STA630 - MIDTERM MERGED PPT HANDOUTS RESEARCH METHODS (LECTURE # 1, 3, 6, 7, 9-15, 19-22)

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HANDOUTS

Lesson # 1, 3, 6, 7, 9-15, 19-22

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STA630 (RESEARCH METHODS)

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Lesson 1

INTRODUCTION, DEFINITION & VALUE OF RESEARCH

Whether we are aware of it or not, we are surrounded by research. Educators, administrators, government officials, business leaders, human service providers, health care professionals, regularly use social research findings in their jobs. Social research can be used to raise children, reduce crime, improve public health, sell products, improve workers' efficiency, or just understand one's life.

Assume for the moment that you are the Manager of a restaurant. You are experiencing a significant turn over in your waiter/waitress pool, and long-time customers have been commenting that the friendly atmosphere that has historically drawn them to your door is changing. What will you do? Where will you try to solve this problem? The problem of high turnover and decline in the friendly atmosphere at the restaurant has to be researched.

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. A systematic inquiry whose objective is to provide information to the problems (be they managerial as in our example) is one way to explain research.

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 study in any haphazard manner. Instead, we try to follow a system or a procedure in an organized manner. It is all the more necessary in case we want to repeat the study, or somebody else wants to verify our findings. In the latter case the other person has to follow the same procedure that we followed. Hence not only we have to do the study in a systematic manner but also that system should be known to others.

What is the value of Research?

The nature of research problems could vary. Problems may refer to some undesirable situation or these may refer to simply a curiosity of the researcher that may be agitating his or her mind.

For example, in a recent BA/BS examination of the Punjab University 67 percent of the students failed. That is a colossal wastage of the resources; hence an undesirable situation that needs research is to find a solution. The researcher may come up with a variety of reasons that may relate with the students, the teachers, the curricula, the availability of books, the examination system, the family environment of the student, and many more.

So, a study may be carried out to diagnose the situation, and the recommendations to be applied to overcome the undesirable situation of mass failure of students.

In the same examination result one finds that girls have captured a good number of top positions; and that is happening for the last couple of years. One gets curious and tries to do research for finding out the reasons. This is an academic problem but certainly a research problem. Conducting such **research offers the pleasure of solving a puzzle**. Why the girls are catching most of the top positions in different examination? This might be a puzzle that the research may like to explain. Such findings make a good contribution to the body of knowledge i.e. making some good discoveries as part of the basic research. Finding answer to any enigma is self satisfying.

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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.*** In this way research provides the needed information that guides the planners to make informed decisions to successfully deal with the problems. The information provided could be the result of a careful analysis of data gathered first hand or of the data that are already available with an organization. .

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. Initially a problem may appear to be simply a 'tip of the iceberg' but the study by a professional might help locating the magnitude of the issue as well as its solutions. Such research is usually referred to as applied research, which shall be discussed in detail in the coming lectures.

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. Also we try to borrow methodologies from sister subjects.

Managers and administrators with knowledge of research have an advantage over those who are without. Though a manager/administrator him/herself may not be doing any major research yet he/she will have to understand, predict, and control events that are dysfunctional to the organization.

For example, a new product developed may not be "taking off," or a financial investment may not be "paying off" as anticipated. Such disturbing phenomena have to be understood and explained. Unless this is done, it will not be possible to predict the future of that product or the prospects of that investment, and how future catastrophic outcomes can be controlled. A grasp of research methods will enable managers/administrators to understand, predict, and control their environment.

Managers may not be doing the research themselves, in fact they could hire the services of professionals, and still they should be well conversant with research methodologies. The manager who is knowledgeable about research can interact effectively with outside researchers or consultants. Knowledge about research processes, design, and interpretation of data also helps managers to become discriminating recipients of the research findings presented, and to determine whether or not the recommended solution are appropriate for implementation.

We are surrounded by research

For the understanding of the professional works, incorporation of the new findings in the practical situations, and for the implementation of the recommendations in policy/planning, the managers have

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to be well conversant with researchers. Many of you may be preparing yourselves for such managerial positions, I am sure training in research methodology will certainly be helpful in your career.

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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 each other; that is, a purpose tends to go with certain techniques and particular uses. Few studies are pure types, but the dimensions simplify the complexity of conducting research.

1. Purpose of Doing Research

If we ask someone why he or she is conducting a study, we might get a range of responses: "*My boss told me to do*"; "*It was a class assignment*"; "*I was curious.*" There are so many reasons to do research as there are researches. Yet the purposes of research may be organized into three groups based on what the researcher is trying to accomplish – explore a new topic, 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 is 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.* The researcher's goal is to formulate more precise questions that future research can answer. Exploratory research may be the first stage in a sequence of studies. A researcher may need to know enough to design and execute a second, more systematic and extensive study.

Initial research conducted to clarify the nature of the problem. When a researcher has a limited amount of experience with or knowledge about a research issue, **exploratory research** is useful preliminary step that helps ensure that a more rigorous, more conclusive future study will not begin with an inadequate understanding of the nature of the management problem. The findings discovered through exploratory research would the researchers to emphasize learning more about the particulars of the findings in subsequent conclusive studies.

Exploratory research rarely yields definitive answers. It addresses the "what" question: "what is this social activity really about?" It is difficult to conduct because there are few guidelines to follow. Specifically 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;
4. Determine the feasibility of conducting the study;
5. Formulate questions and refine issues for more systematic inquiry; and
6. Develop techniques and a sense of direction for future research.

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For exploratory research, the researcher may use different sources for getting information like:

1. Experience surveys,
2. Secondary data analysis,
3. Case studies
4. Pilot studies.

As part of the experience survey the researcher tries to contact individuals who are knowledgeable about a particular research problem. This constitutes an informal experience survey.

Another economical and quick source of background information is secondary data analysis. It is preliminary review of data collected for another purpose to clarify issues in the early stages of a research effort.

The purpose of case study is to obtain information from one or a few situations that are similar to the researcher's problem situation. A researcher interested in doing a nationwide survey among union workers, may first look at a few local unions to identify the nature of any problems or topics that should be investigated.

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. Look at the class in research methods and try to give its profile – the characteristics of the students. 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. Give a verbal or numerical picture (%) of the situation;
3. Present background information;
4. Create a set of categories or classify the information;
5. Clarify sequence, set of stages; and
6. 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:

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1. Explain things not just reporting. Why? Elaborate and enrich a theory's explanation.
2. Determine which of several explanations is best.
3. Determine the accuracy of the theory; test a theory's predictions or principle.
4. Advance knowledge about underlying process.
5. Build and elaborate a theory; elaborate and enrich a theory's predictions or principle.
6. Extend a theory or principle to new areas, new issues, new topics:
7. Provide evidence to support or refute an explanation or prediction.
8. 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. Those who seek an understanding of the fundamental nature of social reality are engaged in basic research (also called academic research or pure research or fundamental research). Applied researchers, by contrast, primarily want to apply and tailor knowledge to address a specific practical issue. They want to answer a policy question or solve a pressing social and economic problem.

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. Today's computers could not exist without the pure research in mathematics conducted over a century ago, for which there was no known practical application at that time.

Police officers trying to prevent delinquency or counselors of youthful offenders may see little relevance to basic research on the question, "Why does deviant behavior occur?" Basic research rarely helps practitioners directly with their everyday concerns. Nevertheless, it stimulates new ways of thinking about deviance that have the potential to revolutionize and dramatically improve how practitioners deal with a problem.

A new idea or fundamental knowledge is not generated only by basic research. Applied research, too, can build new knowledge. Nonetheless, basic research is essential for nourishing the expansion of knowledge. 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. Applied research encompasses those studies undertaken to answer questions about specific problems or to make decisions about a particular course of action or policy. **For example**, an organization contemplating a paperless office and a networking system for the company's personal computers may conduct research to learn the amount of time its employees spend at personal computers in an average week.

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c. Basic and Applied Research Compared

The procedures and techniques utilized by basic and applied researchers do not differ substantially. 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, counselors, and caseworkers, or decision makers such as managers, committees, and officials. Often, someone other than the researcher who conducted the study uses the results of applied research. This means that applied researchers have an obligation to translate findings from scientific technical language into the language of decision makers or practitioners.

The results of applied research are less likely to enter the public domain in publications. Results may be available only to a small number of decision makers or practitioners, who decide whether or how to put the research results into practice and who may or may not use the results.

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. They may compromise scientific rigor to get quick, usable results. Compromise is no excuse for sloppy research, however. Applied researchers squeeze research into the constraints of an applied setting and balance rigor against practical needs. Such balancing requires an in-depth knowledge of research and an awareness of the consequences of compromising standards.

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. Those who are being studied participate in the research process; research incorporates ordinary or popular knowledge; research focuses on power with a goal of empowerment; research seeks to raise consciousness or increase awareness; and research is tied directly to political action. The researchers try to advance a cause or improve conditions by expanding public awareness.

They are explicitly political, not value neutral. Because the goal is to improve the conditions of research participants, formal reports, articles, or books become secondary. Action researchers assume that knowledge develops from experience, particularly the experience of social-political 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. Such an assessment is used for planning and making choices among alternative policies – to make an impact assessment of Basha Dam on the environment; to determine changes in housing if a major new highway is built.

***iii) Evaluation Research*:** It addresses the question, "Did it work?" The process of establishing value judgment based on evidence about the achievement of the goals of a program. 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).

Practitioners involved with a policy or program may conduct evaluation research for their own information or at the request of outside decision makers, who sometime place limits on researchers by setting boundaries on what can be studied and determining the outcome of interest.

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Two types of evaluation research are 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. Both are usually necessary.

3. The Time Dimension in Research:

Another dimension of research is the treatment of time. Some studies give us a snapshot of a single, fixed time point and allow us to analyze it in detail. Other studies provide a moving picture that lets us follow events, people, or sale of products over a period of time. In this way 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. 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. Researcher can observe stability or change in the features of the units or can track conditions overtime. One could track the characteristics of students registering in the course on Research Methods over a period of four years i.e. the characteristics (Total, age characteristics, gender distribution, subject distribution, and geographic distribution). Such an analysis could tell us the trends in the characteristic over the 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. The only need to identify those who experienced a common life event.

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, and *qualitative*, collecting data in the form of words or pictures.

a. Quantitative;

The main quantitative techniques are:

1. Experiments
2. Surveys
3. Content Analysis

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4. Using Existing Statistics

b. Qualitative;

The major qualitative techniques of research are:

1. Field Research
2. Case Study
3. Focus Group Discussion

Details about the quantitative and qualitative techniques of research shall be discussed later.

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Lesson 06

VARIABLES AND TYPES OF VARIABLES

Variable is central idea in research. Simply defined, variable is a concept that varies. 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. 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. Once you begin to look for them, you will see variables everywhere. 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. A variable may be situation specific; for example gender is a variable but if in a particular situation like a class of Research Methods if there are only female students, then in this situation gender will not be considered as a variable.

Types of Variable

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*. 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. There are others that can take added categories such as the demographic variables of race, religion. All such variables that produce data that fit into categories are said to be discrete/categorical/classificatory, since only certain values are possible. An automotive variable, for example, where "Chevrolet" is assigned a 5 and "Honda" is assigned a 6, provides no option for a 5.5 (i.e. the values cannot be divided into fractions).

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 *independent 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.

It is not always easy to determine whether a variable is independent or dependent. Two questions help to identify the independent variable. First, does it come before other variable in time? Second, if the variables occur at the same time, does the researcher suggest that one variable has an impact on another variable? Independent variables affect or have an impact on other variables. When independent variable is present, the dependent variable is also present, and with each unit of increase in the independent variable, there is an increase or decrease in the dependent variable also. In other

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words, the variance in dependent variable is accounted for by the independent variable. 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. In the research vocabulary different labels have been associated with the independent and dependent variables like:

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

Research studies indicate that successful new product development has an influence on the stock market price of a company. That is, the more successful the new product turns out to be, the higher will be the stock market price of that firm. Therefore, the **success of the new product** is the *independent variable,* and **stock market price** the *dependent variable*.

The degree of perceived success of the new product developed will explain the variance in the stock market price of the company.

It is important to remember that there are no preordained variables waiting to be discovered "out there" that are automatically assigned to be independent or dependent. It is in fact the product of the researcher's imagination demonstrated convincingly.

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.

For example, a strong relationship has been observed between the quality of library facilities (X) and the performance of the students (Y). Although this relationship is supposed to be true generally, it is nevertheless contingent on the interest and inclination of the students. It means that only those students who have the interest and inclination to use the library will show improved performance in their studies. In this relationship **interest and inclination** is moderating variable i.e. which moderates the strength of the association between X and Y variables.

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.

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A theory of suicide states that married people are less likely to commit suicide than single people. The assumption is that married people have greater social integration (e.g. feelings of belonging to a group or family). Hence a major cause of one type of suicide was that people lacked a sense of belonging to group (family). Thus this theory can be restated as a three-variable relationship: marital status (independent variable) causes the degree of social integration (intervening variable), which affects suicide (dependent variable). Specifying the chain of causality makes the linkages in theory clearer and helps a researcher test complex relationships.

Look at another finding that five-day work week results in higher productivity. What is the process of moving from the independent variable to the dependent variable? What exactly is that factor which theoretically affects the observed phenomenon but cannot be seen? Its effects must be inferred from the effects of independent variable on the dependent variable. In this work-week hypothesis, one might view the intervening variable to be the job satisfaction. To rephrase the statement it could be: the introduction of five-day work week (IV) will increase job satisfaction (IVV), which will lead to higher productivity (DV).

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. This is necessary if we are conducting an experiment where the effect of the confounding factors has to be controlled. Confounding factors is another name used for extraneous variables.

Relationship among Variables

Once the variables relevant to the topic of research have been identified, then the researcher is interested in the relationship among them. A statement containing the variable is called a proposition. It may contain one or more than one variable. The proposition having one variable in it may be called as univariate proposition, those with two variables as bivariate proposition, and then of course multivariate containing three or more variables. Prior to the formulation of a proposition the researcher has to develop strong logical arguments which could help in establishing the relationship. For example, age at marriage and education are the two variables that could lead to a proposition: the higher the education, the higher the age at marriage. What could be the logic to reach this conclusion? All relationships have to be explained with strong logical arguments.

If the relationship refers to an observable reality, then the proposition can be put to test, and any testable proposition is hypothesis.

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Lesson 7

HYPOTHESIS TESTING & CHARACTERISTICS

We have already seen that propositions are statements about variables considered to be true or false. If the phenomenon under consideration happens to be observable reality then they said statement could be empirically tested. 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. This logical relationship may be part of theoretical framework of the study.

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. Descriptive hypotheses typically state the existence, size, form, or distribution of some variable.

The first hypothesis contains only one variable. It only shows the distribution of the level of commitment among the officers of the organization which is higher than average. Such a hypothesis is an example of a Descriptive Hypothesis.

Researchers usually use research questions rather than descriptive hypothesis. 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.

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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. Such weak claims are often made when we believe that there are more basic causal forces that affect both variables. 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. This brings in the notions of independent and the dependent variables. Cause means to "help make happen." So the independent variable may not be the sole reason for the existence of, or change in the dependent variable. The researcher may have to identify the other possible causes, and control their effect in case the causal effect of independent variable has to be determined on the dependent variable. This may be possible in an experimental design of research.

Different ways to state hypotheses

- Hi motivation causes hi efficiency.
- Hi motivation leads to hi efficiency.
- Hi motivation is related to hi efficiency.
- Hi motivation influences hi efficiency.
- Hi motivation is associated with hi efficiency.
- Hi motivation produces hi efficiency.
- Hi motivation results in hi efficiency.
- If hi motivation then hi efficiency.
- The higher the motivation, the higher the efficiency

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.* Or

H0 = The relationship between *level of job commitment* and the *level of efficiency* is zero. Or

The two variables are independent of each other.

It does not take into consideration the direction of association (i.e. H0 is *non directional*), which may be a second step in testing the hypothesis. First we look whether or not there is an association then we go for the direction of association and the strength of association. Experts recommend that we test our hypothesis indirectly by testing the null hypothesis. In case we have any credibility in our

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hypothesis then the research data should reject the null hypothesis. Rejection of the null hypothesis leads to the acceptance of the alternative hypothesis.

