

# Research Methods

**Dr Samy Tayie**  
**Professor,**  
**Faculty of Mass Communication,**  
**Cairo University**

**email: [stayie@link.net](mailto:stayie@link.net)**

# Chapter One

## SCIENTIFIC RESEARCH

## **Objectives:**

**This chapter aims at increasing the trainees' knowledge in the following areas:**

- Characteristics of the scientific research**
  - Sectors of Research**
  - Research Procedures**

# **CHARACTERISTICS OF THE SCIENTIFIC METHOD**

**Five basic characteristics, or distinguish the scientific method from other methods of knowing.**

**A research approach that does not follow these tenets cannot be considered to be a scientific approach.**

# ***1. Scientific research is public.***

**Scientific advancement depends on freely available information. Scientific research information must be freely communicated from one researcher to another.**

## ***2. Science is objective.***

**Objectivity requires that scientific research deals with facts rather than interpretations of facts.**

**Science rejects its own authorities if their statements are in conflict with direct observation.**

### ***3. Science is empirical.***

**Researchers are concerned with a world that is knowable and potentially measurable. (*Empiricism* is derived from the Greek word for "experience").**

**They must be able to perceive and classify what they study and to reject metaphysical and nonsensical explanations of events.**

## ***4. Science is systematic and cumulative.***

**No single research study stands alone, nor does it rise or fall by itself.**

**One of the first steps taken in conducting research is to review the available scientific literature on the topic so that the current study will draw on the heritage of past research .**

**This review is valuable for identifying problem areas and important factors that might be relevant to the current study.**

## **5. Science is predictive.**

**Science is concerned with relating the present to the future.**

**In fact, scientists strive to develop theories because, for one reason, they are useful in predicting behavior.**

**A theory's adequacy lies in its ability to predict a phenomenon or event successfully.**

# RESEARCH PROCEDURES

**The use of the scientific method of research is intended to provide an objective, unbiased evaluation of data.**

**To investigate research questions and hypotheses systematically, both academic and private sector researchers follow a basic eight-step developmental chain of procedures.**

**The typical eight-step research process includes:**

- 1. Select a problem.**
- 2. Review existing research and theory (when relevant).**
- 3. Develop hypotheses or research questions.**
- 4. Determine an appropriate methodology/research design.**
- 5. Collect relevant data.**
- 6. Analyze and interpret the results.**
- 7. Present the results in appropriate form.**
- 8. Replicate the study (when necessary).**

**SECTORS OF RESEARCH:  
ACADEMIC AND PRIVATE**

**The practice of research is divided into  
two major sectors:**

**academic and private.**

**Academic and private research are  
sometimes referred to as "basic" and  
"applied" research.**

**Academic sector research is conducted by scholars from colleges and universities. It also *generally* means that the research has a *theoretical* or scholarly approach.**

**Private sector research is conducted by non-governmental businesses and industries or their research consultants.**

**It is generally *applied research*; that is, the results are intended to be used in decision-making situations.**

**Differences between academic and private sector research.**

**1- For instance, academic research is public. Any other researcher or research organization that wishes to use the information gathered by academic researchers should be able to do so merely by asking the original researcher for the raw data.**

**- Most private sector research, on the other hand, generates proprietary data: the results are considered to be the sole property of the sponsoring agency and cannot generally be obtained by other researchers.**

**Some private sector research, however, is released to the public soon after it has been conducted, such as opinion polls and projections of the future of the media; still other data are released after several years, although this practice is the exception rather than the rule.**

**2- The amount of time allowed to conduct the work.**

**Academic researchers generally do not have specific deadlines for their research projects (except when research grants are received).**

**Academicians usually conduct research at a pace that accommodates their teaching schedules.**

**- Private sector researchers, however, nearly always operate under some type of deadline.**

**The time frame may be specified by management or by an outside agency that requires a decision from the company or business.**

**3- Private sector researchers rarely have an opportunity to pursue research questions in a casual manner; a decision is generally waiting to be made on the basis of the research.**

