistical Generalization
7. Rationalism

1. Empirical: Scientific method is concerned with the realities that are observable through "sensory experiences." It generates knowledge which is verifiable by experience or observation. There are also realities which cannot be observed directly but the researchers have designed ways to observe these indirectly. Any reality that cannot be put to

"sensory experience" directly or indirectly (existence of heaven, the Day of Judgment, life hereafter, God's rewards for good deeds) does not fall within the domain of scientific method.

2. Verifiable: Observations made through scientific method are to be verified again by using the senses to confirm or refute the previous findings. Such confirmations may have to be made by the same researcher or others. Replicability in this way is an important characteristic of scientific method. Hence revelations and intuitions are out of the domain of scientific method.

3. Cumulative: Instead of reinventing the wheel the researchers take stock of the existing body of knowledge and try to build on it. The results are to be organized and systematized. A linkage between the present and the previous body of knowledge has to be established and that is how the knowledge accumulates.

4. Deterministic: Science is based on the assumption that all events have antecedent causes that are subject to identification and logical understanding. For the scientist, nothing "just happens" – it happens for a reason. The scientific researchers try to explain the emerging phenomenon by identifying its causes. The researcher tries to narrow down the number of reasons in such a way that some action could taken.

5. Ethical and Ideological Neutrality: The conclusions drawn through interpretation of the results of data analysis should be based on the facts of the findings derived from actual data, and not on our own subjective or emotional values. Researchers are human beings, having individual ideologies, religious affiliations, cultural differences which can influence the research findings. Any interference of their personal likings and dis-likings in their research can contaminate the purity of the data, which ultimately can affect the predictions made by the researcher. Therefore, one of the important characteristics of scientific method is to follow the principle of objectivity, uphold neutrality, and present the results in an unbiased manner.

6. Statistical Generalization: Generalisability refers to the scope of the research findings in one organizational setting to other settings. Obviously, the wider the range of applicability of the solutions generated by research, the more useful the research is to users. The more generalizable the research means the greater its usefulness and value. Here the use of statistics is very helpful. Statistics is device for comparing what is observed and what is logically expected. The use of statistics becomes helpful in making generalizations, which is one of the goals of scientific method.

7. Rationalism (Reason): Science is fundamentally a rational activity and the scientific explanation must make sense. Religion may rest on revelations, custom, or traditions, gambling on faith, but science must rest on logical reason. There are two distinct logical systems referred to as deductive logic and inductive logic. Inductive reasoning means from particular instances to general principles or from facts to theories and deductive reasoning means from the general to the particular or applying a theory to a particular case. "All men are mortal; Mahmood is man; therefore Mahmood is mortal."

Looking at the important features of scientific method one might say that there are **two power bases of scientific knowledge:** (1) empiricism i.e. sensory experiences or observation, and (2) rationalism i.e. the logical explanations for regularity. Finally it may be said that anybody who is following the scientific procedure of doing research is doing a scientific research; and the knowledge generated by such research is scientific knowledge.

Lesson 3:	**CLASSIFICATION OF RESEARCH**

Research comes in many shapes and sizes. Before a researcher begins to conduct a study, he or she must decide on a specific type of research. Good researchers understand the advantages and disadvantages of each type, although most end up specializing in one. For classification of research we shall look from four dimensions:

1. The purpose of doing research;
2. The intended uses of research;
3. How it treats time i.e. the time dimension in research; and
4. The research (data collection) techniques used in it.

The four dimensions reinforce (strengthen) each other.

1. Purpose of Doing Research: If we ask someone why he is conducting a study, we might get a range of responses: The purposes of research may be organized into three groups based on what the researcher is trying to accomplish either explore a new topic or describe a social phenomenon or explain why something occurs. Studies may have multiple purposes (e.g. both to explore and to describe) but one purpose usually dominates.

a. Exploratory/Formulative Research: You may be **exploring a new topic** or issue in order to learn about it. If the issue was new or the researcher has written little on it, you began at the beginning. This is called *exploratory research.* Exploratory research may be the first stage in a sequence of studies. **Initial research conducted to clarify the nature of the problem.** Exploratory research rarely yields definitive answers. It addresses the "what" question: There could be a number of goals of exploratory research.

Goals of Exploratory Research:

1. Become familiar with the basic facts, setting, and concerns;
2. Develop well grounded picture of the situation;

3. Develop tentative theories; generate new ideas, conjectures, or hypotheses;

For exploratory research, the researcher may use different sources for getting information like (1) experience surveys, (2) secondary data analysis, (3) case studies, and (4) pilot studies. A pilot study implies that some aspect of the research is done on a small scale. For this purpose focus group discussions could be carried out.

b. Descriptive Research: *Descriptive research* presents a picture of the specific details of a situation, social setting, or relationship. The major purpose of descriptive research, as the term implies, is to describe characteristics of a population or phenomenon. Descriptive research seeks to determine the answers to *who, what, when, where,* and *how* questions. Labor Force Surveys, Population Census, and Educational Census are examples of such research. Descriptive study offers to the researcher a profile or description of relevant aspects of the phenomena of interest. When we start to look at the relationship of the variables, then it may help in diagnosis analysis.

Goals of Descriptive Research

1. Describe the situation in terms of its characteristics i.e. provide an accurate profile of a group;

2. Present background information;

3. Create a set of categories or classify the information;

4. Focus on 'who,' 'what,' 'when,' 'where,' and 'how' but not why?

A great deal of social research is descriptive. Descriptive researchers use most data –gathering techniques – surveys, field research, and content analysis.

c. Explanatory Research: When we encounter an issue that is already known and have a description of it, we might begin to wonder *why* things are the way they are. The desire to know "why," to explain, is the purpose of *explanatory research*. It builds on exploratory and descriptive research and goes on to identify the reasons for something that occurs. Explanatory research looks for causes and reasons. For example, a descriptive research may discover that 10 percent of the parents abuse their children, whereas the explanatory researcher is more interested in learning *why* parents abuse their children.

Goals of Explanatory Research

1. Explain things not just reporting. Why? Elaborate and enrich a theory's explanation.

2. Determine the accuracy of the theory; test a theory's predictions or principle.

3. Extend a theory or principle to new areas, new issues, new topics:

4. Test a theory's predictions or principles

2. The Uses of Research: Some researchers focus on using research to advance general knowledge, whereas others use it to solve specific problems.

a. Basic Research: Basic research advances fundamental knowledge about the human world. It focuses on refuting or supporting theories that explain how this world operates, what makes things happen, why social relations are a certain way, and why society changes. Basic research is the source of most new scientific ideas and ways of thinking about the world. It can be exploratory, descriptive, or explanatory; however, explanatory research is the most common. Basic research generates new ideas, principles and theories, which may not be immediately utilized; though are the foundations of modern progress and development in different fields. Researchers at the center of the scientific community conduct most of the basic research.

b. Applied Research: Applied researchers try to solve specific policy problems or help practitioners accomplish tasks. Theory is less central to them than seeking a solution on a specific problem for a limited setting. Applied research is frequently a descriptive research, and its main strength is its immediate practical use. Applied research is conducted when decision must be made about a specific real-life problem.

c. Basic and Applied Research Compared: Both employ the scientific method to answer the questions at hand. The scientific community is the primary consumer of basic research. The consumers of applied research findings are practitioners such as teachers. The results of applied research are less likely to enter the public domain in publications. Applied and basic researchers adopt different orientations toward research methodology. Basic researchers emphasize high standards and try to conduct near-perfect research. Applied researchers make more trade-offs.

d. Types of Applied Research Practitioners use several types of applied research. Some of the major ones are:

i) Action research: The applied research that treats knowledge as a form of power and abolishes the line between research and social action. They also assume that ordinary people can become aware of conditions and learn to take actions that can bring about improvement.

***ii) Impact Assessment Research*:** Its purpose is to estimate the likely consequences of a planned change.

***iii) Evaluation Research*:** It addresses the question, "Did it work?" Evaluation research measures the effectiveness of a program, policy, or way of doing something. "Did the program work?" "Did it achieve its objectives?" Evaluation researchers use several research techniques (survey, field research).

Types of Evaluation Research **There are two types of evaluation research formative and summative.**

Formative evaluation is built-in monitoring or continuous feedback on a program used for program management.

Summative evaluation looks at final program outcomes.

3. The Time Dimension in Research: From the angle of time research could be divided into two broad types:

a. Cross-Sectional Research. In cross-sectional research, researchers observe at one point in time. Cross-sectional research is usually the simplest and least costly alternative. Its disadvantage is that it cannot capture the change processes. Cross-sectional research can be exploratory, descriptive, or explanatory, but it is most consistent with a descriptive approach to research.

b. Longitudinal Research. Researchers using longitudinal research examine features of people or other units at more than one time. It is usually more complex and costly than cross-sectional research but it is also more powerful, especially when researchers seek answers to questions about change.

Types of Longitudinal Research There are three types of longitudinal research: **time series, panel, and cohort**.

i. Time series research is longitudinal study in which the same type of information is collected on a group of people or other units across multiple time periods. One could track the characteristics of students registering in the course on Research Methods over a period of four years.

ii. The panel study is a powerful type of longitudinal research. In panel study, the researcher observes exactly the same people, group, or organization across time periods. It is a difficult to carry out such study. Tracking people over time is often difficult because some people die or cannot be located. Nevertheless, the results of a well-designed panel study are very valuable.

iii. A cohort analysis is similar to the panel study, but rather than observing the exact same people, a category of people who share a similar life experience in a specified time period is studied. The focus is on the cohort, or category, not on specific individuals. Commonly used cohorts include all people born in the same year (called birth cohorts), all people hired at the same time, all people retire on one or two year time frame, and all people who graduate in a given year. Unlike panel studies, researchers do not have to locate the exact same people for cohort studies.