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:** Quite frequently one comes across a situation when the researcher tries to collect all possible information on which he could lay his hands on. Later on he may find that only part of it he could utilize. Hence there was an unnecessary use of resources on trivial concerns. In such a situation, hypothesis limits what shall be studied and what shall not be.
2. **It identifies facts that are relevant and those that are not:** Who shall be studied (married couples), in what context they shall be studied (their consumer decision making), and what shall be studied (their individual perceptions of their roles).
3. **It suggests which form of research design is likely to be the most appropriate:** Depending upon the type of hypothesis a decision is made about the relative appropriateness of different research designs for the study under consideration. The design could be a survey design, experimental design, content analysis, case study, participation observation study, and/or Focus Group Discussions.
4. **It provides a framework for organizing the conclusions of the findings**

The Characteristics of a Testable Hypothesis:

- **Hypothesis must be conceptually clear.** The concepts used in the hypothesis should be clearly defined, operationally if possible. Such definitions should be commonly accepted and easily communicable among the research scholars.
- **Hypothesis should have empirical referents.** The variables contained in the hypothesis should be empirical realities. In case these are not empirical realities then it will not be possible to make the observations. Being handicapped by the data collection, it may not be possible to test the hypothesis. Watch for words like ought, should, bad.

- **Hypothesis must be specific.** The hypothesis should not only be specific to a place and situation but also these should be narrowed down with respect to its operation. Let there be no global use of concepts whereby the researcher is using such a broad concept which may all inclusive and may not be able to tell anything. For example somebody may try to propose the relationship between urbanization and family size. Yes urbanization influences in declining the size of families. But urbanization is such comprehensive variable which hide the operation

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3. ***Historical review*** *traces the development of an issue over time.* It traces the development of an idea or shows how a particular issue or theory has evolved 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, and then evaluates how well each accounts for findings. In addition to examining the consistency of predictions with findings, a theoretical review may compare theories for the soundness of their assumptions, logical consistency, and scope of explanation. Researchers also use it to integrate two theories or extend a theory to new issues. 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. It describes conflicting results and shows how different research designs, samples, measures, and so on account for different results.

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.

Referencing Electronic Sources:

- **Ahmad, B. (2005)** ***Technology and immediacy of information.*** **[on line]**

Available http://www.bnet.act.com

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Lesson 9

CONDUCTING A SYSTEMATIC LITERATURE REVIEW

Define and refine a topic:

Prior to the review of literature have a good idea of the topic of your interest. Although, the new thoughts emerging out of the review of literature may help in refocusing the topic, still the researcher needs to have some clear research question that could guide him/her in the pursuit of relevant material. Therefore begin a literature review with a clearly defined, well focused research question and a plan. A good review topic should be as focused as a research question. For example "crime" as such may be too broad a topic. A more focus may be a specific "type of crime" or "economic inequality and crime rates." 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 researcher needs to decide on the type of review, its extensiveness and the types of material to include. 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.

Also decide how to record the bibliographic citations for each reference. May be beginning a file folder or computer file in which you can place possible sources and ideas for new sources.

Locate research reports:

Locating research reports depends on the type of report or "outlet" of research being searched. Use multiple search strategies in order to counteract the limitations of single search method.

Articles in Scholarly Journals: Most social and behavioral research is likely published in scholarly journals. These journals are the vehicles of communication in science. There are dozens of journal, many going back decades, each containing many articles. Locating the relevant articles is formidable task.

Many academic fields have "abstracts" or "indexes" for the scholarly literature. Find them in reference section of the library. (Many available on compute as well). Such indexes and abstracts are published regularly.

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: Finding scholarly books on a subject can be difficult. The subject topics of a library catalog systems are usually incomplete and too broad to be useful. A person has to be well conversant with the library cataloging system.

Dissertations: A publication called *Dissertation Abstract International* lists most dissertations. It organizes dissertations by broad subject category, author, and date.

Government Documents: The "government documents" sections of libraries contain specialized lists of government documents.

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Policy Reports and Presented Papers. The most difficult sources to locate are policy reports and presented papers. They are listed in some bibliographies of published studies; some are listed in the abstracts or indexes.

What to Record:

After you locate a source, you should write down all details of the reference (full names of the authors, titles, volumes, issue, pages)

Write the Review:

A literature review requires planning and good, 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 is the norm of science. It means that you should not accept what is written simply on the basis of authority of its having been published. Question what you read, and evaluate it.

Critically reading research reports requires skills and take time and practice to develop. When reading an article, read carefully to see whether the introduction and title really fit with the rest of the article. Sometimes, titles, abstracts, or the introduction are misleading. They may not fully explain the research project's method and results.

The most critical areas of an article to read are the methods and results sections. Few studies are perfect. Researchers do not always describe the methods they used as fully as they should. Sometimes the results presented in tables or charts do not match what the researcher says. Some points may be over emphasized and others ignored. Check the conclusions, theses may not be consistent with the results.

What does a good review look like?

The author should communicate a review's purpose to the reader by its organization. The wrong way to write a review is to list a series of research reports with a summary of the findings of each. This fails to communicate a sense of purpose. It reads as a set of notes strung together. Perhaps the reviewer got sloppy and skipped over the important organizing step in writing the review.

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.

The writing process:

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. It goes without saying that the writing should be clear, accurate, and organized.

Instructors assign reports for different reasons and may place requirements on how it is written. In general, instructors want to see writing an organization that reflects clear, logical thinking. Student reports should demonstrate a solid grasp of substantive and methodological concepts. A good way to do this is to use technical terms explicitly when appropriate: they should not be use excessively and incorrectly.

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Lesson 10

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. Developing such a conceptual framework helps us to postulate or hypothesize and test certain relationships and thus improve our understanding of the dynamics of situation.

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. Even if the testable hypotheses not necessarily generated, developing a good theoretical framework is central to examining the problem under investigation.

There is a relationship between the literature survey and the theoretical framework whereby the former provides a solid foundation for developing the later. Literature survey helps in the identification of the relevant variables, as determined by the previous researches. This in addition to other logical connections, that can be conceptualized; forms the basis for the theoretical model. The theoretical framework elaborates the relationships among the variables, explains the theory underlying these relations, and describes the nature and direction of the relationships. Just as the literature survey sets the stage for a good theoretical framework, this in turn provides the logical base for developing useable hypotheses.

From the preceding discussion it can be concluded that a theoretical framework is none other than identifying the network of relationships among the variables considered important to the study of any given problem situation. Therefore, the theoretical framework offers the conceptual foundation for constructing the edifice of research that is to taken in hand.

Specifically a theoretical framework:

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

In the review of literature it is possible that you may come across a number of theories readily available for adoption as theoretical framework for the study under consideration. Theories are supposed to be generic whereby they could be applicable to different situations. Some concepts borrowed from such theories may have to be replaced with arguments, logic explicated, and the framework may be readily available. It is also possible that the researcher may combine more than one existing theory and come up with an entirely new framework, and in the process may develop new concepts as well.

However, in the absence of the ready-made conceptual framework, the researcher may venture to develop his/her own framework. Though, the researcher has to depend a lot on the existing body of literature for the identification of variables as well as for developing a rigorous logical argumentation for the interrelationships among different variables.

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Whether the researcher uses a ready-made theoretical framework or explicates an entirely new one, 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. There are six basic features that should be incorporated in any theoretical framework. These features are:

1. **Make an inventory of variables**: For developing a framework it appears essential to identify the factors relevant to the problem under study. These factors are the empirical realities which can be named at some abstract level called concepts. The concepts taking more than one value are the variables. In other words 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. This should be done for the important relationships that are theorized to exist among the variables. It is essential to theorize logical relationship between different variables.

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. Let us call 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. Theory, if you remember, is an interrelated set of propositions. Therefore, the present interrelated set of propositions relevant to a particular problem is in fact a theoretical framework explaining the pathways of logical relationships between different variables.

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6. **Schematic diagram of the theoretical model be given:** A schematic diagram of the theoretical framework should be given so that the reader can see and easily comprehend the theorized relationships.

Example:

Research Question: Why middle class families decline in their size?

By following the guidelines discussed earlier let us develop a theoretical framework.

1. **Inventory of variables**: Education levels of the couples, age at marriage, working women, rationalism, exposure to mass media of communication, accessibility to health services, practicing of family planning practices, aspirations about the education of children, shift to nuclear families, mobility orientation.
2. **Specify the direction of relationship:** Higher the education higher the age at marriage. Higher the education of women greater the chances of their being career women. Higher the education more the rationalism. Higher the education more selective the exposure to mass media of communication. Higher the education more the accessibility to health services. Higher the education more the practicing of family planning practices. Higher the education of the parents the higher their aspirations about the education of their children. Higher the education of the couple greater the chances of shifting to nuclear families. Higher the education of the couples the higher their mobility orientation.
3. **Give a clear explanation of why we should expect the proposed relationships to exist.** For example higher the education higher the age at marriage. One could build up the argument like this: For purposes of getting high levels of education the youngsters spend about 16 years of their life in educational institutions. Let us say they complete their education at the age of 22 years. After completing education they spend 2-3 years for establishing themselves in their careers. During this period continue deferring their marriage. By the time they decide about their marriage they are about 25 years. Compare this age at marriage with the age at marriage of 16 years. Obviously with this higher age at marriage there is a reduction in the reproductive period of women. Similarly we can develop logic in support of other proposed relationships.
4. **Make an inventory of propositions.** The proposed relationships under item 2 about could be the examples of propositions.
5. **Arrange these propositions in a sequential order**. These propositions can be arranged sequentially.
6. **Schematic diagram of the theoretical model be given**

Voluntary Job Turnover:

- ***Inventory of variables:***

  Equity of pay, job complexity, participation of decision making, job satisfaction, job performance, labor market conditions, number of organization, personal characteristics, expectation of finding an alternatives, intentions to quit, job turnover.

Requirement:

Apply all the components of theoretical framework

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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. Nevertheless, there could be a variety of sources like: personal experiences, emerging curiosities from the issues being reported in the mass media, developments in the knowledge, solving problems (relating to an organization, a family, education, and economy), and "hot" issues pertaining to everyday life.

Broad area of interest could be 'labor unions.' As one could see from the literature, there are a large number of books and perhaps thousands of articles covering various aspects of labor unions. These articles and books have been written by researchers hailing from different subject specialties and using variety of perspectives. Therefore the researcher should narrow down the topic to some specific aspect of labor unions. For example, to what extent do the labor unions protect the rights of female workers?

Techniques for Narrowing a Topic into a Research Question:

In order to narrow down the focus of research, try to get the background information from different sources. For example:

1. ***Examine the literature:***
   Published articles are an excellent source of ideas for research questions. They are usually at an appropriate level of specificity and suggest research questions that focus on the following:

   a. Explore unexpected findings discovered in previous research.
   b. Follow suggestions an author gives for future research at the end of an article.
   c. Extend an existing explanation or theory to a new topic or setting.
   d. Challenge findings or attempt to refute a relationship.
   e. Specify the intervening process and consider linking relations.

2. ***Talk over ideas with others:***
   a. Ask people who are knowledgeable about the topic for questions about it that they have thought of.
   b. 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:***
   a. Focus the topic into a specific historical period of time.
   b. Narrow the topic to a specific society or geographic unit.
   c. 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:***
   a. Will the research question be for an exploratory, explanatory, or descriptive study?
   b. 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. In our example the factors may be the prospects of membership of female workers of labor unions, actual membership, support of their men folk for membership, participation in the general body meetings, membership of the executive body of labor union, and so on. These very propositions become the basis of testable hypotheses. Similarly, the inventory of the propositions is helpful in developing the theoretical framework for the research project.

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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. For example the problem could pertain to (1) existing business problems where the manager is looking for a solution, (2) situation that may not pose any current problems but which the manager feels have scope for improvement, (3) areas where some conceptual clarity is needed for better theory building, or (4) situations in which a researcher is trying to answer a research question empirically because of interest in the topic.

Sponsored Researches:

So far we have been discussing research project primarily from the perspective that a researcher is likely to carry the study on his/her own initiative. Although such an initiator can be a business manager or Organizational Management trying to arrest some of the issues in the organization, yet the actual researcher may be a hired consultant. In such a situation the researcher has to ascertain the decision maker's objectives. There might simply be some symptoms, and just like the iceberg principle, the dangerous part of many business problems is neither visible to nor understood by business managers. These symptoms are the management dilemmas 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) that have been discussed earlier may be skipped. Certainly the management takes the research decisions keeping in view the urgency of the study, timing of the study, availability of the information, and more importantly the cost benefit equation of the study.

The Research Proposal:

A research *proposal* is a document that presents a plan for a project to reviewers for 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. Reviewers have more confidence that a planned project will be successfully completed if the proposal is well written and organized, and carefully planned.

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.

For funded projects the researchers need to show a track record of past success in the proposal, especially if they are going to be the in charge of the project. Proposals usually include curriculum vitae, letters of support from other researchers, and record if past research.

Research Proposal Sections:

Introduction

- Background of the study

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- 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

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Lesson 12

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. These steps can be:

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. Such issues might pertain to (1) problem currently existing in an organizational setting that need to be solved (sexual harassment), (2) areas that a manager believes need to be improved in the organization (improving the existing policies), (3) a conceptual or theoretical issue that needs to be tightened up for basic researcher or to understand certain phenomenon (conceptual definition of harassment), and (4) some research questions that a basic researcher wants to answer empirically (impact of harassment on the performance of the workers).

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). Some secondary sources of data are statistical bulletins, government publications, information published or unpublished, case studies, online data, web sites, and the Internet. In addition, the researchers often seek out people who are well informed on the topic, especially those who have clearly stated positions on controversial aspects of the problem. Such persons can be the professional researchers, or the informants to whom the issues relate. In certain situations it may be appropriate to have some focus group discussions with the relevant people. Such discussions help in the identification of variables and having clarification 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. As part of the applied research convert the management dilemma into a management question, and then on to research question that fits the need to resolve the dilemma. The symptoms of a problem might help tracing the real problem. For example a productivity decline of workers may be an issue. The management may have tried to solve it by the provision of incentive but did not work. The researcher may have to dig deep and find the possible factors like the morale and motivation of the workers having some other antecedents. There could be similar other broad issues which have to be narrowed down to research questions like:

1. To what extent has the new advertising campaign been successful in creating the high quality, consumer-centered corporate image that it was intended to produce?
2. Has the new packaging affected the sale of the products?

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3. Will the day care centers affect the productivity of female workers?
4. Why the divorce rate is on the increase in Pakistan?
5. Why the family in Pakistan is changing?
6. What could be the impact of changing family patterns on the living of senior citizens?

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 that are deemed to be integral to the dynamics of the situation being investigated. Developing such a conceptual framework helps to postulate or hypothesize and test certain relationships.

We have already discussed the components of a theoretical framework.

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. The objectives of the study determined during the early stages of the research are included in the design to ensure that the information collected is appropriate for solving the problem. The researcher must specify the sources of information, and the research method or technique (survey or experiment, for example) to be followed in the study.

Broadly there are six basic research methods for descriptive and causal research: surveys, experiments, observation, communication analysis (content analysis), case study, focus group discussion. Use of secondary data may be another method where the data may have been collected by using any of the six basic methods listed earlier. The objectives of the research, the available data sources the urgency of the decision and the cost of obtaining the data will determine the method to be chosen.

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. The task of writing a list of questions and designing the exact format of the printed or written questionnaire is an essential aspect of the development of survey research design.

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.

Experiments: Experiments hold the greatest potential for establishing cause-and-effect relationships. The use of experimentation allows investigation of changes in one variable, such as productivity, while manipulating one or more variables, perhaps social rewards or monetary rewards, under controlled conditions. Ideally, experimental control provides a basis for isolating causal factors, because outside (or exogenous) influences do not come into play.

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An experiment controls conditions so that one or more variables can be manipulated in order to test a hypothesis. In the laboratory experiments, compared with the field experiment, it is possible to create controlled conditions for the manipulation of one or more variables and see its effect on the dependent variable by holding the extraneous factors constant.