**4- Also, academic research is *generally* less expensive to conduct than research in the private sector. This is not to say that academic research is "cheap" — it is not in many cases.**

**But academicians do not need to have enormous sums of money to cover overhead costs for office rent, equipment, facilities, computer analysis, subcontractors, and personnel.**

**5. Private sector research, whether it is done within a company or hired out to a research supplier, must take such expenses into account.**

**The reduced cost is the primary reason why many of the large media companies and groups prefer to use academic researchers rather than professional research firms.**

**Despite these differences, it is important for beginning researchers to understand that academic research and private sector research are not completely independent of each other.**

**The link between the two areas is important.**



# **Chapter Two**

## **RESEARCH PROCEDURES**

**1- Selection of problem**

**2- Review of existing research and theory**

**3- Statement of hypothesis or research question**

**4- Determination of appropriate methodology and research design**

**5- Data collection**

**6- Analysis and interpretation of data**

**7- Presentation of results**

**8- Replication**

# **1. SELECTING A RESEARCH TOPIC**

**Selecting a research topic is not a concern for all researchers. In the private sector, researchers generally do not have the flexibility of selecting topics or questions to investigate. Instead, they conduct studies to answer questions raised by management or they address the problems/questions for which they are hired, as is the case with full-service research companies.**

**However, selecting a topic is a concern for many beginning researchers, especially those writing term papers, theses, and dissertations.**

**The problem is knowing where to start.**

# Sources of Topics for Research

## *Magazines and Periodicals*

**Many educators feel that publications other than professional journals contain only "watered-down" articles written for the general public.**

**To some extent this is true, but these articles tend to eliminate the tedious technical jargon and are often good sources for problems and hypotheses.**

**In addition, more and more articles written by highly trained professionals. Are appearing in weekly and monthly publications. These sources often provide interesting perspectives on complex problems and many times raise interesting questions that researchers can pursue.**

## *Research Summaries*

**Professional research organizations irregularly publish summaries that provide a close look at the major areas of research in various fields.**

**These summaries are often useful for obtaining information about research topics, since they survey a wide variety of studies.**

**Professional research organizations irregularly publish summaries that provide a close look at the major areas of research in various fields.**

**These summaries are often useful for obtaining information about research topics, since they survey a wide variety of studies.**

## *Everyday Situations*

**Each day confrontations can be excellent sources of research topics for the researchers who take an active role in analyzing them.**

**For instance in the field of communication, one may wonder: What types of messages are produced? Why are they produced in a specific way? What effects are expected from the various types of communication? These and other questions may help develop a research idea.**

## *Archive Data*

The historical data are used by researchers to investigate questions different from those which the data were originally intended to address.

**Secondary analysis** provides an opportunity for researchers to evaluate otherwise unavailable data.

Secondary analysis may be defined as: [the] reuse of social science data after they have been put aside by the researcher who gathered them.

# ***ADVANTAGES OF SECONDARY ANALYSIS***

**Ideally every researcher should conduct a research project of some magnitude to learn about design, data collection, and analysis. Unfortunately, this ideal situation does not exist.**

**1- Modern research is simply too expensive. In addition, because survey methodology has become so complex, it is rare to find one researcher, or even a small group of researchers, who are experts in all phases of large studies.**

**Secondary analysis is one research alternative that solves some of these problems.**

**2- Secondary analysis has a bad connotation for some researchers, especially those who are unfamiliar with its potential. Although researchers can derive some benefits from developing questionnaires and conducting a research project using a small and often unrepresentative sample of subjects, this type of analysis rarely produces results that are externally valid.**

**The argument here is that in lieu of conducting a small study that has limited (if any) value to other situations, researchers would benefit from using data that have been previously collected.**

**3- Another advantage of secondary analysis is that data allow researchers more time to further understand what has been collected.**

# **DISADVANTAGES OF SECONDARY ANALYSIS**

**1- Researchers who use secondary analysis are limited to the types of hypotheses or research questions that can be investigated.**

