Pathways to Higher Education Project

Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University (CAPSCU)

Research Methods and Writing Research Proposals

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Acknowledgment

On behalf of Pathways to Higher Education Management Team in Egypt, the Project Coordinator wishes to extend his thanks and appreciation to the Ford Foundation (FF) for its full support to reform higher education, postgraduate studies and research activities in Egypt. The Management Team extend their special thanks and appreciation to Dr. Bassma Kodmani, Senior Project Officer at the Ford Foundation office in Cairo, who helped initiate this endeavor, and who spared no effort to support the Egyptian overall reform activities, particularly research and quality assurance of the higher education system. Her efforts were culminated by the endorsement to fund our proposal to establish the Egyptian Pathways to Higher Education project by the Ford Foundation Headquarters in New York.

The role of our main partner, the Future Generation Foundation (FGF), during the initial phase of implementation of the Pathways to Higher Education Project is also acknowledged. The elaborate system of training they used in offering their Basic Business Skills Acquisition (BBSA) program was inspiring in developing the advanced training program under Pathways umbrella. This partnership with an NGO reflected a truly successful model of coordination between CAPSCU and FGF, and its continuity is mandatory in support of our young graduates interested in pursuing research activities and/or finding better job opportunities.

The contribution of our partner, The National Council for Women (NCW), is appreciated. It is worth mentioning that the percentage of females graduated from Pathways programs has exceeded 50%, which is in line with FF and NCW general objectives. The second phase of the project will witness a much more forceful contribution from the NCW, particularly when implementing the program on the governorates level as proposed by CAPSCU in a second phase of the program.

We also appreciate the efforts and collaborative attitude of all colleagues from Cairo University, particularly the Faculties of Commerce, Art, Mass Communication, Law, Economics and Political Sciences, and Engineering who contributed to the success of this project.

Finally, thanks and appreciation are also extended to every member of the Center for Advancement of Postgraduate Studies and Research in Engineering Sciences (CAPSCU), Steering Committee members, trainers, supervisors and lecturers who were carefully selected to oversee the successful implementation of this project, as well as to all those who are contributing towards the accomplishment of the project objectives.

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CU Cairo University **NCW National Council for Women**
FF Ford Foundation **FGF Future Generation Foundation**
CAPSCU Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University

Publisher Introduction

The Faculty of Engineering, Cairo University is a pioneer in the field of learning and continual education and training. The Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University (CAPSCU) is one of the pillars of the scientific research centers in the Faculty of Engineering. CAPSCU was established in 1974 in cooperation with UNIDO and UNESCO organizations of the United Nations. Since 1984, CAPSCU has been operating as a self-financed independent business unit within the overall goals of Cairo University strategy to render its services toward development of society and environment.

CAPSCU provides consultation services for public and private sectors and governmental organizations. The center offers consultation on contractual basis in all engineering disciplines. The expertise of the Faculty professors who represent the pool of consultants to CAPSCU, is supported by the laboratories, computational facilities, library and internet services to assist in conducting technical studies, research and development work, industrial research, continuous education, on-the-job training, feasibility studies, assessment of technical and financial projects, etc.

Pathways to Higher Education (PHE) Project is an international grant that was contracted between Cairo University and Ford Foundation (FF). During ten years, FF plans to invest 280 million dollars to develop human resources in a number of developing countries across the world. In Egypt, the project aims at enhancing university graduates' skills. PHE project is managed by CAPSCU according to the agreement signed in September 22nd, 2002 between Cairo University and Ford Foundation, grant No. 1020 - 1920.

The partners of the project are Future Generation Foundation (FGF), National Council for Women (NCW) and Faculties of Humanities and Social Sciences at Cairo University. A steering committee that includes representatives of these organizations has been formed. Its main tasks are to steer the project, develop project policies and supervise the implementation process.

Following the steps of CAPSCU to spread science and knowledge in order to participate in society development, this training material is published to enrich the Egyptian libraries. The material composes of 20 subjects especially prepared and developed for PHE programs.

Dr. Mohammad M. Megahed
CAPSCU Director
April 2005

Foreword by the Project Management

Pathways to Higher Education, Egypt (PHE) aims at training fresh university graduates in order to enhance their research skills to upgrade their chances in winning national and international postgraduate scholarships as well as obtaining better job.