Observation techniques: Observation can be non-participant or participant. In many situations the objective of a research project is merely to record what can be observed – for example the number of automobiles that pass the proposed site for a gas station. This can be mechanically recorded or observed by any person. This is an unobtrusive study without a respondent's direct participation. In participant observation studies, the researcher takes part in the day to day activities, interviews them, and makes observations. Such a study generates qualitative data and lasts for a long duration.

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 interpretation of results. It produces qualitative information which may compliment the quantitative data.

Researchers try to evaluate different research designs and select the most appropriate one that helps in getting the relevant information. There is no one best research design for all situations.

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 *interviews* – 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. Editing involves checking the data collection forms for omissions, legibility, and consistency in classification. The editing process corrects problems such as interviewer errors prior to the data are transferred to a computer. Coding may be the assigning of numbers or symbols before it goes to the computer. The computer can help in making tables and the application of different statistics.

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.

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8. Testing the Hypotheses; Answering the Research Questions

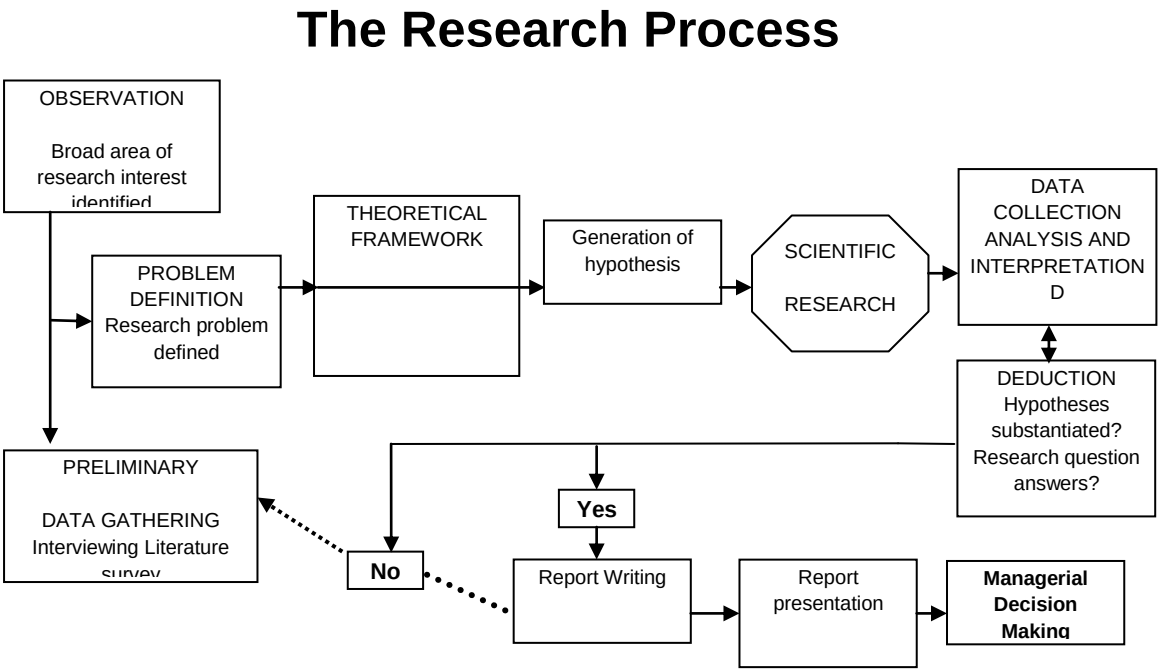
The analysis and interpretation of the data shall be the means to testing the formulated hypotheses as well as finding answers to the research questions. In case of applied research, the research should be helpful in finding solutions to the problems of the organization or society. Making recommendations may also be part of this process.

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. If the study has been conducted for a business management, often the management is not interested in detailed reporting of the research design and statistical findings but wants only the summary of the findings. Research is only as good as the applications made of it. Nevertheless, the research report becomes a historical document, a record that may be referred to in later studies. In case of research for academic purposes the research findings become part of the body of knowledge, and the research may producing research papers for publication in professional journals.

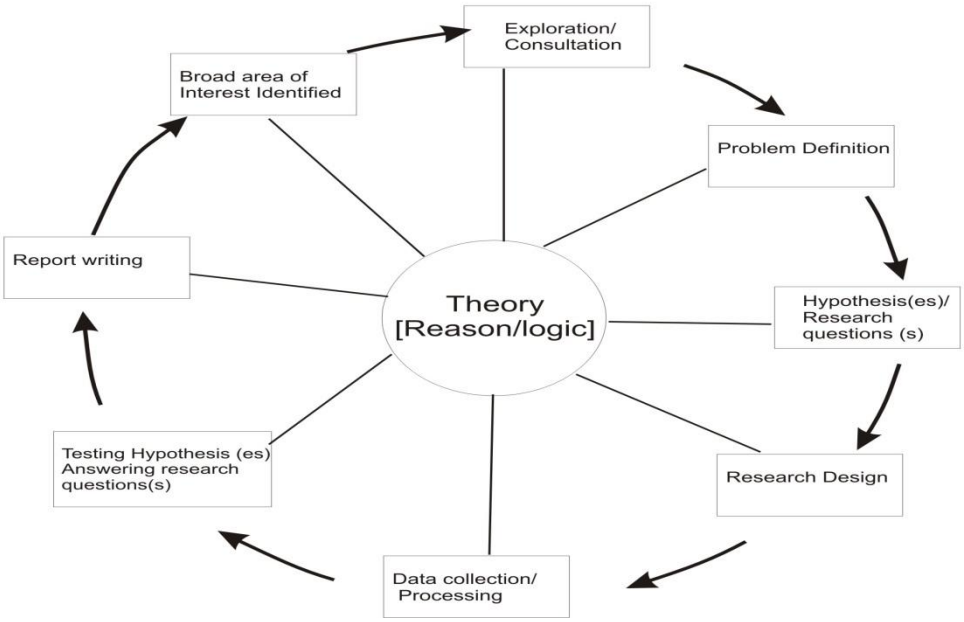
The report has to be presented in the format as it may have been part of the terms of reference if it is a sponsored study. In case of a dissertation the Universities have some standardized styles which have to be followed. Similarly the research papers have to be prepared in accordance with the format specified by the professional journals.

The graphic presentation of the research process may be like this:



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STEPS IN SOCIOLOGICAL INVESTIGATION



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Lesson 13

ETHICAL ISSUES IN RESEARCH

Ethics are norms 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. This objective is usually achieved. However, unethical activities are pervasive and include violating nondisclosure agreements, breaking respondent confidentiality, misrepresenting results, deceiving people, invoicing irregularities, avoiding legal liability, and more.

As discussed earlier, ethical questions are philosophical questions. There is no general agreement among philosophers about the answers to such questions. However the rights and obligations of individuals are generally dictated by the norms of society. Societal norms are codes of behavior adopted by a group; they suggest what a member of a group ought to do under given circumstances. Nevertheless, with changing situations people continue differing with each other whereby societal norms may undergo changes. Codes and regulations guide researchers and sponsors. Review boards and peer groups help researchers examine their research proposals for ethical dilemmas. Responsible researchers anticipate ethical dilemmas and attempt to adjust the design, procedures, and protocols during the planning process rather than treating them as afterthought. Ethical research requires personal integrity from the researcher, the project manager, and the research sponsor.

Codes of ethic applicable at each stage of the research

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 ethical dilemmas

- 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:

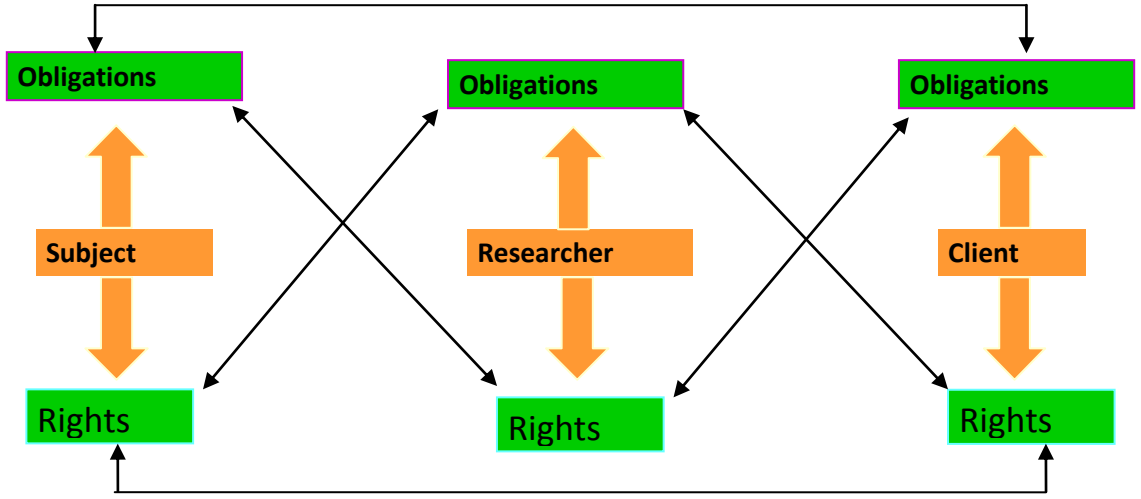
- The researcher
- The sponsoring client (user)
- The respondent (subject)
- Interaction requires ethical questions.
- Each party expects certain rights and feels certain obligations.

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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 unconsciously, each party expects certain rights and feels certain obligations towards the other parties.

Interaction of rights and obligations of parties in research



Ethical Treatment of Participants

When ethics are discussed in research design, we often think first about protecting the rights of the participant, respondent, or subject. Whether data are gathered in an experiment, interview, observation, or survey, the respondent has many rights to be safeguarded. In general the research must be designed so that a respondent does not suffer physical harm, discomfort, pain, embarrassment, or loss of privacy. To safeguard against these, the researcher should follow three guidelines;

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

Benefits:

Whenever direct contact is made with a respondent, the researcher should discuss the study's benefits, being careful to neither overstate nor understate the benefits. An interviewer should begin an introduction with his or her name, the name of the research organization, and a brief description of the purpose and benefit of the research. This puts the respondent at ease, let them know to whom they are speaking, and motivates them to answer questions truthfully. In short, knowing why one is being asked questions improve cooperation through honest disclosure of purpose. Inducements to participate, financial or otherwise, should not be disproportionate to the task or presented in a fashion that results in coercion.

Sometimes the actual purpose and benefits of the study or experiment must be concealed from the respondents to avoid introducing bias. The need for concealing objectives leads directly to the problem of deception.

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Lesson 14

ETHICAL ISSUES IN RESEARCH (Cont.)

Ethics are norms 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. This objective is usually achieved. However, unethical activities are pervasive and include violating nondisclosure agreements, breaking respondent confidentiality, misrepresenting results, deceiving people, invoicing irregularities, avoiding legal liability, and more.

Deception:

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 the 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.

The benefits to be gained by deception should be balanced against the risks to the respondents. When possible, an experiment or interview should be redesigned to reduce the reliance on deception. Use of deception is inappropriate unless deceptive techniques are justified by the study's expected scientific, educational, or applied value and equally effective alternatives that do not use deception are not feasible. And finally, the respondents must have given their informed consent before participating in the research.

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. When dealing with children, it is wise to have a parent or other person with legal standing sign a consent form.

If there is a chance the data could harm the respondent or if the researchers offer any limited protection of confidentiality, a signed form detailing the types of limits should be obtained. For most business research, oral consent is sufficient.

In situations where respondents are intentionally or accidentally deceived, they should be debriefed once the research is complete.

Debriefing:

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.

First, the researcher shares the truth of any deception with the participants and all the reasons for using deception in the context of the study's goals. In cases where severe reactions occur, follow-up medical or psychological attention should be provided to continue to ensure the participants remain unharmed by the research.

Even when the research does not deceive the respondents, it is a good practice to offer them follow-up information. This retains the goodwill of the respondent, providing an incentive to participate in future research projects. For surveys and interviews, respondents can be offered a brief report of the findings. Usually they would not ask for additional information.

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For experiments, all participants should be debriefed in order to put the experiment in context. Debriefing usually includes a description of the hypothesis being tested and the purpose of the study. Participants who were not deceived still benefit from the debriefing session. They will be able to understand why the experiment was created. The researchers also gain important insight into what the participants thought about during and after the experiment.

To what extent do debriefing and informed consent reduce the effects of deception? Research suggests that the majority of the respondents do not resent temporary deception and may have more positive feelings about the value of the research after debriefing than those who didn't participate in 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 confidentiality of the survey answers is an important aspect of the respondents' right to privacy.

Once the guarantee of confidentiality is given, protecting that confidentiality is essential. 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. Potential participants have a right to privacy in their own homes including not admitting researchers and not answering telephones. 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.** Due to sensitive nature of the management dilemma or the research question, sponsor may hire an outside consulting or research firm to complete research project. This is often done when a company is testing a new product idea, to avoid potential consumers from being influenced by company's current image or industry standing.

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Purpose nondisclosure involves protecting the purpose of the study or its details. A research sponsor may be testing a new idea that is not yet patented and may not want the competition to know its plans. It may be investigating employee complaints and may not want to spark union activity. Finally, even if a sponsor feels no need to hide its identity or the study's purpose, most sponsors want the research data and findings to be confidential; at least until the management decision is made. Thus sponsors usually demand and receive **findings nondisclosure** between themselves or their researchers and any interested but unapproved parties.

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 of ethical standards. Some examples to be avoided are;

- Violating respondent confidentiality.
- Changing data or creating false data to meet the desired objective.
- Changing data presentation or interpretations.
- Interpreting data from a biased perspective.
- Omitting sections of data analysis and conclusions.
- Making recommendations beyond the scope of data collected.

Researchers and Team Members

Another ethical responsibility of researchers is their team's safety as well as their own. The responsibility for ethical behavior rests with the researcher who, along with assistants, is charged with protecting the anonymity of both the sponsor and the respondent.

Safety: It is the researcher's responsibility to design a project so the safety of all interviewers, surveyors, experimenters, or observers is protected. Several factors may be important to consider in ensuring a researcher's **right to safety.**

Ethical behavior of Assistants: Researchers should require ethical compliance from team members just as sponsors expect ethical behavior from researcher. Assistants are expected to carry out the sampling plan, to interview or observe respondents without bias, and to accurately record all necessary data.

Protection of Anonymity: Researchers and assistants should protect the confidentiality of the sponsor's information and anonymity 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.

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Lesson 15

MEASUREMENT OF CONCEPTS

In everyday usage, measurement occurs when an established yardstick verifies the height, weight, or another feature of a physical object. How well you like a song, a painting, or the personality of a friend is also measurement. In a dictionary sense, to measure is to discover the extent, dimensions, quantity, or capacity of something, especially by comparison with a standard. We measure casually in daily life, but in research the requirements for measurement are rigorous.

Certain things lend themselves to easy measurement through the use of appropriate instruments, as for example, physiological phenomena pertaining to human beings such as blood pressure, pulse rates, and body temperature, as well as certain physical attributes such as height and weight. But when we get into the realm of people's subjective feelings, attitudes, ideology, deviance, and perceptions, the measurement of these factors or variables becomes difficult. Like the natural scientist who invents indirect measures of the "invisible" objects and forces of the physical world (magnetism – the force that moves a metal toward the magnet), the social researcher devises measures for difficult-to-observe aspects of the social world. For example, suppose you heard a principal complain about teacher morale in a school. Teacher morale is an empirical reality, and we can create some instrument for its measurement.

Measurement in Quantitative and Qualitative Research

Both qualitative and quantitative researchers use careful, systematic methods to gather high quality data. Yet, differences in the styles of research and the types of data mean they approach the measurement process differently. Designing precise ways to measure variables is a vital step in planning a study for quantitative researchers. Qualitative researchers use wider variety of techniques to measure and create new measures while collecting data. The two approaches to measurement have three distinctions.

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.