**The data already exist, and since there is no way to go back for further information, researchers must keep their analyses within the boundaries of the type of data originally collected.**

**2- Researchers conducting secondary analysis studies also may face the problems of using data that were poorly collected, inaccurate, or flawed.**

**3- Many studies do not include information about the research design, sampling procedures, weighting of subjects' responses, or other peculiarities.**

**4- Perhaps it is suspected that some of the data were fabricated. Large research firms tend to explain their procedures in detail.**

**Before selecting a secondary analysis approach, researchers need to consider the advantages and disadvantages. However, with the increased use of secondary analysis, some of the problems associated with research explanations and data storage are being solved.**

## **2. DETERMINING TOPIC RELEVANCE**

**Once a basic research idea has been chosen or assigned, the next step is to ensure that the topic has merit.**

**This step can be accomplished by answering eight basic questions.**

***Question 1:  
Is the Topic Too Broad?***

**Most research studies concentrate on one small area of a field; few researchers attempt to analyze an entire field in one study.**

***Question 2:***  
***Can the Problem Really Be Investigated?***

**Aside from considerations of broadness, a topic might prove unsuitable for investigation simply because the question being asked has no answer, or at least cannot be answered with the facilities and information available.**

**Another point to consider is whether all terms of the proposed study are definable. Remember that all measurable variables must be operationally defined.**

**One final consideration is to review available literature to determine whether the topic has been investigated. Were there any problems in previous studies? What methods were used to answer the research questions? What conclusions were drawn?**

***Question 3:  
Are the Data Susceptible to Analysis?***

**A topic does not lend itself to productive re-search if it requires collecting data that cannot be measured reliably and validly.**

**Another consideration is the researcher's previous experience with the statistical method selected to analyze the data.**

***Question 4:  
Is the Problem Significant?***

**Before a study is conducted, the researcher must determine whether it has merit, that is, whether the results will have practical or theoretical value. The first question to ask is, Will the results add knowledge to the information already available in the field?**

**A second question is, *What is the real purpose of the study?* This is important because it helps focus ideas. Is the study intended for a class paper, a thesis, a journal article, a management decision?**

**Each of these projects has different requirements concerning background information needed, amount of explanation required, and detail of results generated.**

**For example, applied researchers need to determine whether any useful action based on the data will prove to be feasible, as well as whether the study will answer the question (s) posed by management.**

***Question 5:  
Can the Results of the Study Be  
Generalized?***

**For a research project to have practical value — to be significant beyond the immediate analysis — it must have external validity; that is, one must be able to generalize from it to other situations.**

***Question 6:  
What Costs and Time Are Involved in the  
Analysis?***

**In many cases the cost of a research study is the sole determinant of the feasibility of a project. A researcher may have an excellent idea, but if costs would be prohibitive, the project must be abandoned.**

**A carefully itemized list of all materials, equipment, and other facilities required is necessary before beginning a research project. If the costs seem prohibitive, the researcher must determine whether the same goal can be achieved if costs are shaved in some areas.**

**Another possibility to consider is financial aid from graduate schools, funding agencies, local governments, or other groups that subsidize research projects.**

**Time is also an important consideration in research planning.**

***Question 7:  
Is the Planned Approach Appropriate to  
the Project?***

**The most marvelous research idea may be greatly, and often needlessly, hindered by a poorly planned method of approach. For example, a researcher who wished to measure any change in attendance at movie theaters that may have accompanied the increase in television viewing in one city could mail questionnaires to a large number of people to determine how media habits have changed during the past few years.**

***Question 8:  
Is There Any Potential Harm to the  
Subjects?***

**Researchers must carefully analyze whether the project may cause any physical or psychological harm to the subjects under evaluation. For example: Will respondents be frightened in any way? Will they be required to answer embarrassing questions or perform embarrassing acts that may create adverse reactions? Is there any possibility that the exposure to the research conditions will have lasting effects?**

## **2. REVIEWING THE LITERATURE**

**Researchers who conduct studies under the guidelines of scientific research *never* begin a research project without first consulting available literature. The review provides information about what was done, how it was done, and what results were generated.**