4. Research (Data Collection) Techniques Used

Every researcher collects data using one or more techniques. The techniques may be grouped into two categories:

Quantitative (Collecting data in the form of numbers) The main quantitative techniques are: 1. Experiments 2. Surveys 3. Content Analysis 4. Using Existing Statistics	**Qualitative** (Collecting data in the form of words or pictures) The major qualitative techniques of research are: 1. Field Research 2. Case Study 3. Focus Group Discussion

Lesson 4:	**THEORY AND RESEARCH**

The **purpose of science** concerns the expansion of knowledge, the discovery of truth and to make predictions. **Theory building** is the means by which the basic researchers hope to achieve this purpose. **Prediction and understanding** are the two purposes of theory. Accomplishing the first goal allows the theorist to predict the behavior or characteristics of one phenomenon from the knowledge of another phenomenon's characteristics. The researcher would also like to understand the process. In most of the situations prediction and understanding the process go hand in hand i.e. to predict the phenomenon, we must have an explanation of why variables behave as they do. **Theories provide these explanations.**

Theory: As such theory is a systematic and general attempt to explain something like: Why do people commit crimes? How do the media affect us? Why do some people believe in God? Why do people get married? Why do kids play truant from school? How is our identity shaped by culture? Each of these questions contains a reference to some observed phenomenon. A suggested explanation for the observed phenomenon is theory. More formally, a **theory** is a coherent set of general propositions, used as principles of explanations of the apparent relationship of certain observed phenomena. A key element in this definition is the term **proposition.**

Concepts: Theory development is essentially a process of describing phenomena at increasingly higher levels of abstraction. **A concept (or construct)** is a generalized idea about a class of objects, attributes, occurrences, or processes that has been given a **name**. Such names are created or developed or constructed for the identification of the phenomenon, be it physical or non-physical. All these may be considered as empirical realities e.g. leadership, productivity, morale, motivation, inflation, happiness, banana.

Concepts are the building block of a theory. Concepts abstract reality. Moving up the **ladder of abstraction,** the basic concept becomes more abstract, wider in scope, and less amenable to measurement.

The scientific researcher operates at two levels:

1. On the abstract level of concepts (and propositions)
2. On the empirical level of variables (and hypotheses). At the empirical level we "experience" reality that is we observe the objects or events.

Theorists translate their conceptualization of reality into abstract ideas. Thus theory deals with abstraction. Things are

not the essence of theory; ideas are. Concepts in isolation are not theories. Only when we explain how concepts relate to other concepts we begin to construct theories.

Propositions: Concepts are the basic units of theory development. However, theories require an understanding of the relationship among concepts. Thus, once reality is abstracted into concepts, the scientist is interested in the relationship among various concepts. **Propositions are statements concerned with the logical relationships among concepts. A proposition explains the logical linkage among certain concepts by asserting a universal connection between concepts.** Investigating propositions requires that we increase our level abstract thinking. When we think about theories, we are at the highest level of abstraction because we are investigating the relationship between propositions. Theory is a network of propositions.

Theory and Research: Theory is confused with speculation and thus theory remains speculation until it is proved. When this proof is made, theory becomes fact**. Facts** are thought to be definite, certain, without question, and their meaning to be self evident.

When we look at what scientists actually do when engaged in research, it becomes clear (1) that theory and fact are not diametrically opposed, but inextricably intertwined; (2) that theory is not speculation; and (3) that scientists are very much concerned with both theory and fact (research). Hence research produces facts and from facts we can generate theories. **Theories are soft mental images** whereas **research covers the empirical world of hard, settled, and observable things**. In this way theory and fact (research) contribute to each other.

Role of Theory:

1. Theory as orientation
2. Theory as a conceptualization and classification
3. Theory in summarizing role
4. Theory predicts facts
5. Theory points gaps in knowledge

1. Theory as orientation: A major function of a theoretical system is that it narrows the range of facts to be studied.

2. Theory as a conceptualization and classification: Every science is organized by a structure of concepts which refer to major processes and objects to be studied. It is the relationship between these concepts which are stated in "the facts of science."

3. Theory in summarizing role: A further task which theory performs is to summarize concisely what is already known about the object of study. These summaries may be divided into two simple categories: (1) empirical generalizations, and (2) systems of relationships between propositions.

4. Theory predicts facts: If theory summarizes facts and states a general uniformity beyond the immediate observation, it also becomes a prediction of facts. This prediction has several facets (situations). The most obvious is the extrapolation from the known to the unknown.

5. Theory points gaps in knowledge: Since theory summarizes the known facts and predicts facts which have not been observed, it must also point to areas which have not yet been explored. Theory also points to gaps of a more basic kind. While these gaps are being filled, changes in the conceptual scheme usually occur.

Role of Research (Facts):

1. Facts initiate theory
2. Facts lead to the rejection and reformulation of existing theory
3. Facts redefine and clarify theory

Theory and fact are in constant interaction. Developments in one may lead to developments in the other. Theory, implicit or explicit, is basic to knowledge and even perception. Theory is not merely a passive element. It plays an active role in the uncovering of facts. We should expect that "fact" has an equally significant part to play in the development of theory. Science actually depends upon a continuous stimulation of fact by theory and of theory by fact.

1. Facts (Research) initiate theory: Many of the human interest stories in the history of science describe how a striking fact, sometimes stumbled upon, led to important theories. This is what the public thinks of as a "discovery."

2. Facts (Research) lead to the rejection and reformulation of existing theory: Facts/Research do not completely determine theory. Any theory must adjust to facts and is rejected or reformulated if they cannot be fitted into its structure.

3. Facts redefine and clarify theory: Usually the scientist has investigated his/her problem for a long time prior to actual field or laboratory test and is not surprised by his/her results. It is rare that he/she finds a fact that simply does not fit prior theory. New facts that fit the theory will always redefine the theory, for they state in detail what the theory states in very general terms.

Lesson 5:	**CONCEPTS**

Concept: Things we observe are the observable realities, which could be physical or abstract. For purposes of identification of reality we try to give a name to it. By using the name we communicate with others and over time it becomes part of our language.

A concept is a generalized idea about a class of objects, attributes, occurrences, or processes that has been given a name. In other words a concept is an idea expressed as a symbol or in words. Natural science concepts are often expressed in symbolic forms. Most social science concepts are expressed as words.

Concepts are an Abstraction of Reality: Concepts are everywhere, and you use them all the time. Height is simple concept form everyday experience. What does it mean? It is easy to use the concept of height, but describing the concept itself is difficult. It represents an abstract idea about physical reality, or **an abstraction of reality**. The concepts stand for phenomenon not the phenomenon itself; hence it may be called an abstraction of empirical reality.

Degree of Abstraction: Concepts vary in their level of abstraction. They are on a continuum from the most concrete to the most abstract. The organization of concepts in sequence from the most concrete and individual to the most **general** indicates the degree of abstraction**.** Moving up the ladder of abstraction, the basic concept becomes more abstract, wider in scope, and less amenable to measurement.

Sources of Concepts: Everyday culture is filled with concepts. We borrow concepts from everyday culture; though these to be refined. We create concepts from personal experiences, creative thought, or observation. The classical theorist originated many concepts like family system, gender role, socialization, self-worth, frustration, and displaced aggression. We also borrow concepts from sister disciplines.

Importance of Concepts: Social science concepts form a specialized language i.e. *jargon (special words and phrases which are used by particular groups of people).* Specialists use jargon as a short hand way to communicate with one another. Most fields have their own jargon. Physicians, lawyers, engineers, accountants, plumbers, and auto mechanics all have specialized languages. They use their jargon to refer to the ideas and objects with which they work.

Identification of concepts is necessary because we use concepts in hypothesis formulation. Here too one of the **characteristics of a good hypothesis** is that it should be conceptually clear.

Definitions: Confusion about the meaning of concepts can destroy a research study's value without the researcher or client even knowing it. If words have different meanings to the parties involved, then they are not communicating on the same wave-length. Definitions are one way to reduce this danger.

Dictionary Definitions: Researchers must struggle with two types of definitions. In the more familiar dictionary, a concept is defined with synonyms. These circular definitions may be adequate for general communication but not for research. **Dictionary definitions are also called conceptual or theoretical or nominal definitions.**

Operational Definition: A concept must be made operational in order to be measured. **An operational definition gives meanings to a concept by specifying the activities or operations necessary to measure it**. An operational definition specifies what must be done to measure the concept under investigation. It is like a manual of instruction or a recipe: do such-and-such in so-and-so manner. Operational definition is also called a *working definition* stated in terms of specific testing or measurement criteria.

Lesson 6:	**VARIABLES AND TYPES OF VARIABLES**

Types of concepts: There are two types of concepts: those that refer to a fixed phenomenon and those that vary in quantity, intensity, or amount (e.g. amount of education). The second type of concept and measures of the concept are variables.

Variable: **Variable is central idea in research. Simply defined, variable is a concept that varies. A variable is defined as anything that varies or changes in value.** Variables take on two or more values. Because variable represents a quality that can exhibit differences in value, usually magnitude or strength, it may be said that a variable generally is anything that may assume different numerical or categorical values. For example gender is a variable; it can take two values: male or female. Marital status is a variable; it can take on values of never married, single, married, divorced, or widowed. Family income is a variable; it can take on values from zero to billions of Rupees. A person's attitude toward women empowerment is variable; it can range from highly favorable to highly unfavorable. In this way the variation can be in quantity, intensity, amount, or type; the examples can be production units, absenteeism, gender, religion, motivation, grade, and age.

Types of Variable:

1. **Continuous and Discontinuous variables.**
2. **Dependent and Independent Variables.**
3. **Moderating Variables.**
4. **Intervening Variables.**
5. **Extraneous Variables.**

1. Continuous and Discontinuous variables: Variables have different properties and to these properties we assign numerical values. **If the values of a variable can be divided into fractions then we call it a *continuous variable***. Such a variable can take infinite number of values. **Income, temperature, age or a test score are examples of continuous variables.** These variables may take on values within a given range or, in some cases, an infinite set. **Any variable that has a limited number of distinct values and which cannot be divided into fractions, is a**

discontinuous variable. Such a variable is also called as categorical variable or classificatory variable, or *discrete variable*. Religion is an example of discrete/categorical/classificatory/discontinuous variables.

Dichotomous Variables: Some variables have only two values, reflecting the presence or absence of a property: employed-unemployed or male-female have two values. These variables are referred to as **dichotomous**.