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 numerical information is an empirical representation of the abstract ideas. Data for qualitative researchers sometimes is in the form of numbers; more often it includes written or spoken word, actions, sounds, symbols, physical objects, or visual images. 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.

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

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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.

Here we shall focus on quantitative measurement. Here measurement consists of assigning numbers to empirical events in compliance with set rules. This definition implies that measurement is a three-part process:

1. Selecting observable empirical events.
2. Developing a set of mapping rules: a scheme for assigning numbers or symbols to represent aspects of the event being measured.
3. Applying the mapping rule(s) to each observation of that event.

Assume you are studying people who attend an auto show where all new models are on display introduced in a specific year. You are interested in learning the male-to female ratio among attendees. You observe those who enter the show area. If a person is female, you record an F; if male, an M. Any other symbols such as 0 and 1 may also be used if you know what group the symbol identifies.

Researchers might also want to measure the desirability of the styling of the new Espace van. They interview a sample of visitors and assign, with a different mapping rule, their opinions to the following scale:

What is your opinion of the styling of the Espace van?

Very desirable 5_____4_____3_____2_____1 Very undesirable

We can assign a weightage (score) like:

5 if it is very desirable

4 if desirable

3 if neither

2 if undesirable

1 if very undesirable.

All measurement theorists would call such opinion rating scale as a form of measurement.

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. These and many other properties of an individual can be measured in a research study.

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. The properties like age, years of experience, and the number of calls made per week are easier to indicate and there is expected to be lot of agreement.

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In contrast, it is not easy to measure properties like "motivation," "ability to stand stress," "problem-solving ability," and "persuasiveness." Since each property cannot be measured directly, one must infer its presence or absence by observing some indicant or pointer measurement. When you begin to make these inferences, there is often disagreement about how to operationalize the indicants.

The preceding discussion suggests two types of variables: one lends itself to objective and precise measurement; the other is more vague and does not lend itself to accurate measurement because of its subjective nature. However, despite the lack of physical measuring devices to measure the latter type, there are ways to tapping the subjective feelings and perceptions of individuals. 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, follow with abstract ideas, 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. A conceptual definition is definition in abstract, theoretical terms. 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.

A good definition has one clear, explicit, and specific meaning. There is no ambiguity or vagueness in the concepts (e.g. street gang, morale, motivation, social class, consumer satisfaction). A single construct can have several definitions, and people may disagree over definitions. Conceptual definitions are linked to theoretical frameworks and to value positions. For example, a conflict theorist may define *social class* as the power and property a group of people in society has or lacks. A structural functionalist defines it in terms of individuals who share a social status, life-style, or subjective identification. Although people disagree over definitions, the researcher should always state explicitly which definition he or she is using.

Before you can measure, you need a concept. You also need to distinguish what you are interested in from other things. The idea that you first need a construct or concept of what is to be measured simply makes sense. How can you observe or measure something unless you know what you are looking for? For example, we want to measure teacher morale. We first define *teacher morale*. What does the construct *morale* mean? As a variable construct, it takes on different values – high versus low or good versus bad morale. Next we create a measure of this construct. This could take the form of survey questions, an examination of school records, or observations of teachers. Also we distinguish morale from other things in the answers to survey questions, school records, or observations.

How can we develop a conceptual definition of *teacher morale*, or at least a tentative working definition to get started? Look in the everyday understanding of morale – something vague like "how people feel about things." Also look in the dictionary, which gives definitions like "confidence, spirit, zeal, cheerfulness, esprit de corps, and mental condition towards something." Look into the review of

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literature and see how other researchers have defined this concept. In this effort we collect various definitions, parts of definitions, and related ideas, whereby we draw the boundaries of the core idea.

We find that most of these definitions say that morale is a spirit, feeling, or mental condition toward something, or a group feeling. But we are interested in *teacher* morale. We can ask teachers to specify as what does this construct mean to them? One strategy is to make a list of examples of high or low teacher morale. High teacher morale includes saying positive things about the school, not complaining about extra-work or enjoying being with students. Low morale includes complaining a lot, not attending school events unless required to, or looking for other jobs.

Morale involves a feeling toward something else; a person has morale with regard to something. A list of various "somethings" toward which teachers have feelings (e.g. students, parents, pay, the school administration, other teachers, the profession of teaching). Are there several kinds of teacher morale or all these "somethings" aspects of one construct? We have to decide whether morale means a single, general feeling with different parts or dimensions, or several distinct feelings.

What unit of analysis does our construct apply to: a group or an individual? Is morale a characteristic of an individual, of a group, or of both?

A researcher must distinguish the construct of interest from related constructs. How is our construct of teacher morale similar to or different from related concepts? For example, does *morale* differ from *mood*? We decide that mood is more individual and temporary than morale. Morale is a group feeling that includes positive or negative feelings about the future as well as other beliefs and feelings.

Who is a teacher? We have to decide.

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. Empirical measures describe how people concretely measure specific variables. They refer to specific operations or things people use to indicate the presence of a construct that exists in observable reality. 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. Operationally defining a concept involves a series of steps.

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Lesson 19

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.

A research design involves a series of rational decision-making choices depending upon the various options available to the researchers. Broadly it is composed of different elements like: the purpose of the study, the unit of analysis, time dimension, mode of observation, sampling design, observation tools, data processing, and data analysis. Let us look at each one of these elements.

1. Purpose of the Study

From the perspective of purpose of the study, a research can be exploratory, descriptive, and explanatory (the distinctions we have already discussed). As we have already covered a number of steps in the research process, at this stage it is assumed that we are pretty sure about what we are looking for whereby we have gone much beyond the stage of an exploratory study (all studies have elements of exploration in them).

Beyond the exploratory stage now we are entering into the formal stage of delineating the plan for data collection, data processing, and data analysis. 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.** If it is concerned with learning why – that is how one variable produces changes in another – it is causal. Research on crime as such is descriptive when it measures the types of crimes committed, how often, when, where, and by whom. In an **explanatory study**, we try to explain relationships among variables – for instance, why the crime rate is higher in locality A than in locality B. Every explanatory study in the beginning is likely to be descriptive as well.

Methodological rigor increases as one moves from exploratory study to explanatory study, which may encompass hypothesis testing involving multiple methods of data collection, sophistications in sampling designs, formulation of instruments of data collection, data processing, and data analysis. Since the purpose of the study is likely to determine how rigorous the research design is likely to be, therefore, the researcher would decide very early on about the purpose of his/her study.

Within the explanatory study, researcher may further decide about the type of investigation i.e. causal versus correlational. The researcher must decide whether a causal or correlational study is needed to find an answer to the issue at hand. The former is done when it is necessary to establish a definitive cause-and-effect relationship. If the researcher just wants a mere identification of important factors "associated with" the problem, then a correlational study is called for. Whether the study is basically a correlational or causal will help in deciding about the mode of observation – survey study or an experimental study.

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.

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If the researcher is interested in studying two-person interactions, then several two-person groups (also known as dyads) will become the unit of analysis. Analysis of husband-wife interactions in families and supervisor-subordinate relationship at the work place, teacher-student relationship in the educational institution are good examples of dyads as unit of analysis.

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, say six groups, we would aggregate the individual data into group data so as to see the differences among six **groups.** If we compare different departments in the organization, then data analysis will be done at the department level – that is, the individuals in the department will be treated as one unit – and comparisons made treating the department as a unit of analysis.

The research question determines the unit of analysis. Keeping the research question in view, it is necessary to decide on the unit of analysis since the data collection methods, sample size, and even the variables included in the framework may sometimes be determined or guided by the level at which the data are aggregated for analysis.

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. For example, we might ask husbands and wives their individual voting intentions, for purpose of distinguishing couples who agree and disagree politically. We might want to find out whether political disagreements tend to cause family disharmony, perhaps. In this case, our unit of analysis would be families, though the *unit of observation* would be the individual wives and husbands.

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. While planning the strategy for data collection the time dimension may be an important component.

Cross-Sectional Studies are carried out once 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. For example, the researcher might want to study employees' behavior before and after a change in the top management, so as to know what effects the change accomplished. Here, because data are gathered at two different points in time, the study is not cross-sectional or of the one-shot kind, but is carried longitudinally across a period of 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* which were discussed earlier.

4. Researcher Control of Variables

In terms of researcher's ability to manipulate variables, we can differentiate between experimental and ex post facto design. In an **experiment**, the researcher attempts to control and/or manipulate the variables in the study. It is enough that we can cause variables to be changed or held constant in keeping with our research objectives. Experimental design is appropriate when one wishes to discover whether certain variables produce effects in other variables. Experimentation provides the most powerful support possible for hypothesis of causation.

Experimental studies can be contrived and non-contrived. Research can be done in the natural environment where work proceeds normally (i.e. in non-contrived setting) or in artificial, contrived setting. Correlational studies are invariably conducted in non-contrived settings, whereas most rigorous causal studies are done in contrived lab settings. Correlational studies done in organizations

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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. It is important that the researchers using this design not influence the variables; to do so introduce bias. The researcher is limited to holding factors constant by judicious selection of subjects according to strict sampling procedures and by statistical manipulation of findings. Survey research is an example of such study.

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 quantified 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. The more formal term **sample survey** emphasizes that the purpose of contacting respondents is to obtain a representative sample of the target population.

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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; 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.**

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Lesson 20

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? The traditional face to face communication (interview) for conducting surveys is still in vogue. Nevertheless, the digital technology is having a profound impact on the society as well as on research. Its greatest impact is on the creation of new forms of communication media.

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. The differences in the roles of the interviewer and the respondent are pronounced. They are typically strangers, and the interviewer generally controls the topics and patterns of discussion. The consequences of the event are usually insignificant for the respondent. The respondent is asked to provide information and has little hope of receiving any immediate or direct benefit from this cooperation. 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.

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Advantages of Personal Interviewing:

The face-to-face interaction between interviewer and respondent has several characteristics that help researchers obtain complete and precise information. Personal interviews offer many advantages.

1. The Opportunity for Feedback

Personal interviews allow for feedback. For example, an employee who is reluctant to provide sensitive information about his workplace may be reassured by the interviewer that his answers will be strictly confidential. The interviewer may also provide feedback in clarifying any questions an employee or any other respondent has about the instructions or questions. Circumstances may dictate that at the conclusion of the interview, the respondent be given additional information concerning the purpose of the study (part of debriefing). This is easily accomplished in personal interview.

2. Probing 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. Probing implies the verbal prompts made by the interviewer when the respondent must be motivated to communicate his or her answer more fully. Probing encourages respondents to enlarge on, clarify, or explain answers. Probing becomes all the more important when the questions don't have structured response categories. The complex question that cannot easily be asked in telephone or mail surveys can be handled by skillful interviewers.

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. The respondent who grows bored with a telephone interview may terminate the interview at his or her discretion simply by hanging up the phone. A respondent's self administration of a mail questionnaire requires more effort. Rather than writing a long explanation, the respondent may fail to complete some of the questions on the self administered questionnaire. This will be an **item non-response** – that is, failure to provide an answer to a question. It is less likely to happen with an experienced interviewer and in a face to face situation.

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. Respondents are not required to do any reading or writing – all they have to do is to talk. Most people enjoy sharing information and insights with friendly and sympathetic interviewers. Certainly, in personal interviews there is a higher rate of participation rate of the respondents compared with mail surveys and telephone interviews.

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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. In case of mail survey we are not sure who actually filled out the questionnaire, but in personal interview, the interview may be able to have some control over the environment of the information providers. In case there are other people around, he may make an excuse from other because he is interested in the true opinion of the sampled person.

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. The geographic proximity of respondents, the length of the questionnaire, and the number of people who are non-respondents because they could not be contacted all influence the cost of the personal interviews. The training of the field interviewers, supervision, and other logistical support cost may add up the total cost of the study. People usually estimate the cost of personal interviews is usually 15 times higher than the mail survey

2. **Scarcity 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 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. Though the interviewer provides all the assurance for the confidentiality of the information (by not asking the name or address) but the mere fact the respondent has been located, therefore he/she may not trust.

4. **Callbacks – a Labor Intensive Work**

When the person selected to be in the sample cannot be contacted on the first visit, a systematic procedure is normally initiated to call back at another time. **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.

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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

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, in case he/she has to do so for any specific question.

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.

8. 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.

9. 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.

Door to door interview may exclude individuals living in multiple dwelling units with security systems, such as high rise apartment dwellers, or executives who are too busy to grant a personal interview during business hours.

People, who are at home and willing to participate, especially if interviews are conducted in the day time, are somewhat more likely to be stay-at-home "moms" or retired people. These and other variables related to respondents' tendencies to stay at home may affect participation.

Intercept Interviews in Malls and Other High-Traffic Areas

Personal interviews conducted in shopping malls are referred to as mall intercept interviews. Interviewers generally stop and attempt to question shoppers at a central point within the mall or at the entrance. 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.

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In mall intercept interviews the researcher must recognize that he or she should not be looking for representative sample of the total population. Each mall will have its own customer characteristics of customers.

Personal interviews in the shopping mall may be appropriate when demographic factors are not likely to influence the survey's findings or when target group is a special population segment, such as the parents of children of bike-riding age.

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Lesson 21

INTERCEPT INTERVIEWS IN MALLS AND OTHER HIGH-TRAFFIC AREAS

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Personal interviews in the shopping mall may be appropriate when demographic factors are not likely to influence the survey's findings or when target group is a special population segment, such as the parents of children of bike-riding age.

Telephone Interviewing: Telephone interviewing has been a mainstay 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. Such central location interviewing allows firms to hire staffs of professional interviewers and to supervise and control the quality of interviewing more effectively. When telephone interviews are centralized and computerized, the research becomes even more cost-effective.

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. For example, union officials who wish to survey members' attitudes toward a strike may conduct a telephone survey during the last few days of the bargaining process. Whereas data collection with mail or personal interviews can take several weeks, hundreds of interviews can be conducted literally overnight. When the interviewer enters the respondents' answers directly into a computerized system, data processing can be done even faster.

2. Saves Cost: As the cost of personal interviews continues to increase, telephone interviews are becoming relatively inexpensive. It is estimated the cost of telephone interviewing is less than 25% of the door to door personal interviews.

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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: In some neighborhoods, people are reluctant to allow stranger to come inside their house, or even stop on the doorstep. The same people, however, may be preferably willing to cooperate with a telephone survey request. Likewise, interviewers may be somewhat reluctant to conduct face-to-face interviews in certain neighborhoods, especially during the evening hours. Telephone interviewing avoids these problems.

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 or confidential questions more willingly in a telephone interview than in a personal interview. People may be more comfortable to answer sensitive and threatening questions through mail surveys. Absence of face-to-face contact can be a liability. The interviewer and the respondent don't see each other what they are doing (Responding still responding when he/she is thinking and not speaking. Has the interviewer finished recording the information)?

2. **Response Rate is lower than for Personal Interviews:**

Some individuals refuse to participate in telephone interviews. Telephone researchers can run into several roadblocks when trying to obtain executives' cooperation at work. Participants find it easier to terminate a phone interview.

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 of thumb is to plan telephone interviews to be approximately 10 minutes long).

5. Many Numbers are unlisted or not working

6. Less Participant Involvement:

Telephone surveys can result in less thorough responses, and those interviewed by phone find the experience to be less rewarding than a personal interview. Participants report less rapport with telephone interviewers than with personal interviewers.

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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 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. Other modalities include computer-delivered and intercept studies.

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. Respondents in isolated areas or those who are otherwise difficult to reach (executives) can be contacted more easily by mail.

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: Self-administered questionnaires can be widely distributed to a large number of employees, so organizational problems may be assessed quickly and inexpensively. Questionnaires may be administered during group meetings as well as in the class rooms. The researcher can establish rapport with the respondents, can stay there for any clarifications, and may also be for any debriefing.

4. Saves Cost: Mail questionnaires are relatively inexpensive compared to personal interviews and telephone surveys. However, these may not be so cheap. Most include a follow-up mailing, which requires additional postage and printing of additional questionnaires.