**Before any project is attempted,  
researchers ask the following questions:**

- 1. What type of research has been done in the area?**
- 2. What has been found in previous studies?**
- 3. What suggestions do other researchers make for further study?**
- 4. What has not been investigated?**
- 5. How can the proposed study add to our knowledge of the area?**
- 6. What research methods were used in previous studies?**

**Answers to these questions will usually help define a specific hypothesis or research question.**

# **3. STATING A HYPOTHESIS OR RESEARCH QUESTION**

**After a general research area has been identified and the existing literature reviewed, the researcher must state the problem as a workable hypothesis or research question.**

**A hypothesis is a formal statement regarding the relationship between variables, and it is tested directly.**

**The predicted relationship between the variables is either true or false.**

**On the other hand, a research question is a formally stated question intended to provide indications about something, and it is not limited to investigating relationships between variables.**

**Research questions are generally used in situations where a researcher is unsure about the nature of the problem under investigation. The intent is merely to gather preliminary data.**

**However, testable hypotheses are often developed from information gathered during the research question phase of a study.**

# **4. RESEARCH AND EXPERIMENTAL DESIGN**

**Different research approaches are required. Some questions call for a survey methodology via telephone or mail; others are best answered through in-person interviews. Still other problems necessitate a controlled laboratory situation to eliminate extraneous variables.**

**The approach selected by the researcher depends on the goals and purpose of the study and how much money is available to conduct the analysis. Even projects that sound very simple may require a highly sophisticated and complex research approach.**

**The terms *research design* and *experimental design* have become interchangeable to refer to the process involved in developing or planning a research project.**

**Some researchers prefer to use *research design* to describe non-laboratory projects, and *experimental design* only for projects conducted in a laboratory setting.**

# Characteristics of Research Design

**There are four characteristics of research design that should be noted if a study is to produce reliable and valid results:**

## **1. Naturalistic setting.**

**For the results of any project to have external validity, the study must be conducted under normally encountered environmental conditions. This means that subjects should be unaware of the research situation, if possible.**

## ***2. Clear cause-and-effect relationships.***

**The researcher must make every effort to control in-tervening or spurious independent/dependent variable relationships. The results of a study can be interpreted with confidence *if and only* if all confounding effects are identified.**

### ***3. Unobtrusive and valid measurements.***

**There should be no perceptible connection between the communication presented to subjects and the measurement instruments used. Subjects tend to answer questions differently if they can identify the purpose of the study.**

**4. Realism. A research design must above all be realistic.**

**This necessitates a careful con-sideration of the availability of time, money, personnel to conduct the study, and researchers who are competent in the proposed research methodology and statistical analysis.**

# **5. RESEARCH SUPPLIERS AND FIELD SERVICES**

**Most researchers do not actually conduct every phase of every project they supervise. That is, although they usually design research projects, determine the sample to be studied, and prepare the measurement instruments, the researchers generally do not actually make the telephone calls or interview respondents in shopping malls.**

**The researchers instead contract with a research supplier or a field service to perform these tasks.**

# **6. DATA ANALYSIS AND INTERPRETATION**

**The time and effort required for data analysis and interpretation depends on the study's purpose and the methodology used.**

**Analysis and interpretation may take several days to several months.**

**Every analysis should be carefully planned and performed according to guidelines designed for that analysis.**

**Once the computations have been completed, the researcher must "step back" and consider what has been discovered.**

**The results must be analyzed with reference to their external validity and the likelihood of their accuracy.**

**Researchers must determine through analysis whether their work is valid internally and externally.**

# **7. PRESENTING RESULTS**

**The format used in presenting results depends on the purpose of the study.**

**Research intended for publication in academic journals follows a format prescribed by each journal.**

**Research conducted for management in the private sector tends to be reported in simpler terms, excluding detailed explanations of sampling, methodology, and review of literature.**