2. Dependent and Independent Variables: Researchers who focus on causal relations usually begin with an effect, and then search for its causes. The cause variable or the one that identifies forces or conditions that act on something else is the i*ndependent variable*. The variable that is the effect or is the result or outcome of another variable is the *dependent variable* (also referred to as outcome variable or effect variable). The independent variable is "independent of" prior causes that act on it, whereas the dependent variable "depends on" the cause. Dependent variable is also referred to as *criterion* variable. In statistical analysis a variable is identified by the symbol (X) for independent variable and by the symbol (Y) for the dependent variable.

Independent Variable	Dependent Variable
Presumed cause	Presumed effect
Stimulus	Response
Predicted from…	Predicted to…
Antecedent	Consequence
Manipulated	Measured outcome
Predictor	Criterion

The **success of the new product** is the *independent variable* and **stock market price** the *dependent variable*.

3. Moderating Variables: A moderating variable is one that has a strong *contingent* effect on the independent variable-dependent variable relationship. That is, the presence of a third variable (the moderating variable) modifies the original relationship between the independent and the dependent variable.

4. Intervening Variables: A basic causal relationship requires only independent and dependent variable. A third type of variable, the *intervening variable*, appears in more complex causal relationships. It comes between the independent and dependent variables and shows the link or mechanism between them. Advances in knowledge depend not only on documenting cause and effect relationship but also on specifying the mechanisms that account for the causal relation. In a sense, the intervening variable acts as a dependent variable with respect to independent variable and acts as an independent variable toward the dependent variable.

5. Extraneous Variables: An almost infinite number of extraneous variables (EV) exist that might conceivably affect a given relationship. Some can be treated as independent or moderating variables, but most must either be assumed or excluded from the study. Such variables have to be identified by the researcher. In order to identify the true relationship between the independent and the dependent variable, the effect of the extraneous variables may have to be controlled.

Lesson 7:	**HYPOTHESIS TESTING & CHARACTERISTICS**

HYPOTHESIS: Propositions are statements about variables considered to be true or false. **A proposition that can be verified to determine its reality is a hypothesis.** Therefore one can say that a hypothesis is a verifiable counterpart of a proposition. **A hypothesis may be defined as a logically conjectured relationship between two or more variables, expressed in the form of a testable statement.** Relationship is proposed by using a strong logical argumentation.

Let us look at some of the hypotheses:

1. Officers in my organization have higher than average *level of commitment* (variable).

2. Level of job commitment of the officers is associated with their level of efficiency.

3. *Level of job commitment* of the officers is positively associated with their *level of efficiency.*

4. The higher the *level of job commitment* of the officers the lower their *level of absenteeism.*

These are testable propositions. First hypothesis contains only one variable. The second one has two variables which have been shown to be associated with each other but the nature of association has not been specified (non-directional relationship). In the third hypothesis we have gone a step further where in addition to the relationship between the two variables, the direction of relationship (positive) has also been given. In the fourth hypothesis *level of efficiency* has been replaced with *level of absenteeism*, the direction of relationship between the two variables has been specified (which is negative). In the following discussion you will find these hypotheses being quoted as part of the examples.

Types of Hypotheses:

I. Descriptive Hypothesis: Descriptive hypothesis **contains only one variable** thereby it is also called as **univariate hypothesis**. The first hypothesis contains only one variable. For example a question can be: What is the level of commitment of the officers in your organization?

II. Relational Hypothesis: These are the propositions that **describe a relationship between two variables**. The relationship could be non-directional or directional, positive or negative, causal or simply co relational. While stating the relationship between the two variables, if the terms of positive, negative, more than, or less than are used then such hypotheses are directional because the direction of the relationship between the variables (positive/negative) has been

indicated (see hypotheses 3 and 4). These hypotheses are relational as well as directional. The directional hypothesis is the one in which the direction of the relationship has been specified. Non-directional hypothesis is the one in which the direction of the association has not been specified. The relationship may be very strong but whether it is positive or negative has not been postulated (see hypothesis 2).

Co relational Hypotheses State merely that the variables occur together in some specified manner without implying that one causes the other. For example: *Level of job commitment* of the officers is positively associated with their *level of efficiency.* Here we do not make any claim that one variable causes the other to change. That will be possible only if we have control on all other factors that could influence our dependent variable.

Explanatory (causal) hypotheses Imply the existence of, or a change in, one variable causes or leads to a change in the other variable.

III. Null Hypothesis: It is used for testing the hypothesis formulated by the researcher. Researchers treat evidence that supports a hypothesis differently from the evidence that opposes it. They give negative evidence more importance than to the positive one. It is because the negative evidence tarnishes the hypothesis. It shows that the predictions made by the hypothesis are wrong. **The null hypothesis simply states that there is *no relationship* between the variables or the relationship between the variables is "zero." That is how symbolically null hypothesis is denoted as "H0".** For example: H0 = There is no relationship between the *level of job commitment* and the *level of efficiency*.

***IV.* Alternative Hypothesis: The alternative (to the null) hypothesis simply states that there is a relationship between the variables under study.** In our example it could be: there is a relationship between the *level of job commitment* and the *level of efficiency.* Not only there is an association between the two variables under study but also the relationship is perfect which is indicated by the number "1". **Thereby the alternative hypothesis is symbolically denoted as "H1".** It can be written like this: H1: There is a relationship between the *level of job commitment* of the officers and their *level of* efficiency.

***V.* Research Hypothesis: Research hypothesis is the actual hypothesis formulated by the researcher which may also suggest the nature of relationship** i.e. the direction of relationship. In our example it could be: *Level of job commitment* of the officers is positively associated with their *level of efficiency.*

The Role of the Hypothesis: In research, a hypothesis serves several important functions:

1. It guides the direction of the study.
2. It identifies facts that are relevant and those that are not.
3. It suggests which form of research design is likely to be the most appropriate.
4. It provides a framework for organizing the conclusions of the findings:

The Characteristics of a Testable Hypothesis

1. Hypothesis must be conceptually clear.
2. Hypothesis should have empirical referents
3. Hypothesis must be specific.
4. Hypothesis should be related to available techniques of research.
5. Hypothesis should be related to a body of theory.

Lesson 8:	REVIEW OF LITERATURE

LITERATURE REVIEW: A literature review is based on the assumption that knowledge accumulates and that we learn from and build on what others have done. Scientific research is a collective effort of many researchers who share their results with one another and who pursue knowledge as a community. Today's studies build on those of yesterday. Researchers read studies to compare, replicate, or criticize them for weaknesses.

GOALS OF A LITERATURE REVIEW: The goals of review are:

1. To demonstrate a familiarity with a body of knowledge and establish credibility.
2. To know the path of prior research and how a current research project is linked to it.
3. To integrate and summarize what is known in an area.
4. To learn from others and stimulate new ideas.
5. Identification of variables.
6. Helps in developing theoretical framework.

TYPES OF REVIEWS: There are six types of review:

1. SELF-STUDY REVIEWS increase the reader's confidence.

2. CONTEXT REVIEWS place a specific project in the big picture. One of the goals of review is creating a link to a developing body of knowledge. This is a background or context review.

3. HISTORICAL REVIEW traces the development of an issue over time. Researchers conduct historical review only on the most important ideas in a field.

4. THEORETICAL REVIEWS compare how different theories address an issue. It presents different theories that purport to explain the same thing then evaluates how well each accounts for findings. It sometimes forms a hybrid – the historical theoretical review.

5. INTEGRATIVE REVIEW summarizes what is known at a point in time. It presents the current state of knowledge and pulls together disparate research reports in a fast growing area of knowledge.

6. METHODOLOGICAL REVIEWS point out how methodology varies by study. In it researcher evaluates the methodological strength of past studies.

WHERE TO FIND THE RESEARCH LITERATURE

- Computer: on line systems.
- Scholarly journals.
- Books – containing reports of original research, or collection of research articles. READERS or Book of Readings.
- Dissertations.
- Government documents.
- Policy reports and presented papers.
- Bibliographic indexes.

Lesson 9:	CONDUCTING A SYSTEMATIC LITERATURE REVIEW

DEFINE AND REFINE A TOPIC: Prior to the review of literature have good ideas of the topic of your interest. Therefore begin a literature review with a clearly defined, well focused research question and a plan. Often a researcher will not finalize a specific research question for a study until he or she has reviewed the literature. The review helps bring greater focus to the research question.

DESIGN A SEARCH: The key is to be careful, systematic, and organized. Set parameters on your search; how much time you will devote to it, how far back in time you will look, the maximum number of research reports you will examine, how many libraries you will visit, and so forth.

LOCATE RESEARCH REPORTS: Locating research reports depends on the type of report or "outlet" of research being searched.

ARTICLES IN SCHOLARLY JOURNALS: Most social and behavioral research is likely published in scholarly journals. These journals are the vehicles of communication in science. Another resource for locating articles is the computerized literature search. Researchers organize computerized searches in several ways – by author, by article title, by subject, or by keyword. A *keyword* is an important term for a topic that is likely to be found in a title. You will want to use six to eight keywords in most computer based searches and consider several synonyms.

SCHOLARLY BOOKS:. A person has to be well conversant (aware) with the library cataloging system.

DISSERTATIONS (گفتگو): A publication called Dissertation Abstract International lists most dissertations. It organizes dissertations by broad subject category, author, and date.

GOVERNMENT DOCUMENTS:

POLICY REPORTS AND PRESENTED PAPERS:

WRITE THE REVIEW: A literature review requires planning and clear writing, which requires lot of rewriting. Keep your purposes in mind when you write, and communicate clearly and effectively. To prepare a good review, read articles and other literature critically. Skepticism (uncertainty) is the norm (type) of science.

WHAT DOES A GOOD REVIEW LOOK LIKE? The author should communicate a review's purpose to the reader by its organization. The right way to write a review is to organize common findings or arguments together. A well accepted approach is to address the most important ideas first, to logically link statements or findings, and to note discrepancies or weaknesses in the present.

YOUR AUDIENCE: Professional writers say: Always know for whom are you writing. This is because communication is more effective when it is tailored to a specific audience. You should write research report differently depending on whether the primary audience is the instructor, students, professional colleagues, practitioners, or the general public.