5. Respondent Convenience: Mail surveys and self-administered questionnaires can be filled out whenever the respondent has time. Thus there is a better chance that respondents will take time to think about their response. Many hard-to-reach respondents place high value on responding to surveys at their own convenience and are best contacted by mail. In some situations, particularly in organizational research, mail questionnaires allow respondents time to collect facts (such as records of absenteeism) that they may not be able to recall without checking. In the case of household surveys, the respondents may provide more valid and factual information by checking with family members compared with if they are giving a personal interview.

6. Anonymity: Mail surveys are typically perceived as more impersonal, providing more anonymity than the other communication modes, including other methods for distributing self-administered questionnaires. Absence of interviewer can induce respondents to reveal sensitive or socially undesirable information.

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

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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 avoid.

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. In interview the questionnaire remains in the hands of the interviewer, and the respondent does not know what question is likely to follow. Therefore, in interview there is a control in the question order.

6. Cannot Use Lengthy Questionnaire: Mail questionnaires vary considerably in length, ranging from extremely short postcard questionnaires to lengthy, multi-page booklets requiring respondents to fill thousands of answers. Lengthy questionnaires are usually avoided by the respondents. 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: For participation in the mail/self-administered questionnaire related studies, the respondents have to be educated up to a certain level. Hence the non-educated people are in a way excluded from the study.

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 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. Including an individually typed letter on letterhead versus printed form is an important element in increasing the response rate in mail surveys.

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.

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Lesson 22

SELF ADMINISTERED QUESTIONNAIRES (CONTINUED)

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Follow-Ups

Follow-up implies the communication of the message to respondents through different means for the return of questionnaire. After responses from the first wave of mailing begin to trickle-in, most studies use follow-up, reminder for getting the response. 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. The more attempts made to reach people, the greater the chances of their responding.

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. Advance notices that go out close to the questionnaire mailing time produce better results than those sent too far in advance. This technique pre-supposes a certain level of development of the country where such facilities are available. Even otherwise, it depends upon the nature of the study as well as the type of respondents selected for the study.

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

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the respondent to fill the questionnaire and return it. There is some evidence that "official" and "respected" sponsorship increases the response rate. Sponsorship by well-known and prestigious organizations, such as universities or government agencies, may significantly influence response rates.

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. The attractive printing may be another factor influencing the return rate. If questionnaire has different parts, the use of different colors of paper may motivate the respondents to take interest in the study and return the questionnaire.

The manipulation of one or two techniques independently of all others may do little to stimulate response. 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.

Many respondents may feel that they can be more candid in e-mail than in person or on telephone, for the same reason they are candid on other self-administered questionnaires.

In many organizations the employees know that their e-mails are not secure, that "eves-dropping" by a supervisor could occur. Further maintaining the respondent's anonymity is difficult, because a reply to an e-mail message typically includes the sender's address. Researchers designing e-mail surveys should assure respondents that their responses will be confidential.

Not all e-mail systems have the same capacity: some handle color and graphics well; others are limited to text. The extensive differences in the capabilities of respondents' computers and email software limit the types of questions and the layout of the questionnaire.

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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.

Like any other survey, Internet surveys have both advantages and disadvantages.

Advantages of Internet Surveys

Speed and Cost Effectiveness: Internet survey allow the marketers to reach a large audience (possible a global one), to personalize the individual messages, and to secure confidential answers quickly and cost effectively. The computer to computer self-administered questionnaires eliminate the cost of paper, postage, data entry, and other administrative costs. Once an Internet questionnaire has been developed, the incremental cost of reaching additional respondents is marginal. Hence samples can be larger than with interviews or other types of self-administered questionnaires.

Visual Appeal and Interactivity: Surveys conducted on Internet can be interactive. The researcher can use more sophisticated lines of questioning based on the respondents' prior answers. 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.

Respondent Participation and Cooperation: Participation in some Internet surveys occurs because computer users intentionally navigate to a particular Web site where questions are displayed. In some instances individuals expect to encounter a survey at a Web site; in other cases it is totally unexpected.

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. In addition, the questionnaire software may be programmed to reject improper data entry.

Real-time data capture allows for real-time data analysis. A researcher can review up-to-the–minute sample size counts and tabulation data from an Internet survey in real time.

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.

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.

Respondent Anonymity: Respondents are more likely to provide sensitive information when they can remain anonymous. The anonymity 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.

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

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Disadvantages of Internet Surveys

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.

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

SELECTING THE APPROPRIATE SURVEY RESEARCH DESIGN

The choice of communication method is not as complicated as it might appear. By comparing the research objectives with the strengths and weaknesses of each method, the researcher will be able to choose one that is suited to the needs. Nevertheless, there is no "best" form of survey. Each has advantages and disadvantages. A researcher who must ask highly confidential questions may conduct a mail survey, thus trading off the speed of data collection to avoid any possibility of interviewer bias.

To determine the appropriate technique, the researcher must ask questions such as "Is the assistance of an interviewer necessary? Are respondents likely to be interested in the issues being investigating? Will cooperation be easily attained? How quickly the information is needed? Will the study require a long complex questionnaire? How large is the budget?" The criteria – cost, speed, anonymity, and the like – may be different for each project.

If none of the choices turns out to be a particularly good fit, it is possible to combine the best characteristics of two or more alternatives into a *mixed mode.* Although this decision will incur the costs of the combined modes, the flexibility of tailoring a method to the unique need of the project is often an acceptable trade off.

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PPTs

Lecture # 1, 3, 6, 7, 9-15, 19-22

Efforts by: AARISH ALI

RESEARCH METHODS

LECTURE 01

Introduction, Definition and Value of Research

Objectives of the Course

Students should be able to:

- Sharpen the analytical skills.
- Develop their understanding of the research concerns.
- Develop the ability to convert the research concerns into a research problem.
- Prepare a roadmap or blueprint of the research – using appropriate methodologies.
- Conduct the research by following the complete research process.

Methodology

Grading

Textbook:

- **Neuman, W. L. (2000).**
  Social Research Methods: Qualitative and Quantitative Approaches. **Boston: Allyen and Bacon.**

Supplementary books:

- Zikmund, W. G. (2003). *Business Research Methods*. Mason, Ohio: South Western.
- Sekaran, U. (2004). *Research Methods for Business* New York: John Wiley & Sons.

What is research?

- Gathering information needed to answer a question, and thereby help in solving a problem.
- Systematic and organized effort to investigate.

What is the value of research?

Research offers the pleasure of solving a puzzle.

Generating Theories – Models

Identifying problems and solutions

Research helps to develop new methodologies

We are surrounded by social research

RESEARCH METHODS

Lecture#3

CLASSIFICATION OF RESEARCH

Four main dimensions:

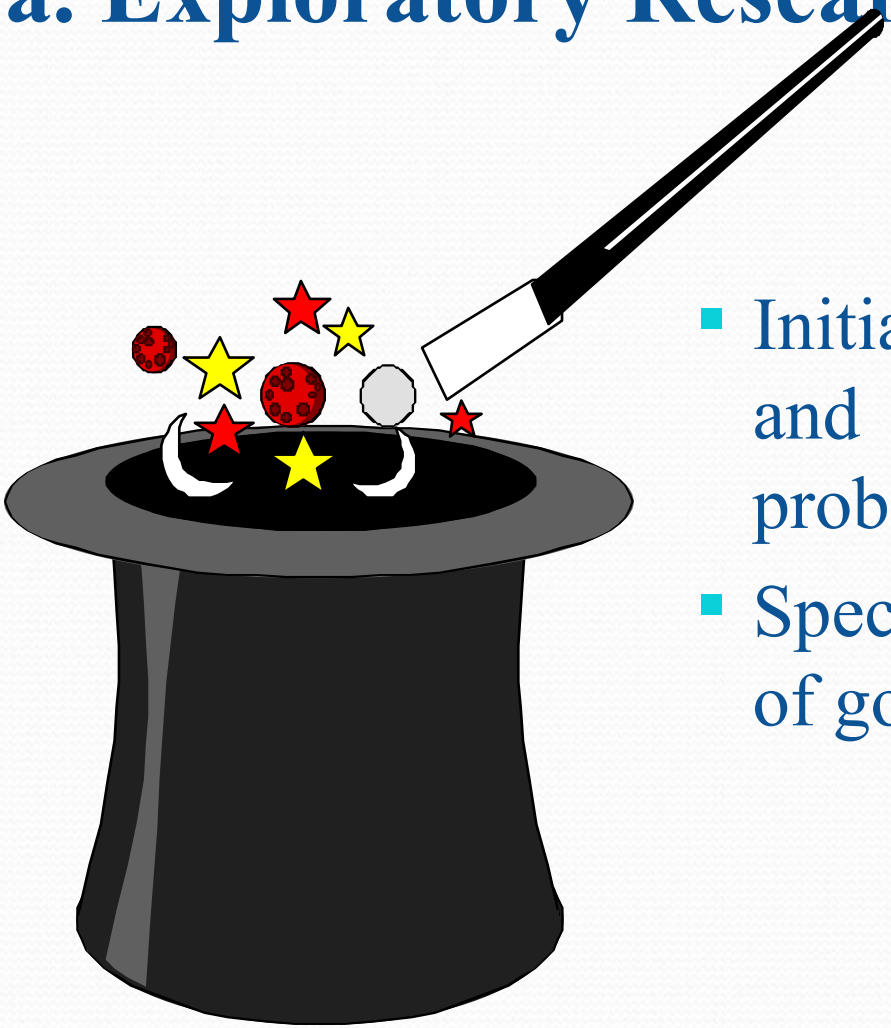
1. Purpose of doing research.
2. Intended uses of research.
3. How it treats time → time dimension.
4. The research techniques used

1. Purpose of Research:

What the researcher trying to accomplish.

1. Exploratory/ Formulative
2. Descriptive
3. Explanatory
4. Studies can be multi-purpose

a. Exploratory Research:



- Initial research conducted to clarify and define the nature of the problem. Exploring a new topic.
- Specifically, there could be number of goals of exploratory research.

Goals of Exploratory Research:

- Become familiar with the topic. Develop well grounded picture of the situation.
- Develop tentative theories.
- Determine the feasibility of study.
- Formulate questions and refine issues for more systematic inquiry.
- Develop techniques and a sense of direction for future research

b. Descriptive Research:

- Research designed to describe characteristics of the phenomenon understudy.
- Helps in diagnostic analysis

Goals of Descriptive Research:

- Describe the situation/characteristics. Provide an accurate profile of a group.
- Give a verbal or numerical picture (%).
- Present basic background information.
- Create a set of categories or classify.
- Clarify sequence, set of stages.
- Focus on ‘who’, ‘what’, ‘when’, ‘where’ and ‘how’ but not on ‘why’.

c. Explanatory Research:

- Also called as causal research i.e.
- ‘Why’? Explanation.
- Identify cause and effect relationship among different factors.

Goals of Explanatory Research:

- Explain things not just reporting. Why?
- Which explanation is better.
- Determine the accuracy of theory.
- Advance knowledge about underlying process
- Build and elaborate a theory → complete.
- Extend a theory or principle into new areas.
- Provide evidence to support *or* refute an explanation or prediction.

2. Intended Uses of Research:

a. **Basic Research**

- Pure/ fundamental/ academic
- Developing/ refuting/ supporting theories.
- Expand knowledge.
- Explanatory research is the most common
- Applied can also contribute._

b. Applied Research:

- Solve specific problems → help practitioners. Market new product.
- Choose one policy over the other.
- For improving productivity → problem with machines, raw material, persons working.

Basic and Applied Research Comparison

Basic Research

- Intrinsically satisfying
- Freedom.
- High standards applied.
- Logic and rigorous research design
- Basic knowledge.
- Success→ results published, impact on other scientists.

Applied Research

- R → part of job
- Constrained to demands of sponsors
- R→ quick and dirty→ may not meet hi standards.
- Apply to areas of interest to sponsors.
- Practical payoffs.
- Success→ results are used by sponsors.

Types of applied research:

- **Action Research:** Those who are being studied participate in research process; research incorporates popular knowledge; focus on power with goal of empowerment increase awareness; tied to political actions.
- **Impact Assessment:** Estimate the likely consequences of planned change.
- **Evaluation Research:** Did the program work? Measures the effectiveness of program.

3. Time Dimensions of Research:

- ***Cross-Sectional Research:*** Observe at one point in time, Snapshot study.
- ***Longitudinal Research:*** Examine at more than one time. Can be →
  - Time series study.
  - Panel study.
  - Cohort study – Category of people who share the same experience.

4. Research Techniques Used:

Quantitative:

- Experiments
- Surveys
- Content Analysis
- Using Existing Statistics

Qualitative:

- Field Research
- Case Study
- Focus Group Discussion

RESEARCH METHODS

Lecture 06

VARIABLE AND TYPES OF VARIABLES

Variable

- A central idea in research.
- Variable is a concept that varies.
- Anything (concept/term) that can take on differing or varying values. 2+ values. Could be numerical.
- Variation can be in quantity, intensity, amount, or type.
- Examples: Production units, Absenteeism, Gender, Religion, Motivation, Grade, Age.

Types of Variable

Continuous and Discontinuous Variable

- Can the values be divided into fractions?
- Discontinuous → Discrete categories. Categorical. Classificatory.

Dependent and Independent Variable

- DV → Outcome variable → effect variable (Y). Variation in Y is influenced by some other factor (s)
- IV → (X) that influences the Y.
- The variance in Y is accounted for by X.

Explaining X and Y variables

X variable

- Presumed cause
- Stimulus
- Predicted from
- Antecedent
- Manipulated
- Predictor

Y variable

- Presumed effect
- Response
- Predicted to
- Consequence
- Measured outcome
- Criterion

Moderating Variable

- A variable that moderates the strength of X – Y relationship.
- Strong relationship between the library facility (X) and performance of students (Y). Depends on the “interest and inclination” of students (MV). Modifies the original relationship.
- Relationship is contingent on another variable.

Intervening Variable

- Surfaces between the time X starts influencing the Y. Time factor. In fact is a function of X.
- IV → IVV → DV. IVV may be DV for IV in the first place, then it is IV for DV.
- Marital status → social integration → Suicide.
- 4-day workweek (IV) will lead to higher productivity (DV) by increasing job satisfaction (IVV).

Extraneous Variables

- Infinite number of EV exist that may effect XY relationship. Confounding factors.
- To be identified by the researcher.

Whether a variable is X or Y or moderating or intervening is determined by the researcher.

Relationship of Variables

- Relationship among variables. Logical.
- A statement concerned with the theoretical relationship among variables is a proposition.
- If the relationship refers to an observable reality, then the proposition may be testable → call it a hypothesis.

RESEARCH METHODS

RESEARCH METHODS

Lecture 07

HYPOTHESIS TESTING AND CHARACTERISTICS

Background:

- Once variables identified
- Establish the relationship through logical reasoning. Proposition.
- Proposition is a statement about variables judged to be true.

Definition:

- Hypothesis is a testable counterpart of proposition i.e. If variables refer to empirical reality then it could be testable. Therefore,
- Hypothesis is a testable proposition.

Example –1:

- Officers in my organization have higher than average *level of commitment.*
- How many variables in this hypothesis?
- Can we test this hypothesis?

Example-2:

- *Level of job commitment* of the Officers is associated with their *level of efficiency*.

Example –3:

- *Level of job commitment* of the Officers is positively associated with their *level of efficiency*.

Example–4:

- The higher the *level of job commitment* of Officers the lower their *level of absenteeism*.

Types of Hypothesis

i. Descriptive Hypothesis:

Also called uni-variate hypothesis: Proposition that typically states the existence, size, form, or distribution of some variable. e.g. Majority of the students registered in RM class are highly motivated.

ii. Relational Hypothesis:

- Statement describing the relationship between two or more variables.
- Relationship can be non-directional or directional.

a. Non-directional Relationship:

- The nature of relationship is not specified in Non-directional relationship.
- Job satisfaction and motivation are related.

b. Directional Relationship:

- Hypotheses are both relational and directional.
- Direction of relationship specified. Use of words like positive, negative, more than, less than etc.
- Hypotheses can be co-relational or causal.

c. Co-relational Hypothesis:

- Variables occur in some specified manner without implying that one causes the other. e.g. *Level of job commitment* of Officers is positively associated with their *level of efficiency*. Direction is Not causal.

d. Explanatory Hypothesis;

- Also called causal hypothesis.
- X and Y specified.
- X causes change in Y. e.g.
- High motivation causes high efficiency.