**However, all presentations of results need to be written in a clear and concise manner appropriate to both the research question and the individuals who will read the report.**

# 8. REPLICATION

**One important point is that the results of any single study are, by themselves, only *indications of what might exist.***

**A study provides information that says, in effect, "This is what may be the case." To be relatively certain of the results of any study, the research must be replicated.**

**Too often, researchers conduct one study and report the results as if they are providing the basis for a theory or law. This cannot be true.**



# Chapter Three

## Sampling

# **Objectives:**

**This chapter discusses different aspects related to sampling. It aims at training the trainees on how to use sampling and select the right type of sample for the research. The following topics will be handled:**

**Population and sample**  
**Probability and non-probability samples**  
**Sample size**  
**Sampling errors**  
**Sample weighting**

# **POPULATION AND SAMPLE**

**One goal of scientific research is to describe the nature of a population, that is, a group or class of subjects, variables, concepts, or phenomena.**

**In some cases this is achieved through the investigation of an entire class or group, such as a study of prime-time television programs during the week of September 10—16.**

**The process of examining every member of such a population is called a census.**

**In many situations, however, the chance of investigating an entire population is remote, if not nonexistent, due to time and resource constraints.**

**Studying every member of a population is also generally cost prohibitive, and may in fact confound the research because measurements of large numbers of people often affect measurement quality.**

**The usual procedure in these instances is to select a sample from the population.**

**A sample is a subset of the population that is taken to be representative of the entire population.**

**An important word in this definition is representative. A sample that is not representative of the population, regardless of its size, is inadequate for testing purposes: the results cannot be generalized.**

# Types of Samples

## **Two Types of Samples:**

**(1) Probability Samples**

**(2) Non-Probability SAMPLES**

**A probability sample is selected according to mathematical guidelines whereby the chance for selection of each unit is known. A non-probability sample does not follow the guidelines of mathematical probability.**

**However, the most significant characteristic distinguishing the two types of samples is that:**

- probability sampling allows researchers to calculate the amount of sampling error present in a research study;**
- non-probability sampling does not.**

**In deciding whether to use a probability or a non-probability sample, a researcher should consider four points.**

## ***1. Purpose of the study.***

**Some research studies are not designed for generalization to the population, but rather to investigate variable relationships or to collect exploratory data for designing questionnaires or measurement instruments.**

**A non-probability sample is often appropriate in situations of these types.**

## **2. Cost versus *value*.**

**The sample should produce the greatest value for the least investment. If the cost of a probability sample is too high in relation to the type and quality of information collected, a non-probability sample is a possible alternative.**

### **3. Time constraints.**

**In many cases researchers collecting preliminary information operate under time constraints imposed by sponsoring agencies, management directives, or publication guidelines. Since probability sampling is often time-consuming, a non-probability sample may provide temporary relief.**

## ***4. Amount of error allowed.***

**In preliminary or pilot studies, where error control is not a prime concern, a non-probability sample is usually adequate.**

# **Types of Non-Probability Samples**

- (1) Available Sample**
- (2) Volunteer Sample**
- (3) Purposive Sample**
- (4) Quota Sample**
- (5) Haphazard Sample**

## **(1) Available Samples**

**They are a subject of heated debate in many research fields. Critics argue that regardless of what results they may generate, available samples do not represent the population and therefore have no external validity.**

**Proponents of the available sample procedure claim that if a phenomenon, characteristic, or trait does in fact exist, it should exist in *any* sample.**

**In addition, some scholars has contested the very notion of sample representativeness.**

**Available samples can be useful in pre-testing questionnaires or other preliminary (pilot study) work.**

**They often help eliminate potential problems in research procedures, testing, and methodology before the final research study is attempted.**

## **(2) volunteer sample**

**It is another type of non-probability samples, since the individuals are not selected mathematically.**

**The characteristics of volunteer subjects can be defined on the basis of several studies and found that such subjects, in comparison with non-volunteers, tend to exhibit higher educational levels, higher occupational status, greater need for approval, higher intelligence, and lower authoritarianism.**