Lesson 10:	THEORETICAL FRAMEWORK

THEORETICAL FRAMEWORK: A theoretical framework is conceptual model of how one theorizes or makes logical sense of the relationships among several factors that have been identified as important to the problem under study. These factors which may also be called as variables may have been identified through such processes as interviews with informants, observations, and literature survey. **The theoretical framework discusses the interrelationships among the variables that are considered to be integral to the dynamics of the situation being investigated**. From the theoretical framework, then, testable hypotheses can be developed to examine whether theory formulated is valid or not. The hypothesized relationships can thereafter be tested through appropriate statistical analysis. Hence **the entire research rests on the basis of the theoretical framework**.

There is a relationship between the literature survey and the theoretical framework whereby the former provides a solid foundation for developing the latter. **Literature survey helps in the identification of the elevant variables and the theoretical framework elaborates the relationships among the variables**. The literature survey sets the stage for a good theoretical framework.

SPECIFICALLY A THEORETICAL FRAMEWORK:

• Elaborates the relationship among the variables.
• Explains the logic underlying these relationships.
• Describes the nature, and direction of the relationships.

There are some essential features that have to be taken into consideration. These features may be called as **components of a theoretical framework.**

THE COMPONENTS OF THE THEORETICAL FRAMEWORK: A good theoretical framework identifies and labels the important variables in the situation that are relevant to the problem identified. It logically describes the interconnections among these variables. The relationships among the independent variables, the dependent variable(s), and if applicable, the moderating and intervening variables are elaborated. The elaboration of the variables in the theoretical framework addresses the issues of why or how we expect certain relationships to exist, and the nature and direction of the relationships among the variables of interest. At the end, the whole discussion can be portrayed in a schematic diagram.

SIX BASIC FEATURES THAT SHOULD BE INCORPORATED IN ANY THEORETICAL FRAMEWORK:

1. Make an inventory of variables.
2. Specify the direction of relationship
3. Give a clear explanation of why we should expect the proposed relationships to exist
4. Make an inventory of propositions:
5. Arrange these propositions in a sequential order:
6. Schematic diagram of the theoretical model be given:

1. MAKE AN INVENTORY OF VARIABLES.

The researcher makes *an inventory of relevant variables*. The variables considered relevant to the study should be clearly identified and labeled in the discussion.

2. SPECIFY THE DIRECTION OF RELATIONSHIP: If the nature and direction of relationship can be theorized on the basis of the findings of previous research then there should be an indication in the discussion as to whether the relationship should be positive or negative.

3. GIVE A CLEAR EXPLANATION OF WHY WE SHOULD EXPECT THE PROPOSED RELATIONSHIPS TO EXIST. There should be clear explanation of why we would expect these relationships to exist. The arguments could be drawn from the previous research findings. The discussions should state how two or more variables are related to one another.

4. MAKE AN INVENTORY OF PROPOSITIONS: Stipulation of logical relationship between any two variables means the formulation of a proposition. If such relationships have been proposed between different variables, it will result in the formulation of a number of propositions. List all such a collection of propositions as *an inventory of propositions.* Each proposition is backed up by strong theoretical argumentation.

5. ARRANGE THESE PROPOSITIONS IN A SEQUENTIAL ORDER: One proposition generates the next proposition, which generates the next following proposition, which in turn generates the next following proposition, and so on. This is an axiomatic way of the derivation of propositions. Resultantly it will provide us a sequentially arranged set of propositions which are interlinked and interlocked with each other.

6. SCHEMATIC DIAGRAM OF THE THEORETICAL MODEL BE GIVEN: A schematic diagram of the theoretical framework should e given so that the reader can see and easily comprehend the theorized relationships.

Lesson 11:	**PROBLEM DEFINITION AND RESEARCH PROPOSAL**

The research process consists of a number of steps. The first step in any research is selecting the topic, which could start from the broad area of interest. There is no set formula for the identification of a topic of research. The best guide is to conduct research on something that interest you.

TECHNIQUES FOR NARROWING A TOPIC INTO A RESEARCH QUESTION :

1. EXAMINE THE LITERATURE: Published articles are an excellent source of ideas for research questions.

2. TALK OVER IDEAS WITH OTHERS: Ask people who are knowledgeable about the topic for questions about it that they have thought of. Seek out those who hold opinions that differ from yours on the topic and discuss possible research questions with them.

3. APPLY TO A SPECIFIC CONTEXT: Focus the topic onto a specific historical period or time period. Narrow the topic to a specific society or geographic unit. Consider which subgroups or categories of people/units are involved and whether there are differences among them.

4. DEFINE THE AIM OR DESIRED OUTCOME OF THE STUDY: Will the research question be for an exploratory, explanatory, or descriptive study? Will the study involve applied or basic research?

FROM THE RESEARCH QUESTION TO HYPOTHESES: Tentative answers to the research question help in the identification of variables that could be used as explanatory factors for building up the argumentation in the development of propositions relevant to the topic.

PROBLEM DEFINITION: After the interviews and the literature review, the researcher is in a position to narrow down the problem from its original broad base and define the issues of concern more clearly. It is critical that the focus of further research be unambiguously identified and defined. **Problem definition or problem statement is a clear, precise, and succinct statement of the question or issue that is to be investigated with the goal of finding an answer or solution.**

SPONSORED RESEARCHES: There might be some symptoms or the dangerous part of many business problems that are neither visible to, nor understood by business managers. These symptoms are the management dilemmas (difficult situations) which have to be translated into management question and then into research question(s). The management may hire the services of research specialists to do this assignment. As a result the management dilemmas get identified and delineated in the *Terms of Reference*, and consultants may be engaged to carry out the study. In such situations many of the steps (review of literature, theoretical framework, and hypotheses).

THE RESEARCH PROPOSAL: A research *proposal* is a document that presents a plan for a project to reviewers foe evaluation. It can be a supervised project submitted to instructors as part of an educational degree (e.g. a Master's thesis or a Ph.D. dissertation) or it can be a research project proposed to a funding agency. Its purpose is to convince reviewers that the researcher is capable of successfully conducting the proposed research project. The proposal is just like a research report, but it is written before the research project begins. A proposal describes the research problem and its importance, and gives a detailed account of the methods that will be used and why they are appropriate. A proposal for quantitative research has most of the parts of a research report: a title, an abstract, a problem statement, a literature review, a method or design section, and a bibliography. It lacks results, discussion, and conclusions section. The proposal has a plan for data collection and analysis. It frequently includes a schedule of the steps to be undertaken and an estimate of the time required for each step. Proposals usually include curriculum vitae, letters of support from other researchers, and record if past research.

Research Proposal Sections

Introduction

- Background of the study
- Objectives
- Significance

Research Design

- Data collection technique (survey, experiment, qualitative technique)
- Population
- Sample
- Tool of data collection
- Data Gathering
- Data processing and analysis

Report writing

Budget

Time Schedule

Team of Researchers

Lesson 12:	**THE RESEARCH PROCESS**

THE RESEARCH PROCESS: Research task is usually treated as a sequential process involving several clearly defined steps. No one claims that research requires completion of each step before going to the next. Recycling, circumventing, and skipping occur. Some steps are begun out of sequence, some are carried out simultaneously, and some may be omitted. Despite these variations, the idea of sequence is useful for developing a project and for keeping the project orderly as it unfolds. Various approaches suggest somewhat different steps – ranging from five steps to eleven steps. The variation may be due to purposes, and methods used by the researches, though some researchers may combine some of the steps. Also some writers may portray the same steps in a linear way; others may put them in a cyclical form.

RESEARCH PROCESS STEPS

1. **Broad Problem Area**
2. **Preliminary Data Collection**
3. **Problem Definition**
4. **Theoretical Framework**
5. **Generation of Hypothesis**
6. **Research Design**
7. **Data Collection, Data Processing, and Analysis**
8. **Testing the Hypotheses**
9. **Report Writing**

1. Broad Problem Area: The process begins with a researcher selecting a *topic* – a general area of study or issue such as divorce, crime, aging, marketing, or powerful elites. A topic appears to be too broad for conducting research. The specific issues that need to be researched within the situation may not be identified at this stage.

2. Preliminary Data Collection: This step may be considered as part of the **exploratory** research. An exploration typically begins with a search for published data and studies. Such sources can provide secondary data which becomes part of the background information (about the organization, groups of people, context of the issue).

3. Problem Definition: After having discussions with the professionals as well as with the persons to whom the issue relates, and the review of literature, the researcher is in a position to narrow down from its original broad base and define the issue clearly. Translate the broad issue into a research question.

4. Theoretical Framework: Consultations with the informants and professionals, and the review of literature should have helped in the identification of different factors that are considered to be relevant to the topic. The researcher has to make logical relationship among several factors identified earlier. This will help in the delineation of the theoretical framework. The theoretical framework discusses the interrelationships among the variables. Developing such a conceptual framework helps to postulate or hypothesize and test certain relationships.

5. Generation of Hypotheses: Once we have identified the important variables relevant to an issue and established the logical reasoning in the theoretical framework, we are in a position to test whether the relationships that have been theorized do in fact hold true. By testing these relationships scientifically, we are in a position to obtain reliable information to determine the relationship among the variables. The results of these tests offer us part of the answers to the formulated research questions, whether these relate basic research or to applied research.

6. Research Design: Research design is a master plan specifying the methods and procedures for collecting and analyzing the needed information. It is a framework or the blueprint that plans the action for research project.

7. Data Collection, Data Processing, and Analysis: Data collection is integral part of the research design, though we are dealing it separately. Data collection is determined by the research technique selected for the project. Data can be collected in a variety of ways, in different settings – field or lab – and from different sources. It could include i*nterviews* – face to face interviews, telephone interviews, computer-assisted interviews, and interviews through electronic media; *questionnaires* that either personally administered, sent through mail, or electronically administered; *observation* of individuals and events which could be participant or non participant.