Different ways to state hypothesis:

- Hi motivation causes hi efficiency.
- Hi motivation leads to hi efficiency.
- Hi motivation and hi efficiency are +ly related
- Hi motivation influences hi efficiency.
- Hi motivation is associated with hi efficiency.
- Hi motivation produces hi efficiency.
- Hi motivation results in hi efficiency.
- If hi motivation then hi efficiency.
- Higher the motivation, higher the efficiency

iii. Null Hypothesis:

- No relationship between the variables
- The relationship between the variables is “zero”
- Null hypothesis is denoted as H0
- H0 = No relationship between X and Y /
- H0 = X and Y are independent of each other.
- H0 is non directional.

Use of Null Hypothesis:

- Used for testing the research hypothesis
- Researchers give more importance to negative evidence. No relationship rather than a relationship i.e. Null hypothesis.
- Reject H0 and accept alternative.

iv. Alternative Hypothesis:

- It is alternative to H0.
- There is a perfect relationship between X and Y i.e. H1

v. Research Hypothesis:

- This is the hypothesis formulated by the researcher.
- Tells not only the relationship but also the nature of relationship between X and Y.

The Role of Hypothesis:

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

The Characteristics of a Testable Hypothesis:

- Hypothesis must be conceptually clear.
- Hypothesis should have empirical referents.
- Hypothesis must be specific.
- Hypothesis should be related to available techniques of research.
- Hypothesis should be related to a body of theory

RESEARCH METHODS

Lecture 09

Conducting A Systematic Literature Review

Define and refine a topic:

- Have a good idea of your topic of interest
- Some clear research question to guide pursuit of relevant material.
- “Crime” is too broad. Narrow it to: “type of crime” or “economic inequality and crime”
- Review may help refocusing.

Design a search:

- Set parameters of your search.
- Type of review; how extensive.
- How to record the bibliographic citations.
- Begin a file folder or computer file.

Locate Research Reports:

- Articles in scholarly journals.
- Locating the relevant articles is difficult.
- Many academic field have “abstracts” or “indexes” for scholarly literature.
- Look in reference section of library
- Also available on computer.

Computerized literature search:

- Researchers organize computerized researches by author, by article title, by subject, or by keyword.
- *Keyword* important term for topic that is likely to be found in the title.
- Use 6-8 keywords in most computer based searches and use several synonyms

Other material:

- Scholarly books: have to use catalog
- Dissertations: A publication called *Dissertation Abstract International.*
- Government Documents: Section in library.
- Policy reports and presented papers. Difficult to locate. May be part of some bibliographies of published studies, or abstracts, or indexes.

What to record:

- Write down all details of the reference (full name of the authors, titles, journal name, year, volume, issue, pages)
- Same about books and other publications.
- Follow some standard format Like APA/ASA style.
- Referencing electronic source: Ahmad, B. (2006). *Technology and immediacy of information.* [on line] Available http://www.bnet.act.com

Write the review:

- Read critically. Skepticism is the norm of science. Don't accept simply because it is published. Evaluate.
- See whether introduction and the title fit with the rest of the article.
- Methods and results sections are the most critical.

How review will look like?

- Listing series of reports with a summary of each is not a review.
- It reads a set of notes strung together.
- Organize common findings or arguments together.
- Address the most important ideas first, to logically link findings, and to note discrepancies.

Plagiarism:

- In publications, presentations, writings the researchers explicitly identify, credit, and reference the author when they take data or material verbatim from another person's written work, whether it is published, unpublished, or electronically available.
- Do not present others' work as your own. Even the ideas have to be acknowledged.

Ethical Issues in Research:

- Management listening to Union members' conversation in cafeteria through hidden devices. Is there a moral question involved?
- A researcher discards damaging information about an organization. Is this proper?
- These questions are philosophical questions.

Ethical Issues:

- Philosophical questions (No agreement)
- Societal norms determine what is right and what is wrong.
- Codes of behavior determine what ought to be done.

Ethical behavior pervades each step of the research process – data collection, data analysis, reporting, and dissemination of information

Rights of the respondents:

- The right to be informed (informed consent: the expressed or implied acknowledgment waiving an individual's right to privacy when he/she agrees to participate in study)
- The obligation to be truthful
- Privacy
- Deception

Obligations of the Researcher:

- The purpose of research is research. Do not misrepresent.
- Objectivity – also no misrepresentation of research findings
- Protecting the right to confidentiality of the subject and clients.

RESEARCH METHODS

Lecture 10

THEORETICAL FRAMEWORK

Theoretical framework

- Theorizing the relationships among several factors relevant to the study.
- Can be called a conceptual model.

Conceptual Model

- Researcher elaborates the relationship among the variables.
- Explains the logic underlying these relationships.
- Describes the nature and direction of the relationships

Theoretical foundation

- Build up the theory
- Deduce hypothesis
- Test the theory or part thereof.

Provides the roadmap

- To the formulation of appropriate research question.
- To the formulation of research hypothesis.
- To the advancement of knowledge by testing theory.

Six basic components of Theoretical Framework

1. Make an inventory of variables

- Identify the variables relevant to the study.
- Search the literature, talk with informants, and observe

2. Specify the direction of relationshi

- Theorize the direction of relationship among the variable → negative or positive

3. Logic for the proposed relationship

- Theorize the logical relationship between different variables.
- Argument could be built up on the basis of previous studies, observations, inferences.

4. Make an inventory of propositions

- Stipulation of logical relationship between two variables ends up in a proposition.
- Number of interrelationships resulting in a number of propositions.
- Each proposition supported by rigorous logic.
- Take stock of the propositions.

5.Arrange propositions sequentially

- Interlink the propositions and arrange them sequentially.
- Axiomatic derivation.
- This will be theoretical framework

6. Present schematic diagram

- Helps in understanding the theorized relationships among the variables.

Example → Research Question

- Why middle class families become small in size?
- Let us follow the guideline for theoretical framework.

1. Inventory of relevant variables

- Education level of the couples, age at marriage, working women, rationalism, exposure to mass media of communication, accessibility to health services, use of family planning practices, parental aspirations about the education of their children, shift to nuclear families, mobility orientation, etc.

2. Specify the direction of relationship

- If you just make statements by using variables, it can indicate the direction of relationship. Look:
- Higher the education higher the age at marriage. Higher the education of women greater the chances of their being career oriented. Higher the education more the rationalism.

Higher the education more the exposure to mass media of communication. Higher the education more the accessibility to health services. Higher the education more the exposure to mass media of communication. Higher the education more the accessibility to health services. Higher the education greater the use of family planning practices. Higher the education of parent higher their aspiration about the education of their children

3. Explanation for the proposed relationship

Higher the education higher the age at marriage:
Argumentation: For getting high levels of education the youth spend about 16 years of their life in educational institutions.

Usually complete their schooling at age 22 years. Spend about 2-3 years for establishing themselves in their careers. During the whole of this period marriage is deferred. So with hi education the age at marriage goes up.

Compare

- By the time highly educated youth decide to marry they are 25yrs.
- Compare marriage at age 25 yrs. with marriage at age 16 yrs.
- With this higher age at marriage there is a reduction in reproductive period of women.
- Many of these women may be career women. Should they spend time to raise the children or to pursue the career. Rational decisions about the use of contraceptives. Family limitation is the option.

4. Inventory of propositions

The relationships specified under item 2 can be examples of propositions. Formulate additional propositions by using other combinations of variables.

5. Arrange propositions sequentially

- Higher the education, more the rationalism. Higher the rationalism, more the investment in career achievement. Greater the investment in career achievement, higher the age at marriage. Higher the age at marriage, shorter the reproductive period.
- Shorter the reproductive period, smaller the size of family.
- Use of contraceptive may be an intervening variable

6. Schematic diagram

RESEARCH METHODS

RESEARCH METHODS

Lecture 11

PROBLEM DEFINITION AND RESEARCH PROPOSAL

First step in research process

- No formula for the selection of topic.
- Starts with a broad area of interest.

- Interest from a variety of sources:

- Personal experiences.
- Mass media.
- Developments in knowledge.
- Solving problems (Org., family).
- Hot issues of daily life.

Broad area of interest

- Family →Trends in Pakistani family
- Population →Aging population
- Labor Unions →Protecting the rights of members.
- Marketing →TV commercials

Narrowing the topic

- Try to get background information from different sources.

Examine the literature

- Published articles are excellent sources of ideas for research questions.
- Already specific and suggest research questions. Focus on the following:

a. Explore unexpected findings discovered in previous research.

b. Follow future research suggestions.

c. Apply existing theory to new topic.

d. Challenge the previous findings.

e. Specify the intervening process

Talk over ideas with others

- Share ideas with knowledgeable people
- Seek out those who differ. Discuss possible research questions with them.

Apply to a specific context

- Focus onto a specific historical period.
- Narrow the topic to a specific society.
- Consider which subgroups are involved – expected differences

From research question to hypotheses

- Tentative answers to questions – identification of variable (Family, population, labor unions)
- Argumentation – propositions
- Testable propositions – hypotheses
- Interrelationship of propositions – framework

Problem Definition

- From broad to specific concern
- Present problem statement in clear and precise manner.
- Problem could be an existing business problem identified by the manager
- Scope for future improvement
- Areas needing conceptual clarity
- Curiosity of the researcher

Sponsored Researches

- Symptoms of issues identified – tip of the iceberg – underlying factors to be identified.
- Management dilemmas to be translated into research questions
- Terms of reference
- Some steps may not get emphasis.
- Management's research decisions based on the urgency of the study, time available, existing information, and cost-benefit equation.

Research Proposal

- Document that presents a plan for a project to reviewers for evaluation.
- Can be a supervised project or a project proposed to funding agency.
- Convince the reviewers about the capability of the researcher.
- For funded projects the researchers need to show the track record of past success.

Research proposal sections

- Introduction (background, objectives, significance)
- Research design (data collection technique, population, sample, tools, fieldwork, data processing and analysis)
- Report writing
- Time schedule
- Research Team
- Budget

RESEARCH METHODS

RESEARCH METHODS

Lecture 12

THE RESEARCH PROCESS

Research Process

- Usually treated as sequentially defined steps. Nevertheless:
- Completion of each step before going to next is not required.
- Idea of sequence is useful for developing a research project.
- Variation in the number of steps

1. Broad Problem Area

- General area of study (Organization).
- Specific issues that need to be focused in the broad area.
- Problem currently existing in an organization (sexual harassment).
- Areas that a manager believes to be improved (policy improvement).
- Conceptual issue (harassment).
- Research questions to be answered empirically.

2. Preliminary Data Collection

- Part of exploratory research
- Search for published data and studies.
- Seek out informants
- Focus group discussions

3. Problem Definition

- Translate the broad issue into a research question.
- Management dilemma into management question – symptoms of the problem. Productivity decline. Demand for daycare facilities

4. Theoretical Framework

- Consultation – identification of variables, make logical relationships, delineation of framework.
- Components of theoretical framework already discussed.

5. Generation of Hypotheses

Derive the hypotheses from the theoretical framework.

6. Research Design

- Master plan for collecting and analyzing the data.
- Specify the sources of information and the techniques to be used in the study.
- Broadly 6 methods – surveys, experiments, observations, communication analysis, case study, focus group discussions. Secondary data analysis.

Determine the method to be used

Objectives of the research, data sources, urgency of the decision, cost of obtaining the data will determine the method.

Surveys

- The most common method of generating primary data.
- Sample of people using questionnaire.
- Questionnaire an essential tool.
- Contact the respondents in person, by telephone, by mail, on the internet.
- Each of these techniques has advantages and disadvantages.
- Choose the most appropriate one.

Experiments

- Establish cause and effect relationship.
- Manipulating X affects on Y.
- Productivity affected by rewards.
- Controlled conditions – isolate causal factors – control external factors.
- Lab experiments and field experiments.

Observation techniques

Non participant and participant.

Communication analysis

- Analyzing the content of text.
- Content refers to words, meanings, pictures, symbols, ideas, themes, messages.
- Text is anything written, visual, or spoken
- Books, newspapers, advertisements, speeches, official documents, photographs, films, articles of clothing, works of art.

Case study

- In-depth analysis of a unit.
- Clinical analysis in retrospect.
- Multiple sources of information – history, consulting written records.

Focus group discussions

- Discussion of an issue by 6-12 persons assisted by a moderator.
- Useful in exploratory research. Supplements the quantitative information.

No one method is best

- Researchers evaluate and select the most appropriate method.

7. Data collection, data processing and analysis

- Integral part of research design.
- Variety of ways. Field and lab.
- Interviews, questionnaires, observation.
- Data processing – editing, coding, computer entries, tabulation.

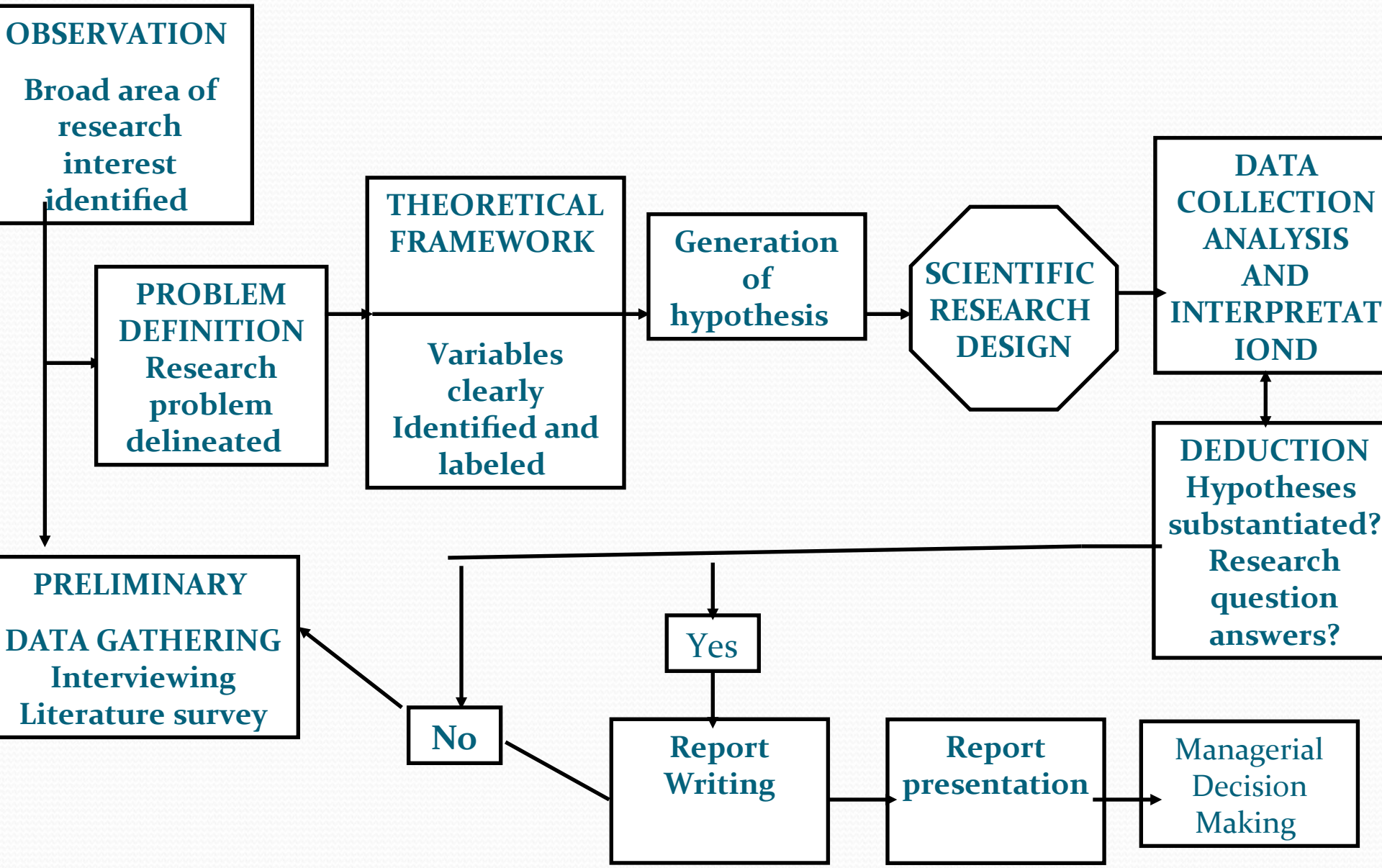
8. Testing the Hypotheses

- Interpretation of data.
- Testing the hypotheses.
- Finding solutions to problems of organization or society.
- Making recommendations