**They also seem to be more sociable, more "arousal-seeking," and more unconventional; they are more likely to be first children, and they are generally younger.**

**These characteristics mean that use of volunteer subjects may significantly bias the results of a research study and may lead to inaccurate estimates of various population parameters.**

**Also, available data seem to indicate that volunteers may more often than non-volunteers provide data to support a researcher's hypothesis.**

### **(3) Purposive sample**

**It includes subjects selected on the basis of specific characteristics or qualities and eliminates those who fail to meet these criteria.**

**A purposive sample is chosen with the knowledge that it is not representative of the general population; rather it attempts to represent a specific portion of the population.**

## **(4) Quota Sample**

**Subjects are selected to meet a predetermined or known percentage.**

**For example, a researcher interested in finding out how VCR owners differ in their use of television from non-VCR-owners may know that 10% of a particular population owns a VCR.**

**The sample the researcher selected, therefore, would be composed of 10% of VCR owners and 90% non-VCR-owners (to reflect the population characteristics).**

## **(5) Haphazard Sample**

**On the basis of appearance or convenience, or because they seem to meet certain requirements (the subjects *look* educated).**

**Haphazard selection involves researcher subjectivity and introduces error.**

**Some haphazard samples give the illusion of a probability sample; these must be carefully ap-proached.**

**For example, interviewing every 10th person who walks by in a shopping center is haphazard, since not everyone in the population has an equal chance of walking by that particular location. Some people live across town, some shop in other centers, and so on.**

# Types of Probability Samples

- (1) Simple Random Sample*
- (2) Systematic Sample*
- (3) Stratified Sample*
- (4) Multi-stage Sample*

## ***(1) Simple Random Sample***

**The most basic type of probability sampling is the simple random sample, where each subject or unit in the population has an equal chance of being selected.**

**If a subject or unit is drawn from the population and removed from subsequent selections, the procedure is known as random sampling *without replacement* - the most widely used random sampling method.**

**Random sampling with *replacement* involves returning the subject or unit into the population so that it has a chance of being chosen another time. Sampling with replacement is often used in more complicated research studies such as nation-wide surveys.**

**Researchers usually use a table of random numbers to generate a simple random sample.**

**Simple random samples for use in telephone surveys are often obtained by a process called random digit dialing.**

**One method involves randomly selecting four-digit numbers (usually generated by a computer or through the use of a random numbers table) and adding them to the three-digit exchange prefixes in the city in which the survey is conducted. A single four-digit series may be used once, or it may be added to all the prefixes.**

**A second random digit dialing method that tends to decrease the occurrence of invalid numbers involves adding from one to three random digits to a telephone number selected from a phone directory or list of phone numbers.**

**As indicated here, random number generation is possible via a variety of methods. However, two rules are always applicable:**

- (1) each unit or subject in the population must have an equal chance of being selected, and**
- (2) the se-lection procedure must be free from subjective intervention by the researcher.**

# Advantages

- 1. Detailed knowledge of the population is not required.**
- 2. External validity may be statistically inferred.**
- 3. A representative group is easily obtainable.**
- 4. The possibility of classification error is eliminated.**

## Disadvantages

1. A list of the population must be compiled.
2. A representative sample may not result in *all* cases.
3. The procedure can be more expensive than other methods.

## ***(2) Systematic Sample***

**Systematic samples are frequently used in social research. They often save time, resources, and effort when compared to simple random samples.**

**In fact, since the procedure so closely resembles a simple random sample, many researchers consider systematic sampling equal to the random procedure.**

**The method is widely used in selecting subjects from lists such as telephone directories ..etc.**

**The degree of accuracy of systematic sampling depends on the adequacy of the sampling frame, or a complete list of members in the population. Telephone directories are inadequate sampling frames in most cases, since not all phone numbers are listed, and some people do not have telephones at all.**

# **Advantages**

- 1. Selection is easy.**
- 2. Selection can be more accurate than in a simple random sample.**
- 3. The procedure is generally inexpensive.**