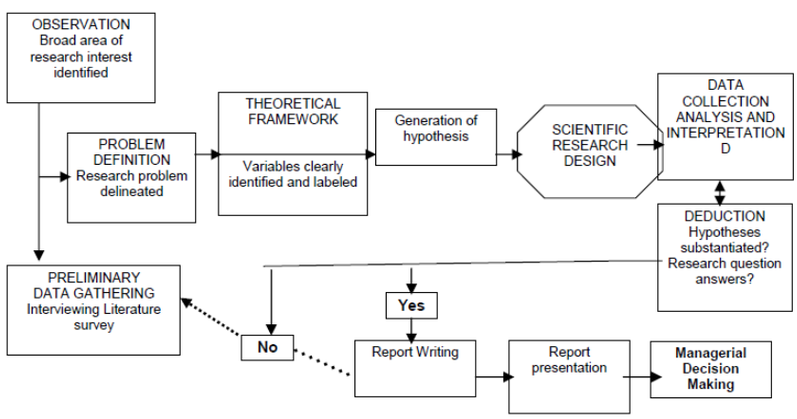
Once the fieldwork has been completed, the data must be converted into a format that will answer the research questions and or help testing the hypotheses. Data processing generally begins with the editing and coding of the data.

Analysis is the application of reasoning to understand and interpret the data that have been collected. The appropriate analytical technique is to be determined by the research design, and the nature of the data collected.

8. Testing the Hypotheses / Answering the Research Questions The analysis and interpretation of the data shall be the means to testing the formulated hypotheses as well as finding answers to the research questions.

9. Report Writing: The research report should communicate the research findings effectively. All too often the report is a complicated statement of the study's technical aspects and sophisticated research methods. The research report becomes a historical document, a record that may be referred to in later studies. In case of a dissertation the Universities have some standardized styles which have to be followed. Similarly the research papers have to be prepared in accordance with the format specified by the professional journals.

The Research Process



Surveys: The most common method of generating primary data is through surveys. **Survey is a research technique in which information is gathered from a sample of people using a questionnaire.** Research investigators may choose to contact the respondents in person, by telephone, by mail, or on the internet. Each of these techniques has advantages and disadvantages. The researcher's task is to choose the most appropriate one for collecting the information needed.

Observation techniques: **O**bservation can be non participant or participant. In many situations the objective of a research project is merely to record what can be observed.

Communication analysis: **It is also called content analysis** which means gathering and analyzing the content of the text. The content refers to words, meanings, pictures, symbols, ideas, themes, or any message that can be communicated. The text is anything written, visual, or spoken that serves as a medium of communication. It includes books, newspapers, advertisements, speeches, official documents, films or videotapes, photographs, articles of clothing, or works of art.

Case study: **It is an in-depth analysis of a unit** which could be an individual person, a couple, a group, or an organization. It is more like a clinical analysis in retrospect; starting from the effect and tracing the reasons back in time. The researcher takes the history of the situation and makes use of any other relevant information about the case to identify the factors leading to the present situation.

Focus group discussions: It is a discussion of an issue by 6-12 persons with a moderator for 1-2 hours. The issue can be a public concern, a product, a television program, a political candidate, or a policy. **Focus groups are useful in exploratory research or to generate new ideas for hypotheses, and the interpenetration of results**. It produces qualitative information which may compliment the quantitative data.

Lesson 13:	ETHICAL ISSUES IN RESEARCH

ETHICAL ISSUES IN RESEARCH **Ethics are norms (نمونہ) or standards of behavior that guide moral choices about our behavior and our relationships with others**. The goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from research activities.

GOAL: To ensure that no one is harmed or suffers adverse consequences from research activities

UNETHICAL ACTIVITIES

- Violating nondisclosure agreements.
- Breaking respondent confidentiality.
- Misrepresenting results.
- Deceiving people.
- Invoicing irregularities.
- Avoiding legal liability.

ETHICAL ISSUES

- Remain to be issues.
- Local norms suggest what ought to be done under the given circumstances.
- Codes of ethics developed to guide researchers and sponsors.
- Review Boards and peer groups help sorting out ethical dilemmas.

ANTICIPATE(پیش کرنا) ETHICAL (اخلاق) DILEMMAS(الجھاؤ)

- Adjust the design, procedures, and protocols accordingly.
- Research ethics require personal integrity of the researcher, the project manager, and research sponsor.

PARTIES IN RESEARCH

- Mostly three parties:
- The researcher
- The sponsoring client (user)
- Each party expects certain rights and feels certain obligations.
- The respondent (subject)
- Interaction requires ethical questions.

GENERAL RIGHTS AND OBLIGATIONS OF PARTIES CONCERNED: In most research situations, three parties are involved: the *researcher*, the *sponsoring client (user)*, and the *respondent (subject)*. The interaction of each of these parties with one or both of the other two identifies a series of ethical questions. Consciously or consciously, each party expects certain rights and feels certain obligations towards the other parties.

ETHICAL TREATMENT OF PARTICIPANTS: The researcher should follow three guidelines;

1. Explain study benefits.
2. Explain respondent rights and protections.
3. Obtain informed consent.

Lesson 14:	ETHICAL ISSUES IN RESEARCH (CONT.)

DECEPTION (دھوکا) : Deception occurs when the respondents are told only part of the truth or when the truth is fully compromised. Some believe this should never occur. Others suggest two reasons for deception: (1) to prevent biasing مائلthe respondents before the survey or experiment and (2) to protect the confidentiality of a third party (e.g. the sponsor). Deception should not be used in an attempt to improve response rates.

INFORMED CONSENT: Securing informed consent from respondents is a matter of fully disclosing the procedures of the proposed survey or other research design before requesting permission to proceed with the study. There are exceptions that argue for a signed consent form. In situations where respondents are intentionally or accidentally deceived, they should be debriefed once the research is complete.

DEBRIEFING (تفشیش): It involves several activities following the collection of data:

- Explanation of any deception.
- Description of the hypothesis, goal, or purpose of the study.

• Post study sharing of the results.
• Post study follow-up medical or psychological attention.
Debriefing usually includes a description of the hypothesis being tested and the purpose of the study.

RIGHTS TO PRIVACY All individuals have right to privacy and researchers must respect that right. The privacy guarantee is important not only to retain validity of the research but also to protect respondents. The researcher protects the confidentiality in several ways;
• Obtaining signed nondisclosure documents.
• Restricting access to respondent identification.
• Revealing respondent information only with written consent.
• Restricting access to data instruments where the respondent is identified.
• Nondisclosure of data subsets.

PRIVACY IS MORE THAN CONFIDENTIALITY A **right to privacy** means one has the right to refuse to be interviewed or to refuse to answer any question in an interview. To address these rights, ethical researchers do the following:
• Inform respondents of their right to refuse to answer any questions or participate in the study.
• Obtain permission to interview respondents.
• Schedule field and phone interviews.
• Limit the time required for participation.
• Restrict observation to public behavior only.

THE OBLIGATION TO BE TRUTHFUL: When a subject willingly agrees to participate, it is generally expected that he or she will provide truthful answers. Honest cooperation is main obligation of the respondent or the subject.

ETHICS AND THE SPONSOR There are also ethical considerations to keep in mind when dealing with the research client or sponsor has the right to receive ethically conducted research.

CONFIDENTIALITY OF SPONSOR: Some sponsors wish to undertake research without revealing themselves. They have a right to several types of confidentiality, including sponsor nondisclosure, purpose nondisclosure, and findings nondisclosure. Companies have the right to dissociate themselves from sponsorship of a research project. This type of confidentiality is called **sponsorship nondisclosure.**

PURPOSE NONDISCLOSURE It involves protecting the purpose of the study or its details.

RIGHT TO QUALITY RESEARCH: An important ethical consideration is the sponsor's **right to quality** research. This right entails:
• Providing research design appropriate for the research question.
• Maximizing the sponsor's value for the resources expended.
• Providing data handling and reporting techniques appropriate for the data collected.

SPONSOR'S ETHICS: Occasionally, research specialists may be asked by the sponsors to participate in unethical behavior. Compliance by the researcher would be a breach سوراخ of ethical standards.

RESEARCHERS AND TEAM MEMBERS: Another ethical responsibility of researchers is their team's safety as well as their own.

SAFETY: It is the researcher's responsibility to design a project so the safety of all interviewers, surveyors, experimenters, or observers is protected.

ETHICAL BEHAVIOR OF ASSISTANTS: Researchers should require ethical compliance رضامندی from team members just as sponsors expect ethical behavior from researcher.

PROTECTION OF ANONYMITY بے نامی Researchers and assistants should protect the confidentiality of the sponsor's information and Anonymity بے نامی of the respondents. Each researcher handling data should be required to sign a confidentiality and nondisclosure statement.

PROFESSIONAL STANDARDS: Various standards of ethics exist for the professional researcher. Many corporations, professional associations, and universities have **code of ethics.** These codes of ethic have to be enforced.

Lesson 15:	**MEASUREMENT OF CONCEPTS**

MEASUREMENT IN QUANTITATIVE AND QUALITATIVE RESEARCH: Both qualitative and quantitative researchers use careful, systematic methods to gather high quality data. Qualitative researchers use wider variety of techniques to measure and create new measures while collecting data.

THE TWO APPROACHES TO MEASUREMENT HAVE THREE DISTINCTIONS.

1. One difference between the two styles involves timing. Quantitative researchers extensively think about variables and convert them into specific actions during a planning stage that occurs before and separate from gathering or analyzing data. Measurement for qualitative researchers occurs in the data collection process, and only a little occurs in a separate, planning stage prior to data gathering.

2. A second difference involves the data itself. Quantitative researchers want to develop techniques that can produce quantitative data (i.e. data in the form of numbers). Thus, the researcher moves from abstract ideas, or variables, to specific data collection techniques to precise numerical information produced by the techniques. The qualitative researcher does not convert all observations into a single, common medium such as numbers. Instead he or she develops many flexible, ongoing processes to measure that leaves the data in various shapes, sizes, and forms. All researchers combine ideas and data to analyze the social world. In both research styles, data are empirical representation of concepts, and measurement is a process that links data to concepts.
3. A third difference is how the two styles make such linkages. Quantitative researchers contemplate and reflect on concepts before they gather data. They construct measurement techniques that bridge concepts and data. The measurement techniques define what the data will be and are directions for gathering data. Qualitative researchers also reflect on ideas before data collection, but they develop many, if not most, of their concepts during data collection activities. Researchers start gathering data and creating ways to measure based what they encounter. As they gather data, they reflect on the process and develop new ideas. The ideas give them direction and suggest new ways to measure.