Pathways steering committee defined the basic skills needed to bridge the gap between capabilities of fresh university graduates and requirements of society and scientific research. These skills are: mental, communication, personal and social, and managerial and team work, in addition to complementary knowledge. Consequently, specialized professors were assigned to prepare and deliver training material aiming at developing the previous skills through three main training programs:

1. Enhancement of Research Skills
2. Training of Trainers
3. Development of Leadership Skills

The activities and training programs offered by the project are numerous. These activities include:

1. Developing training courses to improve graduates' skills
2. Holding general lectures for PHE trainees and the stakeholders
3. Conducting graduation projects towards the training programs

Believing in the importance of spreading science and knowledge, Pathways management team would like to introduce this edition of the training material. The material is thoroughly developed to meet the needs of trainees. There have been previous versions for these course materials; each version was evaluated by trainees, trainers and Project team. The development process of both style and content of the material is continuing while more courses are being prepared.

To further enhance the achievement of the project goals, it is planned to dedicate complete copies of PHE scientific publications to all the libraries of the Egyptian universities and project partners in order to participate in institutional capacity building. Moreover, the training materials will be available online on the PHE website, www.Pathways-Egypt.com.

In the coming phases, the partners and project management team plan to widen project scope to cover graduates of all Egyptian universities. It is also planned that underprivileged distinguished senior undergraduates will be included in the targeted trainees in order to enable their speedy participation in development of society.

Finally, we would like to thank the authors and colleagues who exerted enormous efforts and continuous work to publish this book. Special credit goes to Prof. Fouad Khalaf for playing a major role in the development phases and initiation of this project. We greatly appreciate the efforts of all members of the steering committee of the project.

Dr. Sayed Kaseb

Project Manager

Dr. Mohsen Elmahdy Said

Project Coordinator

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Chapter 1: Scientific Research

Definition

For some reason, probably related to a dislike for math, many people consider the word ***research*** and everything the word suggests as unpleasant. But **research** can be a valuable term. It can lead to uncovering the answers to "**impossible**" questions.

Two basic questions the beginning researcher must learn to answer are *how* and *when to* use research methods and statistical procedures. Developing methods and procedures are 3 valuable tasks, but the focus for the majority of research students should be on applications.

Although both statisticians and researchers are fundamental in producing research results, their specialties are different (keep in mind that one person may serve in both capacities). Statisticians generate statistical procedures or formulas called algorithms; researchers use these algorithms to investigate research questions and hypotheses. The results of this cooperative effort are used to advance our understanding of the studied phenomenon.

Scientific research may be defined as a systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among observed phenomena. This definition contains the basic terms necessary in defining the method of scientific research, and describes a procedure that has been accepted for centuries.

However, regardless of its origin, all research begins with a basic question or proposition about a specific phenomenon. For example: Why do viewers select one television program over another? What sections of the newspaper do people read most often? What types of magazine covers attract the widest number of readers? Which types of advertising are most effective in selling specific types of products? Each of these questions could be answered to some degree with a well-designed research study. The difficulty, in many cases, is to determine which type of study, or which method of collecting data, is most appropriate to answer the specific question(s).

The user of the method of tenacity follows the logic that something is true because it has always been true. An example is the store owner who says, "I don't advertise because my parents did not believe in advertising." The basic idea is that nothing changes; what was good, bad, or successful before will continue to be so in the future.

In the method of intuition, the a priori approach, one assumes that

something is true because it is "self-evident" or "stands to reason." Researchers who conduct telephone research encounter this method of knowing frequently. Many respondents assume (intuition) that all research projects involve some form of sales. This "fear," along with various consumer groups that wish to ban all forms of telephone contacts for sales, research, or solicitation, may be the downfall of telephone research in the near future.

The method of authority seeks to promote belief in something because a trusted source, such as a relative, news correspondent, or teacher, says it is true. The emphasis is on the source, not on the methods the source may have used to gain the information. The claim that "The world is going to end tomorrow because the New York Times editorial said so" is based on the method of authority.

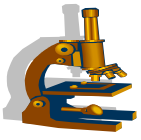
The scientific method approaches learning as a series of small steps. That is, one study or one source provides only an *indication* of what may or may not be true; the "truth" is found only through a series of objective analyses. This means that the scientific method is self-correcting in that changes in thought or theory are appropriate when errors in previous research are uncovered.

For example, scientists changed their ideas about the planets Saturn, Uranus, and Neptune when, on the basis of information gathered by the Voyager spacecraft, they uncovered errors in earlier observations. In communications, researchers discovered that the early perceptions of the power of the media (the "hypodermic needle" theory) were incorrect and, after numerous research studies, concluded that behavior and ideas are changed by a combination of communication sources and that people may react to the same message in different ways.