## **Disadvantages**

- 1. A complete list of the population must be obtained.**
- 2. Periodicity may bias the process.**

## **(3) Stratified Sample**

**Although a simple random sample is the usual choice in most research projects, some researchers don't wish to rely on randomness. In some projects, researchers want to *guarantee* that a specific sub-sample of the population is adequately represented.**

**No such guarantee is possible using a simple random sample. A *stratified sample* is the approach used when adequate representation from a sub-sample is desired.**

**The characteristics of the sub-sample (strata or segment) may include almost any variable: age, sex, religion, income level, or even individuals who listen to specific radio stations or read certain magazines.**

**The strata may be defined by an almost unlimited number of characteristics; however, each additional variable or characteristic makes the sub-sample more difficult to find. Therefore, incidence drops.**

## **Stratified sampling can be applied in two different ways.**

**(1) Proportionate stratified sampling includes strata with sizes based on their proportion in the population. If 30% of the population is adults 18-24, then 30% of the total sample will be subjects in this age group. This procedure is designed to give each person in the population an equal chance of being selected.**

**(2) Disproportionate stratified sampling is used to over-sample or over-represent a particular stratum.**

**The approach is used basically because the stratum is considered important for some reason: marketing, advertising, or other similar reasons.**

## **Advantages**

- 1. Representativeness of relevant variables is ensured.**
- 2. Comparisons can be made to other populations.**
- 3. Selection is made from a homogeneous group.**
- 4. Sampling error is reduced.**

## **Disadvantages**

- 1. A knowledge of the population prior to selection is required.**
- 2. The procedure can be costly and time-consuming.**
- 3. It can be difficult to find a sample if incidence is low.**
- 4. Variables that define strata may not be relevant.**

## **(4) Cluster Sample**

**The usual sampling procedure is to select one unit or subject at a time. But this requires the researcher to have a complete list of the population.**

**In some cases there is no way to obtain such a list. One way to avoid this problem is to select the sample in groups or categories; this procedure is known as cluster sampling.**

**For example, analyzing magazine readership habits of people in the state of Wisconsin would be time-consuming and complicated if individual subjects were randomly selected.**

**With cluster sampling, one can divide the state into districts, counties, or zip code areas and select groups of people from these areas.**

## **Advantages**

- 1. Only part of the population need be enumerated.**
- 2. Costs are reduced if clusters are well defined.**
- 3. Estimates of cluster parameters are made and compared to the population.**

## **Disadvantages**

- 1. Sampling errors are likely.**
- 2. Clusters may not be representative of the population.**
- 3. Each subject or unit must be assigned to a specific cluster**

# Sample Size

**A few general principles guide researchers in determining an acceptable sample size.**

- 1. A primary consideration in determining sample size is the research method used.**

**Focus groups use samples of 6-12 people, but the results are not intended to be generalized to the population from which the respondents were selected.**

**Samples of 25-50 are commonly used for pre-testing measurement instruments, pilot studies, and for studies conducted only for heuristic value.**

**2. A sample of 100 subjects per demographic group (such as adults 18—24 years old) is often used by researchers. This base figure is used to "back in" to a total sample size.**

**3. Sample size is almost always controlled by cost and time. Although researchers may wish to use a sample of 1,000 for a survey, the economics of such a sample are usually prohibitive.**

**4. Multivariate studies always require larger samples than univariate studies because they involve the analysis of multiple response data (several measurements on the same subject). One guideline recommended for multivariate studies is:**

**50 = very poor**

**100 = poor**

**200 = fair**

**300 = good**

**500 = very good**

**1,000 = excellent**

**5. Researchers should always select a larger sample than is actually required for a study, since mortality must be compensated for. Subjects drop out of research studies for one reason or another, and allowances must be made for this in planning the sample selection.**

**6. Information about sample size is available in published research. Consulting the work of other researchers provides a base from which to start.**

**7. Generally speaking, the larger the sample used, the better. However, a large unrepresentative sample is as meaningless as a small unrepresentative sample.**