This definition implies that measurement is a three-part process:

1. Selecting observable empirical events.

2. Developing a set of mapping rules.

3. Applying the mapping rule(s) to each observation of that event.

WHAT IS MEASURED? Variable being studied in research may be classified as objects or as properties. **Objects** include the things of ordinary experience, such as tables, people, books, and automobiles. Objects also include things that are not as concrete, such as genes, attitudes, neutrons, and peer group pressures. **Properties** are the characteristics of the objects. A person's physical properties may be stated in terms of weight, height, and posture. Psychological properties include attitudes, intelligence, motivation, perceptions, etc. Social properties include leadership ability, class affiliation, or status.

In a literal sense, researchers do not measure either objects or properties. They measure indicants of the properties or indicants of the properties of the objects. One technique is to reduce the abstract notions or concepts such as motivation, involvement, satisfaction, buyer behavior, stock market exuberance and the like to observable behavior and characteristics. In other words, the abstract notions are broken down into observable characteristic behavior. Reducing the abstract concepts to render them measurable in a tangible way is called **operationalizing the concepts**.

PARTS OF THE MEASUREMENT PROCESS: When a researcher measures, he or she takes a concept, idea, or construct and develops a measure (i.e. a technique, a process, a procedure) by which he or she can observe the idea empirically. Quantitative researchers primarily follow a deductive route. To begin with the abstract idea, follow with a measurement procedure and end with empirical data that represent the ideas. Qualitative researchers primarily follow inductive route. They begin with empirical data and follow with abstract ideas then follow with processes relating with ideas and data, and end with a mixture of ideas and data.

RESEARCHERS USE TWO PROCESSES : (CONCEPTUALIZATION AND OPERATIONALIZATION IN MEASUREMENT):

A. CONCEPTUALIZATION: Conceptualization is the process of taking a construct and refining it by giving it a conceptual or theoretical definition. It refers to other ideas or constructs. There is no magical way to turn a construct into a precise conceptual definition. It involves thinking carefully, observing directly, consulting with others, reading what others have said, and trying possible definitions.

Conceptual definitions are linked to theoretical frameworks and to value positions.

Lesson 16:	MEASUREMENT OF CONCEPTS (CONTINUED)

B. OPERATIONALIZATION: Operationalization is the process of linking the conceptual definition to a specific set of measurement techniques or procedures. It links the language of theory with the language of empirical measures. Theory is full of abstract concepts, assumptions, relationships, definitions, and causality. Operationalization is done by looking at the behavioral dimensions, facets, or properties denoted by the concept. These are then translated into observable elements so as to develop an index of measurement of the concept.

Lesson 17:	MEASUREMENT OF CONCEPTS (CONTINUED)

SCALES AND INDEXES **Scales and indexes are often used interchangeably**. Social researchers do not use a consistent nomenclature to distinguish between the two. A scale is a measure in which a researcher captures the intensity, direction, level, or potency of a variable construct. A scale can use a single indicator or multiple indicators. An index is a measure in which a researcher adds or combines several distinct indicators of a construct into a single score. Indexes are often measured at the interval or ratio level. Researchers sometimes combine the features of scales and indexes in a single measure.

TYPES OF SCALES: **Four types of scales are nominal, ordinal, interval, and ratio**.

1. **NOMINAL SCALE**: A nominal scale is the one in which the numbers or letters assigned to objects serve as labels for identification or classification. This measurement scale is the simplest type. Nominal scales are the least powerful of the four scales.
2. **ORDINAL SCALE:** Ordinal scales include the characteristics of the nominal scale plus an indicator of order. If *a* is greater than *b* and *b* is greater than *c*, then *a* is greater than *c*. The use of ordinal scale implies a statement of "greater than" or "less than" without stating how much greater or less.
3. **INTERVAL SCALE:** Interval scales have the power of nominal and ordinal scales plus one additional strength: they incorporate the concept of equality of interval (the distance between 1 and 2 equals the distance between 2 and 3).
4. **RATIO SCALE:** Ratio scales incorporate all the powers of the previous scales plus the provision for absolute zero or origin. Ratio data represent the actual amounts of variable. Measures of physical dimensions such as weight, height, distance, and area are the examples. The absolute zero represents a point on the scale where there is an absence of the given attribute. If we hear that a person has zero amount of money, we understand the zero value of the amount.

Lesson 18:	**CRITERIA FOR GOOD MEASUREMENT**

There are three major criteria for evaluating a measurement tool: validity, reliability, and sensitivity.

VALIDITY: Validity is the ability of an instrument to measure what it is supposed to measure. Three major types of validity: (1) content validity, (2) criterion-related validity (3) construct validity.

(1) CONTENT VALIDITY: The content validity of a measuring instrument is the extent to which it provides adequate coverage of the investigative questions guiding the study. *Face validity* is considered as a basic and very minimum index of content validity.

(2) CRITERION-RELATED VALIDITY: Criterion validity uses some standard or criterion to indicate a construct accurately. The validity of an indicator is verified by comparing it with another measure of the same construct in which research has confidence. There are two subtypes of this kind of validity. Concurrent validity and Predictive validity:

Concurrent validity: To have concurrent validity, an indicator must be associated with a preexisting indicator that is judged to be valid.

Predictive validity: Criterion validity whereby an indicator predicts future events that are logically related to a construct is called a predictive validity.

(3) CONSTRUCT VALIDITY: Construct validity is for measures with multiple indicators. This is assessed through convergent validity and discriminant validity.

Convergent Validity: This kind of validity applies when multiple indicators converge or are associated with one another. Convergent validity means that multiple measures of the same construct hang together or operate in similar ways.

Discriminant Validity: Also called divergent validity, discriminant validity is the opposite of convergent validity. It means that the indicators of one construct hang together or converge, but also diverge or are negatively associated with opposing constructs.

RELIABILITY: The reliability of a measure is an indication of the *stability* and *consistency* with which the instrument measures the concept and helps to assess the 'goodness" of measure.

Stability of Measures: The ability of the measure to remain the same over time – despite uncontrollable testing conditions or the state of the respondents themselves – is indicative of its stability and low vulnerability to changes in the situation. This attests to its "goodness" because the concept is stably measured, no matter when it is done. Two tests of stability are test-retest reliability and parallel-form reliability.

Test-retest Reliability: Test-retest method of determining reliability involves administering the same scale to the same respondents at two separate times to test for stability. If the measure is stable over time, the test, administered under the same conditions each time, should obtain similar results.

Parallel-Form Reliability: When responses on two comparable sets of measures tapping the same construct are highly correlated, we have parallel-form reliability. It is also called equivalent-form reliability. Both forms have similar items and same response format, the only changes being the wording and the order or sequence of the questions.

Internal Consistency of Measures: Internal consistency of measures is indicative of the homogeneity of the items in the measure that tap the construct. Consistency can be examined through the inter-item consistency reliability and split-half reliability.

Inter-item Consistency reliability: This is a test of consistency of respondents' answers to all the items in a measure.

Split-Half reliability: Split half reliability reflects the correlations between two halves of an instrument. The estimates could vary depending on how the items in the measure are split into two halves.

SENSITIVITY: The sensitivity of a scale is an important measurement concept, particularly when changes in attitudes or other hypothetical constructs are under investigation. Sensitivity refers to an instrument's ability to accurately measure variability in stimuli or responses.

PRACTICALITY:. Practicality has been defined as economy, convenience, and interpretability.

Lesson 19: RESEARCH DESIGN

RESEARCH DESIGN: A research design is a master plan specifying the methods and procedures for collecting and analyzing the data. It is a strategy or blueprint that plans the action for carrying through the research project data. Broadly it is composed of different elements like

1. Purpose of the Study
2. Unit of Analysis:
3. Time Dimension:
5. Choice of Research Design
6. Sampling Design:
7. Observation Tools:
8. Field Data Collection:
9. Data Processing and Data Analysis

1. Purpose of the Study: From the perspective of purpose of the study, a research can be exploratory, descriptive, and explanatory. Here our focus is on whether our study is going to be a *descriptive* or *explanatory*. The essential difference between descriptive and explanatory studies lies in their objectives. If the research is concerned with finding out *who, what, where, when, or how much*, then the study is **descriptive.** In an **explanatory study**, we try to explain relationships among variables.

2. Unit of Analysis: The unit of analysis refers to the level of aggregation of the data collected during the subsequent data analysis stage. If, for instance, the problem statement focuses on how to raise the motivational levels of employees in general, then we are interested in individual employees in the organization and would have to find out what we can do to raise their motivation. Here the unit of analysis is the **individual**. We will be looking at the data gathered from each individual and treating each employee's response as an individual data source.

If the problem statement is related to group effectiveness, the unit of analysis would be at group level. In other words, even though we may gather relevant data from all individuals comprising. Units of analysis in a study are typically also the *units of observation*. Thus, to study voting intentions, we would interview (observe) individual voters. Sometimes, however, we "observe" our units of analysis indirectly.

3. Time Dimension: Do we make the observations more or less at one time or over a long period, former called as cross sectional studies and the latter as longitudinal studies. **Cross-Sectional Studies** are carried out **o**nce and represent a snapshot of one point in time. Data are collected just once, perhaps over a period of days or weeks or months, in order to answer the research question. **Longitudinal Studies** are repeated over an extended period. The advantage of longitudinal studies is that it can track changes over time. Such studies, as when data on the dependent variable are gathered at two or more points in time to answer the research question, are called longitudinal. Longitudinal studies can be *panel studies* and *cohort studies*.

4. Researcher Control of Variables: In terms of researcher's ability to manipulate variables, we can differentiate between experimental and ex post facto design. Co relational studies done in organizations are called field studies. Studies conducted to establish cause-and-effect relationship using the same natural environment are called **field experiments.** Here the researcher does not interfere with the natural occurrence of events in as much as independent variable is manipulated. Experiments done to establish cause and effect relationship beyond the possibility of the least doubt require the creation of an artificial, contrived environment in which all the extraneous factor are strictly controlled. Similar subjects are chosen carefully to respond to certain manipulated stimuli. These studies are referred to as **lab experiments**. With an **ex post facto** design, investigators have no control over the variables in the sense of being able to manipulate them. They can only report what has happened or what is happening.

5. Choice of Research Design: Mode of Observation: There could be number of ways to collect the data depending upon whether the study is quantitative or qualitative, descriptive or explanatory, cross-sectional or longitudinal, and contrived or non-contrived, the researcher decides about the mode of observation. The modes could be like: survey, experiment, communication analysis (content analysis) field observation, case study, focus group discussion.