The scientific method may be inappropriate many areas of life, such as evaluating works of art, choosing a religion, or forming friendships, but the method has been valuable in producing accurate and useful data in mass media research. The following section provides a more detailed look at this method of knowing.

1.1 Characteristics of the Scientific Method

Characteristics of the Scientific Method



1. Scientific research is public

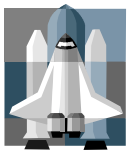
Five basic characteristics, or tenets, distinguish the scientific method from other methods of knowing. A research approach that does not follow these tenets cannot be considered to be a scientific approach.

1. Scientific research is public: Scientific advancement depends on freely available information. A researcher, especially in the academic sector, cannot plead private knowledge, methods, or data in arguing for the accuracy of his or her findings; scientific research information must be freely communicated from one researcher to another.

Researchers, therefore, must take great care in published reports to include information on their use of sampling methods, measurements, and data-gathering procedures. Such information allows other researchers to verify independently a given study and to support or refute the initial research findings. This process of replication, discussed in greater detail in Chapter 2, allows for correction or verification of previous research findings.

Researchers also need to save their descriptions of observations (data) and their research materials so that information not included in a formal report can be made available to other researchers on request. *It is common practice to keep all raw research material for 5 years. This material is usually provided free as a courtesy to other researchers or for a nominal fee if photocopying or additional materials are required.*

2. Science is objective



2. Science is objective: Science tries to rule out eccentricities of judgment by researchers. When a study is undertaken, explicit rules and procedures are constructed and the researcher is bound to follow them, letting the chips fall where they may. Rules for classifying behavior are used so that two or more independent observers can classify particular patterns of behavior in the same manner. For example, if the attractiveness of a television commercial is being measured, researchers might count the number of times a viewer switches channels while the commercial is shown. This is considered to be an objective measure because a change in channel would be reported by any competent observer. Conversely, to measure attractiveness by observing how many people make negative facial expressions while the ad is shown would be a subjective approach, since observers may have different ideas of what constitutes a negative expression. However, an explicit definition of the term *negative facial expression* might eliminate the coding error.

Objectivity also requires that scientific research deal 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

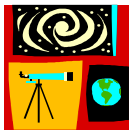
3. Science is empirical**:** *Researchers are concerned with a world that is knowable and potentially measurable. (Empiricism is derived from the Greek word for "experience"). They must be able to perceive and classify what they study and to reject metaphysical and nonsensical explanations of events. For example, a newspaper publisher's claim that declining subscription rates are "God's will" would be rejected by scientists — such a statement cannot be perceived, classified, or measured.*

This does not mean that scientists evade abstract ideas and notions — they encounter them every day. But they recognize that concepts must be strictly defined to allow for observation and measurement.

Scientists must link abstract concepts to the empirical world through observations, which may be observed either directly or indirectly via various measurement instruments. Typically this linkage is accomplished by framing an operational definition.

Operational definitions are important in science, and a brief introduction necessitates some backtracking. There are basically two kinds of definitions. A constitutive definition defines a word by substituting other words or concepts for it. For example, "An artichoke is a green leafy vegetable, a tall composite herb of the *Cynara scolymus* family" is a constitutive definition of the concept "artichoke". In contrast, an operational definition specifies procedures to be followed in experiencing or measuring a concept. For example, "Go to the grocery store and find the produce aisle. Look for a sign that says Artichokes. What's underneath the sign is one." Although an operational definition assures precision, it does not guarantee validity. An errant stock clerk may mistakenly stack lettuce under the artichoke sign and fool someone. This underlines the importance of considering both the constitutive and the operational definition of a concept in evaluating the trustworthiness of any measurement. A careful examination of the constitutive definition of artichoke would indicate that the operational definition might be faulty.

4. Science is systematic and cumulative



4. Science is systematic and cumulative: *No single research study stands alone, nor does it rise or fall by itself. Astute researchers always utilize previous studies as building blocks for their own work. 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 (Chapter 2).* This review is valuable for identifying problem areas and important factors that might be relevant to the current study (see Cat-tell, 1966).