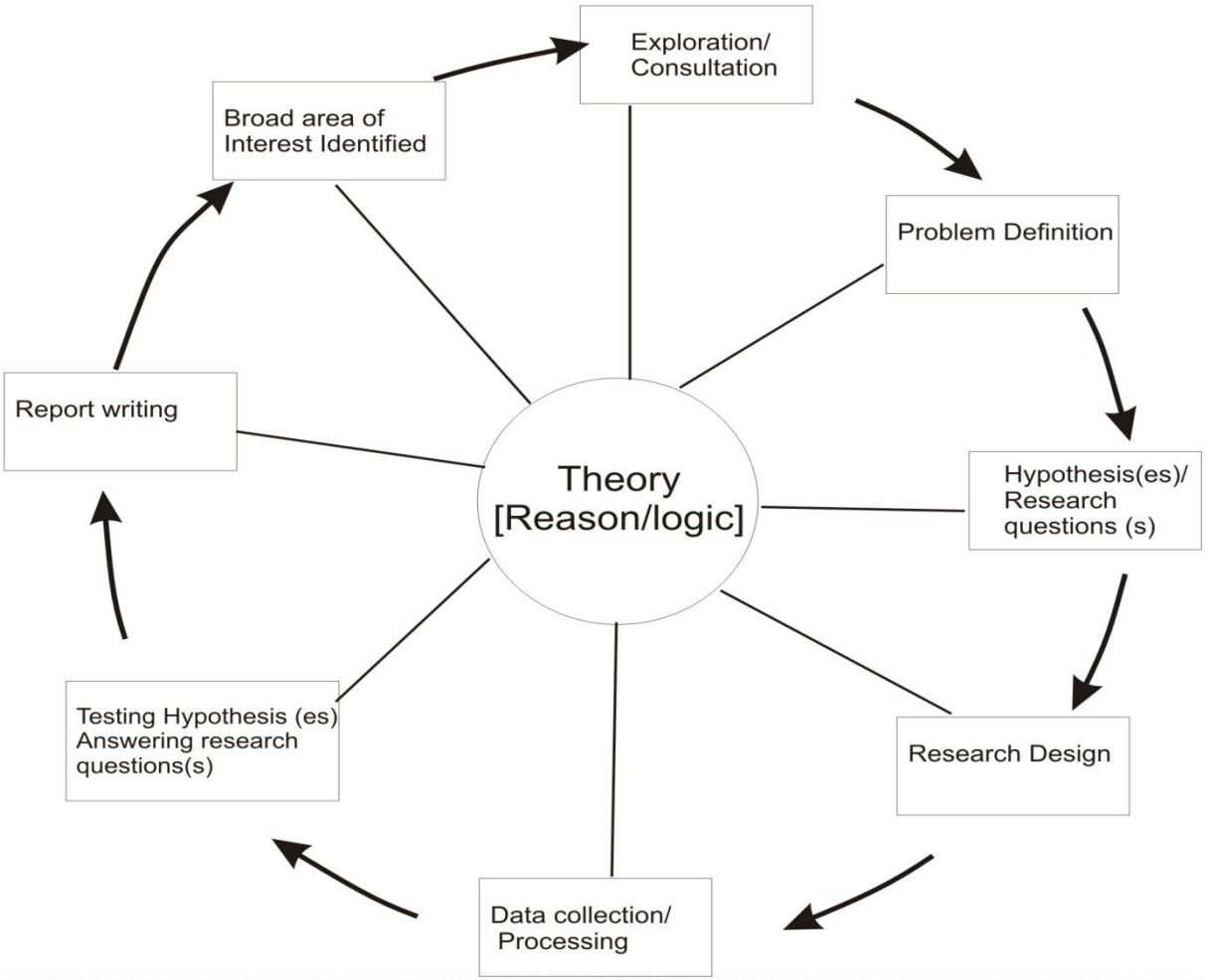
9. Report Writing

- Communicating the research findings.
- Report is technical. Managers are selective readers. Interested only in recommendations.
- Historical document.
- Academic purpose – dissertations. Specific format. Writing of research papers

The Research Process



STEPS IN SOCIOLOGICAL INVESTIGATION



RESEARCH METHODS

RESEARCH METHODS

Lecture 13

ETHICAL ISSUES IN RESEARCH

Codes of ethic applicable at each stage of the research.

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.

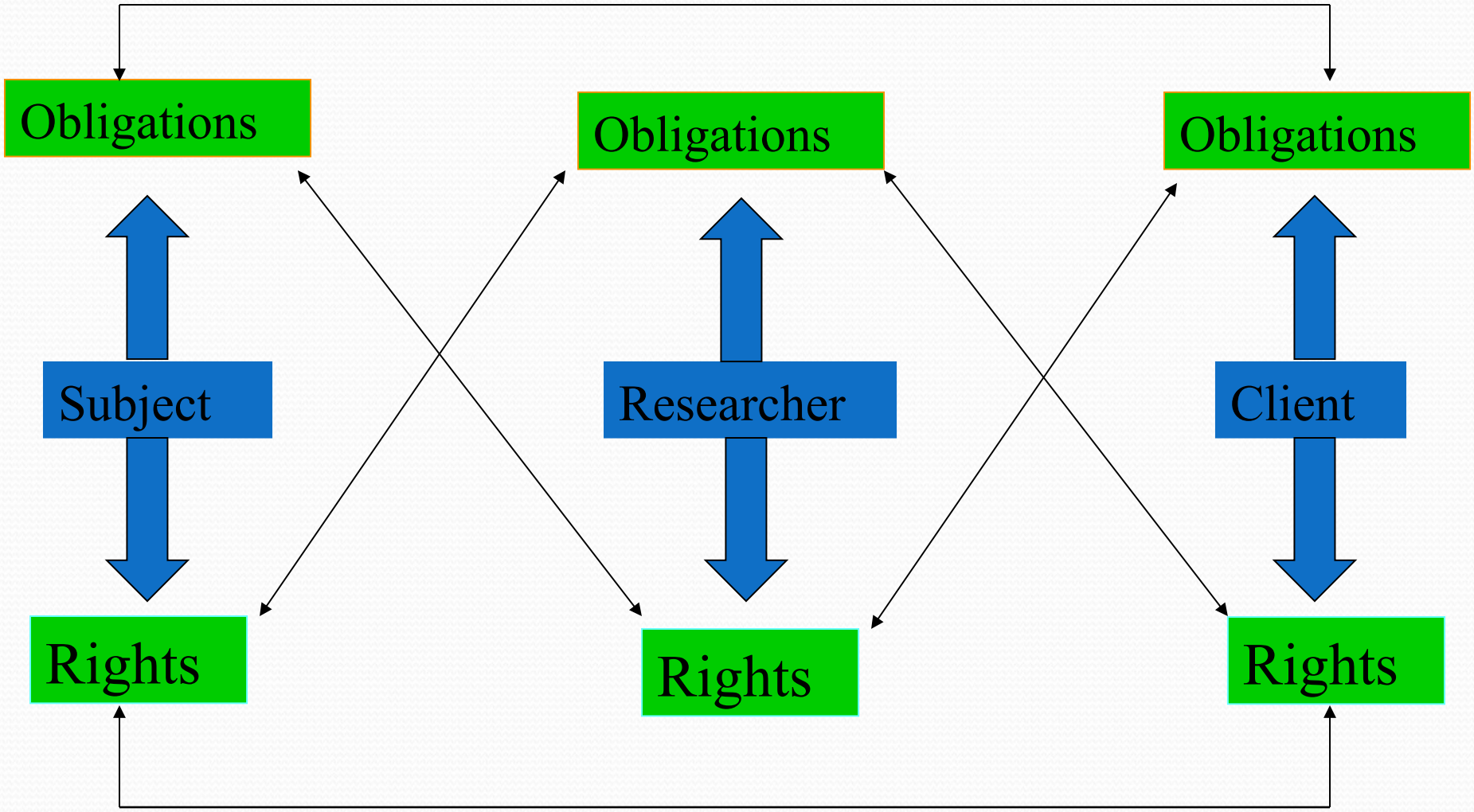
Anticipate ethical dilemmas

- 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)
- The respondent (subject)
- Interaction requires ethical questions.
- Each party expects certain rights and feels certain obligations.

Interaction of rights and obligations of parties in research



Ethical Treatment of Participants

Rights of the participants

- No physical harm, discomfort, pain, embarrassment, or loss of privacy.

Follow three guidelines:

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

Benefits

- Discuss the study's benefits.
- Can be part of establishing rapport.
- Further inducements to participate. Should not be used as coercive measure.
- Note that sometime actual purpose is concealed jut to avoid the bias. This deception.

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ETHICAL ISSUES IN RESEARCH (Continued)

Deception

- Truth is fully compromised. Debatable
- Two reasons for deception:
- (1) To prevent biasing. (2) To protect the confidentiality of the third party.
- The cost and benefits of deception to be balanced. More benefits – scientific, educational, or applied value.
- Respondents must have given informed consent.

Informed consent

- Disclosing fully the procedures of the study prior to requesting to proceed with the study.
- Exceptions for children. Parents to sign.
- How about non-literates? Oral consent.
- Types of limits about confidentiality, or of any harm to be explained.
- In case of intentional deception, debriefing is necessary

Debriefing

- After data collection.
- 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.
- A goodwill gesture. (experiments)

Right to Privacy

- Help retain the validity of research
- Protect the respondents through confidentiality of the survey answers.
- One has the right to refuse to be interviewed, or to refuse to answer any question in interview.
- One can withdraw from the experiment

Several ways to protect the confidentiality

- Obtaining signed nondisclosure documents.
- Restricting access to respondent's identification
- Revealing respondent information only with written consent.
- Restricting access to data instruments where the respondent is identified.
- Nondisclosure of data subsets.

The obligation

Once agreeing to participate, the subject should provide truthful answers. Honest cooperation is the main obligation.

Ethics and the Sponsor

Confidentiality of Sponsor

Several types of confidentiality:

- Sponsor nondisclosure (due to sensitive nature of the research. No influence of the sponsor)
- Purpose nondisclosure (new idea to be hidden from competitors).
- Findings nondisclosure (findings may not go to any interested parties)

Right to quality research

It includes:

- 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 data collected.

Sponsor's Ethics

- Unethical demands.
- Violating respondent confidentiality.
- Changing data or creating false data to meet the desired objective.
- Changing data presentation or interpretation.
- Interpreting data from a biased perspective.
- Omitting sections of data analysis and conclusions.
- Making recommendations beyond the scope of data collected.

Researchers and Team Members Ethics

Safety

- Project design should ensure that safety of all interviewers, surveyors, experimenters, or observers is protected
- Ensure researcher's right to safety.

Ethical Behavior of Assistants

- Ethical compliance by Assistants.
- Carry out the sampling plan, interview or observe respondents without bias, accurately record data.

Protection of Anonymity

- Protect the confidentiality of the sponsor's information and anonymity of the respondents.
- Sign a confidentiality and nondisclosure statement.

Professional Standards

- Many Corporations, Professional Associations, and Universities have code of ethics.
- The code of ethics to be enforced.
- Professional standards of ethics to be observed.

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MEASUREMENT OF CONCEPTS

Concept

- A generalized idea about a class of objects, attributes, occurrences, or processes
- A sign, symbol, letter, word, name, number that stand for observable reality
- A construct that stands for phenomenon but not the phenomenon itself
- For purposes of research the phenomenon is measured

Measurement

- Measurement is a daily routine : casual measurement or by using a standard.
- Established yardstick verifies the height, weight, or another feature of a physical object.
- Also measure the qualities of objects → attitude, perception, motivation.
- In research, measurement is rigorous.

In dictionary sense, measurement is

- To measure is to discover the extent, dimensions, quantity, or capacity of something, especially by comparison with a standard.

In research

- Measurement is a process of ascertaining the extent or quantity of the concept, idea, or construct
- Follow some measurement procedure. Come up with empirical data that represent the concept.
- Use some existing yardstick, standard or develop your own.

What is measured?

- Variable → can be objects or properties.
- Objects include things.
- Properties are characteristics of objects.
- Person's properties: physical, psychological, social.
- Researchers to measure through indicators.
- Easier to measure visible properties than invisible. Invisible creates measurement issues.

Example

- Studying people attending an auto show of year's new models.
- Just male to female ratio of attendees.
- Record F for female and M for male. Or use some other symbol like 0 and 1 and decide which number stands for which group

Example (cont.)

- Researchers might also want to measure the desirability of the styling of new Espace van.
- They interview a sample of visitors and get their opinions.
- Assign numbers to their responses, with a different mapping rule like:
- What is your opinion of the styling of the Espace van? Opinion rating scale.
- V. desirable 5__4__3__2__1 V. undesirable
- This is a form of measurement.

Measurement issues

- Easier to measure physiological phenomena – height, weight.
- Difficult to measure subjective attributes – feelings, attitudes, ideology, deviance, perceptions.
- Devise techniques to measure the “invisible” – Teacher morale.
- Empirical reality → create instrument for its measurement.

Measurement in quantitative research

- Designing precise ways to measure variables is vital step at the planning stage.
- Develop techniques that can produce quantitative data. Move from abstract ideas to produce precise numerical information.
- Contemplate and reflect on concepts prior to the gathering of data. Qualitative researchers mostly do it during data collection.

Quantitative measurement

- Consists of assigning numbers to empirical events in compliance with set rules. Hence measurement is a three part process:

a. Selecting empirical reality – concept

b. Developing a set of mapping rules: a scheme for assigning number or symbols to represent aspects of the event being measured.

c. Applying the mapping rules to each observation of that event – data collection

Parts of Measurement Processes

Researcher takes the concept, idea, or construct and develops a measure.

Use two processes:

a. Conceptualization

b. Operationalization

a. Conceptualization

- Taking the construct and refining it by giving it a conceptual or theoretical definition. Definition in abstract terms.
- Single concept – could be many definitions; depending upon the theoretical frameworks used. *Social class*
- A good definition has one clear, explicit, and specific definition. *Morale*
- Prior to measurement we need a concept. Should know what you are looking for.

Example; Teacher morale

- What is morale? Is it a variable?
- Develop a conceptual definition.
- Look at everyday understanding of morale. How people feel about things?
- Look in the dictionary: confidence, spirit, zeal, mental condition toward something.
- Look into review of literature

Teacher morale

- Morale involves a feeling toward something else; a person has morale with regard to something. "somethings"
- 'Some things' toward which teachers have feelings → Some things could be:

- Students, parents, pay, the school administration, other teachers, the profession of teaching.

Dimensions of construct

- Are there several kinds of teacher morale or are all these ‘somethings’ different aspects of one construct (morale)?
- A single general feeling with different parts – call them as dimensions.
- Unit of analysis will determine – construct will apply to individual or group.
- Also who is a teacher?

b. Operationalization

- Linking conceptual definition to a specific set of measurement procedures.
- Specifies what the researcher must do to measure the concept under investigation.
- What specific activities to be undertaken for measuring the concept?
- Look at the behavioral dimensions, translate into observable elements, ask questions, and develop index of measurement. Example.

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RESEARCH DESIGN

Research Design

- A master plan specifying the methods and procedures for collecting and analyzing the data.
- A strategy or blueprint that plans the action for carrying through the research data.

Elements

- Series of components of research design

1. Purpose of the Study

- Study can be exploratory, descriptive, and explanatory.
- Present study can't be exploratory. We have already covered long distance.
- Can be either descriptive or explanatory.
- Who, what, where, when, or how much?
- Why? Explains the relationship.