6. Sampling Design: The basic idea of sampling is that by selecting some of the elements in population, we may draw conclusions about the entire population. A population element is the subject on which the measurement is being taken. It is the unit of analysis. Sampling has its own advantages and disadvantages. Depending upon the nature of the study the researchers decides about following appropriate type of sampling design.

7. Observation Tools: Observation tool mostly used by social researchers are: questionnaire, interview schedule, Interview guide, and check list. In the research design, the researcher will specify the tools of data collection along the logic justifying the appropriateness of the selected tool.

8. Field Data Collection: Depending upon the mode of observation, the researcher will outline the procedure for field operations. The researcher will try to look after the questions like: How the data will be collected? Who will be responsible for the collections of data? What training will be imparted to the field functionaries? How will the quality control of data be maintained?

9. Data Processing and Data Analysis: In the research design the researcher is required to tell how the data shall be processed (manually, mechanically), and analysis plans explicated. In case the qualitative data are to be quantifies the procedures should be spelled out. The procedures for the construction of score Indexes, if any, should be explained. The research design should also say something about the analysis plan, the use of statistics, and the inferences to be drawn.

SURVEY RESEARCH: AN OVERVIEW: Surveys require asking people, who are called **respondents**, for information, using either verbal or written questions. Questionnaires or interviews are utilized to collect data on the telephone, face-to-face and through other communication media. Thus, **a survey is defined as a method of gathering primary data based on communication with a representative sample of individuals**.

STEPS IN CONDUCTING A SURVEY: The survey researcher follows a deductive approach. He or she begins with a theoretical or applied research problem and ends with empirical measurement and data analysis. Once a researcher decides that survey is an appropriate method, **basic steps in a research project can broadly be divided into six sub-steps**.

1. **Develop the hypothesis:**
2. **Plan how to record data:**
3. **Decide on target population:**
4. **Locate respondents**
5. **Enter data into computers**
6. **Describe methods and findings in research report**:

1. Develop the hypothesis; decide on type of survey (mail, interview, telephone); write survey questions (decide on response categories, design lay out). The researcher develops an instrument – a survey questionnaire or interview schedule – that he or she uses to measure variables. Respondents read the questions themselves and mark answers on a *questionnaire*. An *interview schedule* is a set of questions read to the respondent by an interviewer, who also records the responses. To simplify the discussion, we will use only the term *questionnaire.*

2. Plan how to record data; pilot test survey instrument. When preparing the questionnaire, the researcher thinks ahead to how he or she will record and organize data for analysis. The questionnaire is pilot tested on a small set of respondents similar to those in the final survey.

3. Decide on target population; get sampling frame; decide on sample size; select the sample.

4. Locate respondents; conduct interviews; carefully record data. The researcher locates sampled respondents in person, by telephone, or by mail. Respondents are given information and instructions on completing the questionnaire or interview.

5. Enter data into computers; recheck all data; perform statistical analysis on data.

6. Describe methods and findings in research report; present findings to others for critique and evaluation.

Lesson 20:	**SURVEY RESEARCH**

SURVEY RESEARCH: Research Design can be classified by the *approach* used to gather primary data. There are really two alternatives. We can ***observe*** conditions, behavior, events, people, or processes Or we can ***communicate*** with people about various topics, including participants' attitudes, motivations, intentions, and expectations.

The **communication approach** involves surveying people and recording their responses for analysis. The great strength of the survey as a primary data collecting approach is its versatility.

What media do we use for communicating with people?

Human Interactive Media and Electronic Interactive Media When two people engage in conversation, human interaction takes place. **Human interactive media** are personal forms of communication. One human being directs a message to and interacts with another individual (or a small group). When they think of interviewing, most people envision this type of face-to- face dialogue or a conversation on telephone.

Electronic interactive media allows researchers to reach a large audience, to personalize individual messages and to interact with members of the audience using digital technology. To a large extent electronic interactive media users are controlled by the users themselves. In the context of surveys, respondents are not passive audience members. They are actively involved in a two-way communication when electronic interactive media are utilized.

The Internet, the medium that is radically altering many organizations' research strategies, provides a prominent example of the new electronic interactive media.

Non-Interactive Media: The traditional questionnaire received by mail and completed by the respondent does not allow a dialogue or exchange of information for immediate feedback. Self-administered questionnaires printed on paper are also non-interactive.

CHOOSING A COMMUNICATION MEDIA: Once the researcher has determined that surveying is the appropriate data collection approach, various means may be used to secure information from individual. A research can conduct a survey by personal interview, telephone, mail, computer or a combination of these media.

PERSONAL INTERVIEWING: A personal interview (i.e. face to face communication) is a two way conversation initiated by an interviewer to obtain information from a respondent. Personal interviews may take place in a factory, in a homeowner's doorway, in an executive's office, in a shopping mall, or in other settings.

ADVANTAGES OF PERSONAL INTERVIEWING:

1. The Opportunity for Feedback: Personal interviews allow for feedback. The interviewer may also provide feedback in clarifying any questions an employee or any other respondent has about the instructions or questions.

2. Probing تفشیش Complex Questions: An important characteristic of personal interview is the opportunity to follow up, by probing. If a respondent's answer is brief or unclear, the researcher may ask for a clearer or more comprehensive explanation.

3. Length of Interview: If the research objective requires an extremely lengthy questionnaire, personal interviews may be the only alternative. Generally, telephone interviews last fewer than 10 minutes, whereas a personal interview can be much longer, perhaps more than an hour. A rule of thumb for mail questionnaire is that it should not be more than six pages.

4. High Completion Rate: The social interaction between a well-trained interviewer and a respondent in personal interview increases the likelihood that the respondent will answer all items on the questionnaire.

5. Props and Visual Aids: Interviewing respondents face to face allows an investigator to show them a new product sample, a sketch of proposed office, or some other visual aid. The respondents can even taste samples of different products and can give their evaluations. Such an evaluation cannot be done in telephone interview or mail survey.

6. High Participation Rate: While some people are reluctant to participate in a survey, the presence of an interviewer generally increases the percentages of people willing to complete the interview.

7. Observation of the Non-Verbal Behavior: In a personal interview, the interviewer can catch the facial expressions, body movements, and depending upon the goals of the study, the environment of the respondent. Such observations may supplement the verbal information.

8. Non-Literates can participate in Study: Since the respondent has neither to read nor to write, therefore, an illiterate or a functionally illiterate person can also take part in the survey study.

9. Interviewer can Prescreen Respondent: In order to ensure that the respondent fits the sampling criteria, the interviewer can do some prescreening of the respondent. In personal interview the interviewer makes it sure that only the relevant respondent provides the information.

10. CAPI – Computer Assisted Personal Interviewing: With the use of such modern technology the responses of the respondents can be entered into a portable microcomputer to reduce error and cost.

DISADVANTAGES OF PERSONAL INTERVIEWING:

1. High Cost: Personal interviews are generally more expensive than mail, internet, and telephone surveys. People usually estimate the cost of personal interviews is usually 15 times higher than the mail survey

2. Scarcity کمی of Highly Trained Interviewers: In case of a big study (especially a sponsored study) there shall be a need of highly trained interviewers, who are not easily available. Using unqualified and untrained interviewers are likely to have a negative effect on the quality of the data and the subsequent generalizations.

3. Lack of Anonymity بے نامی گمنامی of Respondent: Because the respondent in a personal interview is not anonymous therefore he/she may be reluctant to provide confidential information to another person-

4. Callbacks – a Labor Intensive Work: Callbacks or attempts to re-contact individuals selected for the sample are the major means to reducing non-response error. It is a labor intensive work and definitely increases the cost.

5. Interviewer Influence: There is some evidence that the demographic characteristics of the interviewer influence respondents' answers. Respondent's sex, age, and physical appearance can have an effect on the responses of the respondent.

6. Interviewer Bias مائل ہونا : Interviewer's personal likings and dis-likings, the environment and cultural biases can affect the understanding of the responses, its recording, and its interpretation.

7. No Opportunity to Consult: The interview may take place anywhere – place of work, in the shopping mall, at home – the respondent may be unable to consult record, incase he/she has to do so for any specific question.

8. Less Standardized Wording: Despite the fact that the questions have been printed and have a specified order, these questions are read by the interviewer. The interviewers intentionally or unintentionally may not be able to use the standardized wording which may bias the data. Similarly the order of the questions may be altered.

9. Limitations in Respondents' Availability and Accessibility: Some executive officers or VIPs may not be available or accessible to interviewers. Some of them may not be willing to talk to strangers for security reasons.

10. Some Neighborhoods are Difficult to Visit: Just for security reasons some neighborhoods may not allow outsiders to enter the premises. Even the formal permission may be denied because the residents don't want to contact any strangers.

DOOR TO DOOR INTERVIEWS: These are the personal interviews conducted at respondent's home or place of work. It is likely to provide more representative sample of the population than mail questionnaire. Some people may prefer to give a verbal response rather than in writing. People who do not have telephones, who have unlisted numbers, or who are otherwise difficult to contact may be reached through door to door interviews.

Lesson 21:	INTERCEPT INTERVIEWS IN MALLS AND OTHER HIGH-TRAFFIC AREAS

MALL INTERCEPT INTERVIEWS: Personal interviews conducted in shopping malls are referred to as **mall intercept interviews**. These are low cost. No travel is required to the respondent's home – instead the respondent comes to the interviewer and thus many interviews can be conducted quickly. The incidence of refusal is high however, because individuals may be in a hurry.

TELEPHONE INTERVIEWING: Telephone interviewing has been a mainstay بنیادی سہارا of commercial survey research. The quality of data obtained by telephone may be comparable to that collected in personal interviews. Respondents may even be more willing to provide detailed and reliable information on a variety of personal topics over the telephone than in personal interviews. Telephone surveys can provide representative samples of general population in most industrialized countries.

CENTRAL LOCATION INTERVIEWING: Research agencies and interviewing services typically conduct all telephone interviews from central location. WATS (Wide-Area Telecommunications Service) lines provided by long distance telephone service at fixed rates allow interviewers to make unlimited telephone calls throughout the entire country or within a specific geographic area.