In addition, scientists attempt to search for order and consistency among their findings. In its ideal form, scientific research begins with a single, carefully observed event and progresses ultimately to the formulation of theories and laws. A theory is a set of related propositions that presents a systematic view of phenomena by specifying relationships among concepts. Researchers develop theories by searching for patterns of uniformity to explain the data that have been collected. When relationships among variables are invariant under given conditions; that is, when the relationship is always the same, researchers may formulate a law. Both theories and laws help researchers search for and explain consistency in behavior, situations, and phenomena.

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. If a theory suggests predictions that are not borne out by data analysis, that theory must be carefully reexamined and perhaps discarded. Conversely, if a theory generates predictions that are supported by the data, that theory can be used to make predictions in other situations.

Research Procedures

1.2 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. However, merely following the eight research steps *does not guarantee* that the research is good, valid, reliable or useful. An almost countless number of intervening variables (influences) can destroy even the most well-planned research project. It's similar to someone assuming he or she can bake a cake just by following the recipe. The cake may be ruined by an oven that doesn't work properly, spoiled ingredients, high or low altitude, or numerous other problems.

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).*

Step 4 includes the decision of whether to use qualitative research (such as focus groups or one-on-one interviews using small samples) or a quantitative research (such as telephone interviews) where large samples are used to allow results to be generalized to the general population under study.

Steps 2 and 8 are optional in private sector research because in many instances research is conducted to answer a specific and unique question related to a future decision, such as whether to invest a large sum of money in a developing medium. In this type of project, generally, there is no previous research to consult, and there seldom is a reason to replicate (repeat) the study because a decision will be made on the basis of the first analysis. However, if the research provided inconclusive results, the study would be revised and replicated.

Each step in the eight-step research process depends on all the others to help produce a maximally efficient research study.

Before a literature search is possible, a clearly stated research problem is required; to design the most efficient method of investigating a problem, the researcher needs to know what types of studies have been conducted, and so on. All the steps are interactive: the results or conclusions of any step have a bearing on other steps. For example, a literature search may refine and even alter the initial research problem; a study conducted previously by another company or business in the private sector might have similar effects.

1.3 Sectors of Research: Academic and Private

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. *However, these terms are not used in this text since research in both sectors can be basic and/or applied. Both sectors of research are equally important, and in many cases the two work together to solve mass media problems.*

Academic sector research is conducted by scholars from colleges and universities. It also *generally* means that the research has a *theoretical* or scholarly approach; that is, the results are intended to help explain the mass media and their effects on individuals. Some popular research topics in the theoretical area include the use of the media and various media-related items, such as video games, teletext, and multiple-channel cable systems; lifestyle analyses of consumers; media "overload" on consumers; alternatives to present media systems; and the effects of various types of programming on children.

Private sector research is conducted by nongovernmental 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. Typical research topics in the private sector include analyses of media content and consumer preferences, acquisition research to determine whether to purchase additional businesses or facilities, public relations approaches to solve specific informational problems, sales forecasting, and image studies of the properties owned by the company.

There are other differences between academic and private sector research. *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.

Another difference between academic and private sector research involves 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. *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.*

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. 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.** *Academicians perform many studies for the industry, and private sector groups conduct research that can be classified as theoretical* (for example, the television networks have departments that conduct social research). Many college and university professors act as consultants to, and often conduct private sector research for, the media industry.

It is also important for all researchers to refrain from attaching to academic or private sector research such stereotypical labels as "unrealistic," "inappropriate," "pedantic," and "limited in scope." Research in both sectors, although differing occasionally in terms of cost and scope, uses similar methodologies and statistical analyses. In addition, both sectors have common research goals: to understand problems and to predict the future.

In conducting a study according to the scientific method, researchers need to have a clear understanding of what they are investigating, how the phenomenon can be measured or observed, and what procedures are required to test the

observations or measurements. Conceptualization of the research problem in question and a logical development of procedural steps are necessary to have any hope of answering a research question or hypothesis.

Chapter 2: Research Procedures

Definition

This chapter describes the processes involved in identifying and developing a topic for research investigation. It was suggested that researchers consider several sources for potential ideas, including a critical analysis of everyday situations. The steps in developing a topic for investigation naturally become easier with experience; beginning researchers need to pay particular attention to material already available. They should not attempt to tackle broad research questions, but should try to isolate a smaller, more practical subtopic for study. They should develop an appropriate method of analysis and then proceed, through data analysis and interpretation, to a clear and concise presentation of results.

The chapter stresses that the results of a single survey or other research approach only provide indications of what may or may not exist. Before researchers can claim support for a research question or hypothesis, the study must be replicated a number of times to eliminate dependence on extraneous factors.