# Sampling Error

$$\begin{aligned} SE(p) &= \sqrt{\frac{20(80)}{500}} \\ &= \sqrt{\frac{1,600}{500}} \\ &= \sqrt{3.2} \\ &= \pm 1.78 \end{aligned}$$



# **Chapter Four**

## **Survey Research**

**Surveys are now used in all areas of life. Businesses, consumer groups, politicians, and advertisers use them in their everyday decision-making processes.**

**Some firms, such as Gallup and Harris, conduct public opinion surveys on a full-time basis.**

**The importance of survey research to the public at large is confirmed by the frequent re-reporting of survey results in the popular media.**

**This is especially evident during campaign periods, when the public continually hears or reads about polls conducted to ascertain candidates' positions with the electorate.**

# **ADVANTAGES OF SURVEY RESEARCH**

- First, they can be used to investigate problems in realistic settings.**
- Second, the cost of surveys is reasonable considering the amount of information gathered.**

**In addition, researchers can control expenses by selecting from four major types of surveys: mail, telephone, personal interview, and group administration.**

**-A third advantage is that large amounts of data can be collected with relative ease from a variety of people.**

**- Finally, data helpful to survey research already exist. Data archives, government documents, census materials, radio and television rating books ..etc.**

# **DiSADVANTAGES OF SURVEY RESEARCH**

**- The first and most important is that independent variables cannot be manipulated as in laboratory experiments. Without control of independent variable variation, the researcher cannot be certain whether the relations between independent and dependent variables are causal or non-causal.**

**- A second disadvantage is that inappropriate wording and placement of questions within a questionnaire can bias results. The questions must be worded and placed to unambiguously elicit the desired information. This problem is discussed later in the chapter.**

**- A third disadvantage of survey research, especially in telephone studies, is the potential problem of talking to the wrong people.**

**For example, a respondent may claim to be 18 to 24, but may in fact be well over 30 years old.**

**- Finally, some survey research is becoming more and more difficult to conduct. This is especially true with telephone surveys where answering machines, and respondents unwilling to participate, are creating very low incidence rates.**

# CONSTRUCTING QUESTIONS

**Two basic considerations apply to the construction of good survey questions:**

**(1) the questions must clearly and unambiguously communicate the desired information to the respondent, and**

**(2) the questions should be worded to allow accurate transmission of respondents' answers to researchers.**

# TYPES OF QUESTIONS

**Surveys can consist of two basic types of questions:**

**(1) open-ended**

**(2) closed-ended.**

# **GENERAL GUIDLINES**

- 1. Make questions clear.***
- 2. Keep questions short.***
- 3. Remember the purposes of the research.***
- 4. Do not ask double-barreled questions.***
- 5. Avoid biased words or terms.***
- 6. Avoid leading questions.***
- 7. Do not use questions that ask for highly detailed information.***

# Questionnaire Design

# **Three parts in Any Questionnaire**

**1- Introduction**

**2- Instructions**

**3- Questions**

# Gathering Survey Data

**1- Mail**

**2- Telephone**

**3- Personal Interview**

**4- Mall Interview**

**5- Disk-By-Mail Survey**

**6- Group Administration**

# **Five General Problems in Survey Research**

**1. Subjects or respondents are often un-able to recall information about themselves or their activities.**

**2. Due to a respondent's feelings of inade-quacy or lack of knowledge about a particular topic, they often provide "prestigious" answers rather than admit they don't know something.**

**3. Subjects may purposely deceive re-searchers by giving incorrect answers to ques-tions.**

**4. Respondents often give elaborate an-swers to simple questions because they try to "figure out" the purpose of a study, and what the researcher is doing.**

**5. Surveys are often complicated by the in-ability of respondents to explain their true feel-ings, perceptions, and beliefs — not because they don't have any, but because they can't put them into words.**



## **Chapter Five**

# **Qualitative Research Methods**

**1- Field Observations**

**2- Focus Groups**

**3- Intensive Interviews**

**4- Case Studies**