Purpose determines how rigorous the study will be

- Decide about the purpose.
- Within explanatory →
  - Correlational: identification of factors associated with the problem.
  - Causal: establish definite cause-and-effect relationship.
- Help in deciding the mode of observation.

2. Unit of Analysis

- Refers to the level of aggregation of the data during data analysis stage.
- Is it at the individual, or at group, or at organization level.
- Raise the motivation level of employees. Collect data from individual employees. Aggregate analysis of information collected from individuals. Unit of analysis is *individual*.

- Study two person interaction – then several two person groups will become the unit of analysis (husband-wife, supervisor-subordinate, teacher-student – dyads)
- Group effectiveness – unit of analysis is group. Comparing different departments in the work organization.
- Research question determines the unit of analysis. Affects the data collection methods, sampling.
- Unit of *observation*. Information provider. Sometimes observe indirectly.

3. Time Dimension

- Make observation more than one time i.e. over a long period.

1. Cross-sectional studies.
2. Longitudinal studies. Repeated over an extended period. Employees behavior before and after top management change

- ❑ Panel studies
- ❑ Cohort studies

4. Researcher Control of Variables

- Researcher's ability to manipulate variables.
- Experimental design.

a. Non-contrived: natural environment. Field experiment. Correlational studies.

b. Contrived: artificial setting. Causal

- Ex-post-facto design. No control over the variables. Report only what has happened or what is happening. Survey research.

5. Mode of observation

- Depending upon the type of study (qualitative or quantitative, descriptive or causal, cross-sectional or longitudinal, contrived or non- contrived) researcher decides about the mode of observation.
- Survey, experiment, field observation, case study, focus group, communication analysis.

6. Sampling Design

- Selecting some of the elements in the population and draw conclusions about the total population.
- Population element is the subject on which measurement is being taken.
- Has its advantages and disadvantages.
- Selection of appropriate sampling design.

7. Observation Tools

- Questionnaire
- Interview schedule
- Interview guide
- Check list
- Researcher will specify the instrument along with justification of its appropriateness.

8. Field Data Collection

- Depending on the mode of observation, the researcher will outline the procedure.
- Field team selection, training, supervision.

9. Data Processing and Data Analysis

- Manual vs. mechanical data processing.
- Quantification of data. Data reduction (score index), tabulation.
- Data analysis plan: use of statistics, interpretations

Survey Research: An Overview

- Method of gathering primary data based on communication with a representative sample of individuals.
- Survey requires asking people (respondents) for information, using either verbal or written questions.
- Collect data on telephone, face-to-face, or other communication media.

Steps in Conducting Surveys

- Researcher follows a deductive approach.
- Begins with theoretical or applied research problem and ends with empirical measurement and data analysis.
- It has six broad steps.

1. Decide on the Type of Survey

- Type of survey → Mail, interview, telephone, computer assisted.
- Develop the instrument: questionnaire or interview schedule. Both are list of questions.
- Questionnaire: respondents read the questions themselves and mark answers on the questionnaire.
- Interview schedule: questions read to the respondent by an interviewer, who also records the answers.

2. Plan How to Record Data

- Researcher thinks ahead how the data shall be recorded and organized for analysis.
- Pilot test survey instrument on similar population.

3. Decide on Target Population

- Get sampling frame
- Decide on sample size
- Select the sample

4. Do the Field Work

- Locate sampled respondents in person, telephone, or by mail.
- Conduct interviews or administer questionnaires
- Carefully record the data.

5. Data Processing

- Enter data into computers
- Data cleaning
- Tabulation
- Perform statistical analysis on data.

6. Research Report

- Describe methods and findings in research report
- Present findings to others for critique and evaluation

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SURVEY RESEARCH

Two approaches to collect primary data

1. Observe → conditions, behavior, events, people, or processes
2. Communicate with people.

- Selected approach determines the research design to be followed.

Communication Approach

- Involves surveying people and recording their responses for analysis.
- Versatile approach: variety of communication media can be used.
- Traditional communication media – Human interactive media.
- Modern communication – use of digital technology – Electronic interactive media.
- Non-interactive media.

Human Interactive Media

- Personal forms of communication. Face to face interaction of individuals and or groups.
- Can also be conversation on telephone

Electronic Interactive Media

- Use of digital technology to reach people.
- Respondents are actively involved. Internet – new electronic interactive media

Non-Interactive Media

- Traditional questionnaire received by mail
- Self administered questionnaires
- Questionnaires delivered through other means – Fax machine, uploading on internet, printing in the newspaper.

Choosing a Communication Media

Once decided about doing survey then collect data by using different media:

- Personal interviewing
- Telephone interviewing
- Mail questionnaire
- Self-administered questionnaire
- Computer assisted medium
- Mixed media

Personal Interviewing

- Face to face interaction between strangers
- Respondent provides information with little hope to receive any immediate or direct benefits.
- Personal interview can take place anywhere.

Advantages of Personal Interviewing

1. The opportunity for feedback

- Clarify respondent's apprehensions. Assurance for confidentiality.
- Clarify questions asked. Clarify instructions given for responses.
- Debriefing

2. Probing Complex Questions

Probing implies the verbal prompts made by the interviewer when:

- Response is not clear.
- Enlargement of the response is needed.
- More needed in open ended questions.

3. Length of Interview

Compared with other interviews personal interviews can be lengthy, if needed.

4. High Completion Rate

- Interviewer to make sure that all applicable questions have been answered.
- In telephone, the respondent may just hang up in the middle.
- Personally administered questionnaire have high incompletion rate. Respondents don't want to write long answer for open ended questions.
- Item non-response: failure to provide an answer to a question. Low in personal interviewing

5. Props and Visual Aids

Can see the new product sample, taste a product and give his/her evaluation. It is not possible for telephone interview or a mail survey.

6. High Participation Rate

- The presence of the interviewer increases the % of people to participate.
- No reading, no writing – only talking. Share their feelings with friendly and sympathetic interviewers.

7. Observing the Non- Verbal Behavior

Interviewer can catch the body language, facial expressions. Observe the environment as well.

8. Non-Literates can Participate

Illiterate or functionally illiterate person can take part in the study.

9. Interviewer can Prescreen Respondent

- Respondent to fit the sampling criteria.
- Interviewer has some control over the environment.
- No control in mail survey, telephone interview, or internet interview

10. Computer Assisted Personal Interviewing

- Computer Assisted Personal Interviewing (CAPI) – Use of modern technology
- Microcomputers can be used for direct entry of responses. Reduces error and cost

Disadvantages of Personal Interviewing

1. High Cost

- Geographical proximity, length of questionnaire, No. of recalls – influence cost
- Training, supervision, logistical arrangements add to the cost.
- Estimates show 15 times higher than mail survey.

2. Scarcity of Highly Trained Interviewers

For quality study we need quality interviewers

3. Callbacks –A Labor Intensive Work

- Callbacks are attempts to re-contact the missing sample cases.
- Labor intensive work – increases cost.

4. Interviewer Influence

Demographic characteristics of the interviewer can influence the respondent's responses.

5. Interviewer Bias

Biases in understanding, recording, and interpreting the responses

6. No Opportunity to Consult

Interview may take place anywhere – the respondent unable to consult any record or person in case he has to.

7. Less Standardized Wording

- Interviewers may make alterations in wording, and sequencing of questions.
- Bias the data

8. Limitations of respondents' availability and accessibility

Some executive officers and VIPs are never available or not willing to talk to researchers.

9. Some neighborhoods difficult to visit

- Security reasons
- Some neighborhoods may not allow outsiders. Some others may be scary for the interviewers.

Door to Door Interviews

- Personal interviews at respondent's home or place of work.
- More representative than others. We walk through. Can catch those without phones or having unlisted numbers.
- May exclude living in multiple dwellings, high rise buildings, executives.
- People who are at home are special type – moms, retired persons

Intercept interviews in shopping mall

- Shoppers are interviewed at a central point in the mall or at the entrance.
- Low cost.
- Incidence of refusal is high.
- May not be a representative sample of the population.
- Each mall will have its own characteristics.
- High traffic areas – some fast food center

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Intercept Interviews in Mall

Telephone Interviewing

- Mainstay of commercial survey research.
- Data quality comparable to personal interviewing.
- Respondents may more willing to give their opinions on phone.
- TS can provide representative samples of general pop in industrialized countries.

Central Location Interviewing

- Conduct all interviewing from central location.
- Wide-Area Telecommunication Service (WATS) lines provided by long distance service at fixed rates, unlimited calls.
- Hire professional interviewers
- Supervise and control the quality of interviewing.
- Research cost-effective.

Computer Assisted Telephone Interviewing (CATI)

- Responses to be entered directly to computer.
- Telephone interviewers seated at computer terminals.
- Monitor displays the questionnaire – one question at a time, pre-coded responses.
- Interviewer enters the responses in computer
- Programming facilitates interviewing.

The Strengths of Telephone Interviewing

1. High Speed

- Quickly reach the respondents.
- With CATI quick data processing.

2. Saves Cost

- Cost of telephone interviewing is less than 25% of the door to door personal interviews.

3. Callbacks Easier

- Unanswered calls, busy signal, respondent not at home needs callback.
- Telephone callbacks are substantially easier and less expensive than personal interviews.

4. Expanded Geographic Area Coverage without increasing the cost.

5. Uses fewer but highly skilled Interviewers.

6. Reduced Interviewer Bias

7. Better Access to hard-to-reach respondents

- Some people don't want to go for person to person interviewing. Prefer telephone interviewing.
- Interviewers may be reluctant to visit certain neighborhoods, especially in the evening. Telephone interviewing overcomes such problems

8. Use Computer Assisted Telephone Interviewing

- Responses can be directly entered into computer file to reduce error and cost

Weaknesses of Telephone Interviewing

1. Absence of Face-to- Face Contact

- More impersonal than face-to-face interviews.
- Absence of face-to-face contact may be a liability. Respondent and the interviewer don’t see each other what they are doing. (Respondent still responding when he/she is thinking and not speaking. Has the interviewer finished recording)

2. Response rate lower than for Personal Interviews

- Some individuals refuse to participate. (Executives easily refuse. Participants find it easier to terminate).

3. Lack of Visual Medium

- Research requiring visual material cannot be conducted by phone.

4. Limited Duration

- Length of interview limited. Respondent may hang up when they feel spent up.
- (Plan telephone interviews approximately for 10 minutes)

5. Many Numbers Unlisted or not Working

- Can affect the sampling design.

6. Less Participant involvement

- Result In less thorough responses.
- Respondents' experiences less rewarding than a personal interview.
- Rapport building deficient.

7. Distracting Physical Environment

- Distractions on the side of the respondent.

Self Administered Questionnaires

- Ubiquitous in modern living.
- Mail questionnaires + other modes

Advantages of Mail Questionnaire

1. Geographic Flexibility: Reach all corners of the country/world.
2. Sample Accessibility: Contact those who may inaccessible.
3. Save Time
4. Saves Cost
5. Respondent Convenience
6. Anonymity
7. Standardized Questions

Disadvantages of Mail Questionnaire

1. Low Response Rate
2. Low Completion Rate
3. Increases Cost
4. Interviewer's Absence
5. No Control on Question Order
6. Cannot use Lengthy Questionnaire
7. No Control Over Environment
8. Cannot catch the non-verbal behavior
9. Non-Literates cannot Participate

Increasing Response Rate

- Cover Letter
- Money Helps
- Interesting Questions
- Follow-Ups
- Preliminary Notification
- Survey Sponsorship
- Other Techniques: Questionnaire format, facilitating the return, postage, personalization.

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Self Administered Questionnaire

Increasing Response Rate

- Response rate is the number of questionnaires returned or completed, divided by the total number contacted.
- Response rate of self administered questionnaires is low.
- Here are some guidelines for increasing response rate.

1. Cover Letter

- An important means of inducing a reader to complete and return the questionnaire.
- Establish rapport by telling: why this study, who is the sponsor, how was subject selected, assuring the anonymity.
- Make it a personal letter, individually typed on a personal letterhead.

2. Money Helps

- Offer monetary incentives or rewards.
- Attracts the attention and creates a sense of obligation

3. Interesting Questions

- Topic and related questions cannot be changed.
- Certain interesting questions may be added, perhaps in the beginning, to stimulate the respondent's interest.

4. Follow-Ups

- Reminders
- May include another copy of the questionnaire.
- Number of reminders to be sent.

5. Preliminary Notification

- Preparing the respondent through advance notice through letter/telephone.
- Notify closer to the questionnaire mailing time.
- Depends upon the infrastructure, nature of study, and the type of respondents.

6. Survey Sponsorship

Goodwill of the sponsor may influence the response rates.

7. Facilitate the Return of Questionnaire

- Simplify the return.
- Inclusion of self addressed stamped envelope encourages the response.

8. Postage

- Expedited delivery may be effective.
- Use first class mail.
- Use special stamps (if available) in place of metered mail

9. Personalization

Personal inside address, personally typed cover letter, and individually signed letter may make some difference.

10. Size, Reproduction, and Color

- Use A-4 size paper.
- Good quality of paper.
- Attractive printing.
- Use different colors for different parts.
- Do not fold the questionnaire.

11. Make use of all the techniques simultaneously (Total Design Effort – TDE)

E-Mail Surveys

- Relatively new method of communication.
- Quite frequently used where possible.

Advantages of E-Mail Surveys

- Speed of distribution.
- Lower distribution and processing cost.
- More flexibility.
- Less handling of paper questionnaires.
- Many respondents more comfortable in impersonal communication.

Disadvantages of E-Mail surveys

- “Eves-dropping” of e-mails by organization.
- Maintaining anonymity is difficult. Sender’s address is there.
- Not all e-mails have the same capacity: software limitations.

Internet Surveys

- Self administered questionnaire posted on a Web-site.
- Respondents provide answers to questions displayed on screen by highlighting a phrase, clicking an icon, keying in the response

Advantages of Internet Surveys

Speed and Cost Effectiveness

- Reach a large audience, personalize the messages, secure confidential answer quickly and cost effectively.
- Eliminates the cost of paper, postage, data entry, and other administrative costs.
- Incremental cost of reaching additional respondents is marginal. Hence enlarge the sample.

Visual Appeal and Interactivity

- Internet surveys can be interactive.
- Use color, sound, animation which may increase respondent motivation.
- Visual material can be presented.

Respondent Participation

- Some computer users navigate to a particular Web site where questions are displayed.
- Expect participation and cooperation

Accurate Real-Time Data Capture

- Respondents responses entered as soon as the questionnaire is submitted. (software for data cleaning as well)
- Researcher can review up-to-the-minute sample size counts and tabulation of data.

Callbacks

- Depending upon the sampling frame. Easier to callback.
- Those sending incomplete questionnaires can also be identified.

Personalized and Flexible Questioning

- No interviewer in Internet survey but the software interacts with the respondent.
- Computer asks question in a sequence determine by respondents previous answer.

Respondent Anonymity

- Respondents feel comfortable in sharing sensitive information.
- No interviewer, no address

Response Rate

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

Disadvantages of Internet Surveys

All People cannot Participate

- Many people do not have access to Internet facility.
- All with access do not have the same level of technology.
- Many lack powerful compatible software.
- Some may have no skills to navigate.

No Physical Incentive

- Physical incentives cannot be sent

Selecting the Appropriate Survey Research Design

- No “best” form of survey.
- Compare the research objectives with the strengths and weaknesses of each method. Also
- How much confidentiality is necessary? See which method can best deliver.

Ask question like:

- Is the assistance of interviewer necessary?
- Are respondents likely to be interested in the issues being investigated?
- Will cooperation be easily attained?
- How quickly the information be easily attained?
- How quickly the information is needed?
- Will the study require a long complex questionnaire?
- How large is the budget?

The Criteria

- The cost, speed, anonymity, and the like may be different for each project.
- If none is a good fit, then use *mixed method*.

RESEARCH METHODS

Lecture

Midterm Syllabus
Lecture # 1, 3, 6, 7, 9-15, 19-22

Efforts By

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Contact us to join our esteemed group

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