COMPUTER-ASSISTED TELEPHONE INTERVIEWING (CATI): Advances in computer technology allow responses to telephone interviews to be entered directly into a computer in a process known as computer assisted telephone interviewing (CATI).Telephone interviewers are seated at computer terminals. A monitor displays the questionnaire, one question at a time, along with pre-coded possible responses to each question. The interviewer reads each question as it is shown on the screen. When the respondent answers, the interviewer enters the response into the computer, and it is automatically stored in the computer's memory when the computer displays the next question on the screen. A computer assisted telephone interviewing requires that answers to the questions be highly structured. A lot of computer programming facilitates telephone interviewing.

THE STRENGTHS OF TELEPHONE INTERVIEWING:

1. High Speed: The speed of data collection is a major advantage of telephone interviewing.

2. Saves Cost: It is estimated the cost of telephone interviewing is less than 25% of the door to door personal interviews.

3. Callbacks: An unanswered call, a busy signal, or a respondent who is not at home requires a callback. Telephone callbacks are substantially easier and less expensive than personal interview callbacks.

4. Can Use Computerized Random Digit Dialing.

5. Expanded Geographic Area Coverage without Increasing the Cost.

6. Uses fewer but highly Skilled Interviewers.

7. Reduced Interviewer Bias

8. Better Access to hard-to-reach respondents through repeated callbacks:

9. Use Computer Assisted Telephone Interviewing (CATI): Responses can be directly entered into computer file to reduce error and cost.

WEAKNESSES OF TELEPHONE INTERVIEWING:

1. Absence of Face-to-Face Contact: Telephone interviews are more impersonal than face-to-face interviews. Respondents may answer embarrassing in a telephone interview than in a personal interview.

2. Response Rate is lower than for Personal Interviews:

3. Lack of Visual Medium: Since visual aids cannot be utilized in telephone interview, research that requires visual material cannot be conducted by phone.

4. Limited Duration: Length of the interview is limited. Respondents who feel they have spent too much time in the interview will simply hang up. (A good rule is to plan telephone interviews to be approximately 10 minutes long).

5. Many Numbers are unlisted or not working

6. Less Participant Involvement:

7. Distracting Physical Environment: Multiple phones distract the interview situation which may affect the quality of the data.

SELF-ADMINISTERED QUESTIONNAIRES: The self administered questionnaire has become ubiquitous ہر جگہ پھیلا ہوا in modern living. Service evaluations of hotels, restaurants, car dealerships, and transportation providers

furnish ready examples. Often a short questionnaire is left to be completed by the participants in a convenient location or is packed with the product. Self-administered mail questionnaires are delivered not only through postal services, but also via fax and courier service.

MAIL QUESTIONNAIRE: A mail survey is a self administered questionnaire sent to respondents through the mail. This paper-and-pencil method has several advantages and disadvantages.

ADVANTAGES OF MAIL QUESTIONNAIRE:

1. Geographic Flexibility: Mail questionnaires can reach a geographically dispersed sample simultaneously and at a relatively low cost because interviewers are not required.

2. Sample Accessibility: Researchers can contact participants who may otherwise be inaccessible. Some people, such as major corporate executives and physicians, are difficult to reach in person or by phone, as gatekeepers limit access. But the researchers can often access these special participants by mail or computer

3. Self-Administered Questionnaires save Time:

4. Saves Cost:

5. Respondent Convenience:

6. Anonymity بے نامی : Mail surveys are typically perceived as providing more Anonymity بے نامی than the other communication modes.

7. Standardized Questions: Mail questionnaires are highly standardized, and the questions are quite structured.

DISADVANTAGES OF MAIL QUESTIONNAIRE:

1. Low Response Rate: Mail questionnaire has very low rate of return of the filled questionnaires.

2. Low Completion Rate: There are chances that respondents leave many questions as unanswered, either because they did not understand the question or they shied away

3. Increases Cost: The researcher keeps on waiting for the return. When enough response is not there then the reminders are sent, and again there is a waiting time. With the reminders copies of the questionnaires are sent. All this adds to the cost of the study.

4. Interviewer's Absence: Respondent may have different interpretations of the questions. Due to the absence of the interviewer, the respondents are unable to get any help for needed clarifications.

5. No Control on Question Order: In a self administered/mail questionnaire, the respondent usually reads the whole of the questionnaire prior to answering the questions. The latter questions may influence the answers to the earlier questions; thereby it is likely to bias the data

6. Cannot Use Lengthy Questionnaire: A general rule of thumb is that it should not exceed six pages.

7. No Control over the Environment: The researcher does not know about who filled the questionnaire.

8. Cannot Catch the Non-Verbal Behavior

9. Non-Literates cannot participate:

Lesson 22:	SELF ADMINISTERED QUESTIONNAIRES (CONTINUED)

INCREASING RESPONSE RATE: Here are some guidelines for increasing the response rate. **Response rate is the number of questionnaires returned or completed, divided by the total number of eligible people who were contacted or asked to participate in the survey.**

Cover Letter: The cover letter that accompanies the questionnaire or is printed on the first page of the questionnaire is an important means of inducing a reader to complete and return the questionnaire. In the letter tell why the study is important, who is sponsoring the study, how was the respondent selected, assuring the Anonymity بے نامی of the respondent could help in establishing rapport and motivating the respondent to respond. A personalized letter addressed to a specific individual shows the respondent that he or she is important.

Money Helps: The respondent's motivation for returning a questionnaire may be increased by offering monetary incentives or premiums. Although pens, lottery tickets and variety of premiums have been used monetary incentives appear to be the most effective and least biasing incentive. It attracts the attention and creates a sense of obligation. Money incentive works for all income categories.

Interesting Questions: The topic of the research and thus the point of the questions cannot be manipulated without changing the problem definition. However, certain interesting questions can be added to the questionnaire, perhaps in the beginning, to stimulate the respondents' interest and to induce cooperation.

Follow-Ups: Follow-up implies the communication of the message to respondents through different means for the return of questionnaire. A follow-up may include a duplicate questionnaire or may merely be a reminder to return the original questionnaire. Multiple contacts almost always increase response rates.

Preliminary Notification: Advance notification, by either letter or telephone that a questionnaire will be arriving has been successful in increasing the response rates in some situations.

Survey Sponsorship: Sponsorship of the study makes a difference for motivating the respondents to return the questionnaires. It depends upon the goodwill of the sponsoring agency that can activate/deactivate the respondent to

fill the questionnaire and return it. There is some evidence that "official" and "respected" sponsorship increases the response rate.

Return Envelopes: The inclusion of a stamped, self addressed envelope encourages response because it simplifies questionnaire return.

Postage: The existing evidence shows that expedited delivery is very effective in increasing response rate. First class or third class mail, stamped mail or metered mail may make a difference.

Personalization: Personalization of the mailing has no clear-cut advantage in terms of improved response rates. Neither personal inside addresses nor individually signed cover letters significantly increased response rates; personally typed cover letters proved to be somewhat effective.

Size, Reproduction, and Color: The size of the paper, the printing, and color may have some effect, though not significant, on the response rate. It is recommended to use the A-4 size paper and while sending it do not fold it. May be the researcher has to make use of all the possible techniques simultaneously, so that the response rate could be increased. Such an effort is referred to as Total Design Effort (TDE).

E-Mail Surveys: Questionnaires can be distributed via e-mail. E-mail is relatively new method of communication and many individuals cannot be reached this way. However, certain projects lend themselves to, such as internal surveys of employees or satisfaction surveys of retail buyers who regularly deal with an organization via e-mail. The benefits of an e-mail include speed of distribution, lower distribution and processing cost, faster turnaround time, more flexibility, and less handling of paper questionnaires.

INTERNET SURVEYS: An internet survey is a self-administered questionnaire posted on a Web site. Respondents provide answers to questions displayed on screen by highlighting a phrase, clicking an icon or keying in an answer.

ADVANTAGES OF INTERNET SURVEYS:

1. Speed and Cost Effectiveness:

2. Visual Appeal and Interactivity: Surveys conducted on Internet can be interactive. Many of this interactive survey utilize color, sound, and animation, which may help to increase the respondents' cooperation and willingness to spend more time answering questions. The Internet is an excellent medium for the presentation of visual materials, such as photographs or drawings of product prototypes, advertisements, and movie trailers.

3. Respondent Participation and Cooperation: Participation in some Internet surveys occurs because computer users intentionally navigate to a particular Web site where questions are displayed.

4. Accurate Real-Time Data Capture: The computer to computer nature of Internet surveys means that each respondent's answers are entered directly into the researcher's computer as soon as the questionnaire is submitted. A researcher can review up-to-the –minute sample size counts and tabulation data from an Internet survey in real time.

5. Callbacks: When the sample for Internet survey is drawn from a consumer panel, it is easy to re contact those who have not yet completed the questionnaire. Computer software can also identify the passwords of those respondents who completed only a portion of the questionnaire and send those people customized messages.

6. Personalized and Flexible Questioning: There is no interviewer in Internet surveys but the respondent interacts directly with the software on a Web site. In other words the computer program asks questions in sequence determined by a respondent's previous answer. The questions appear on the computer screen and answers are recorded by simply pressing a key clicking an icon, thus immediately entering the data into the computer's memory. This ability to sequence the question based on previous responses is a major advantage of computer-assisted surveys.

7. Respondent Anonymity بے نامی : Respondents are more likely to provide sensitive information when they can remain anonymous. The Anonymity بے نامی of the Internet encourages respondents to provide honest answers to sensitive questions. Most respondents do not feel threatening to enter information into the compute because of the absence of the interviewer. They may be assured that no human will ever see their individual responses.

8. Response Rate: Response rate can be increased by sending e-mail friendly reminders.

DISADVANTAGES OF INTERNET SURVEYS:

1. All People cannot Participate: Many people in the general public cannot access to Internet and all people with Internet access do not have the same level of technology. Many lack powerful computers or software that is compatible with advanced features programmed into many Internet questionnaires. Some individuals have minimum computer skills. They may not know how to navigate through and provide answers to an Internet questionnaire.

2. No Physical Incentive: Unlike mail surveys, Internet surveys do not offer the opportunity to send a physical incentive to the respondent.