While conducting research studies, investigators must be constantly aware of potential sources of error that may create spurious results. Phenomena that affect an experiment in this way are sources of breakdowns in internal validity. If and only, if differing and rival hypotheses are ruled out can researchers validly say that the treatment was influential in creating differences between the experimental and control groups. A good explanation of research results rules out intervening variables; every plausible rival explanation should be considered. However, even when this is accomplished, the results of one study can be considered only as indications of what may or may not exist. Support for a theory or hypothesis can be made only after the completion of several studies that produce similar results.

In addition, for a study to have substantive worth to the understanding of mass media, the results must be generalizable to subjects and groups other than those involved in the experiment. External validity can be best achieved through randomization of subject selection.

The scientific evaluation of any problem must follow a sequence of steps to increase the chances of producing relevant data. Researchers who do not follow a prescribed set of steps do not subscribe to the scientific method of inquiry and simply increase the amount of error present in the study. This chapter describes the process of scientific research, from identifying and developing a topic for investigation to replication of results. The first section briefly

introduces the steps in the development of a research topic.

Objective, rigorous observation and analysis are characteristic of the scientific method. To meet this goal, researchers must follow the prescribed steps shown in Figure 2.1. This research model is appropriate to all areas of scientific research.

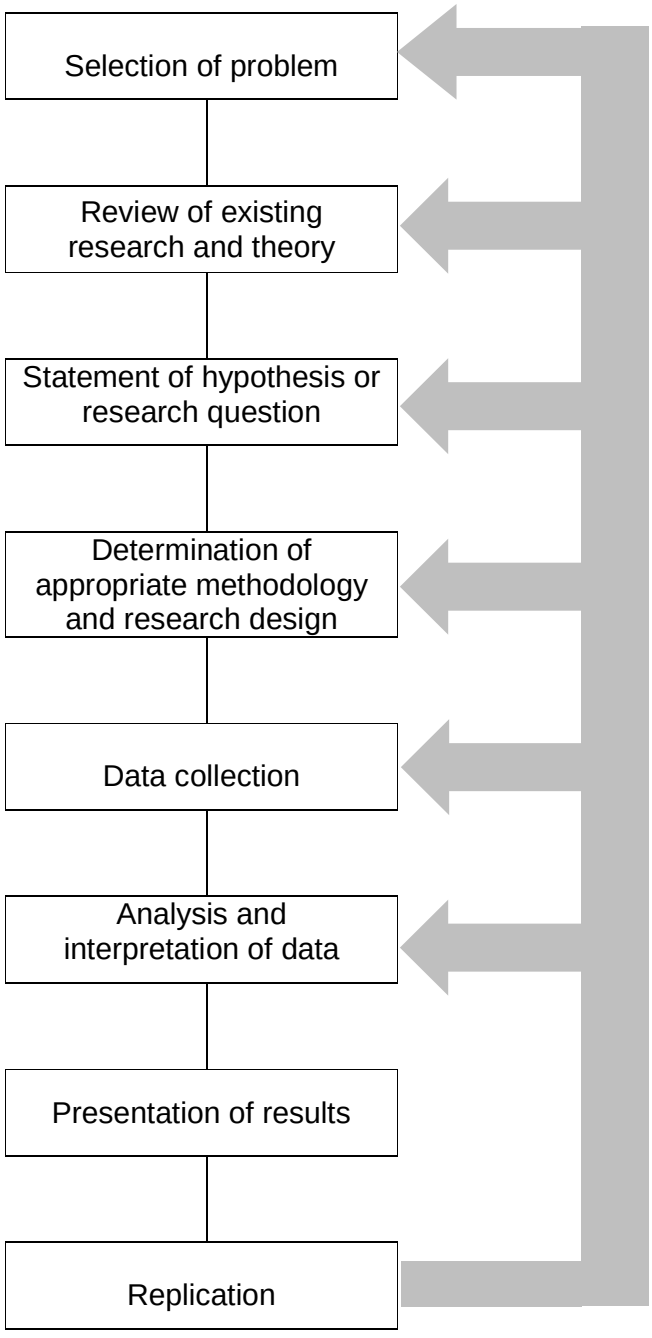


Figure 2.1: Steps in the development of a research project

Selecting a Research Topic

2.1 Selecting a Research Topic

Selecting a research topic is not a concern for all researchers; in fact, only a few investigators in communications fields are fortunate enough to be able to choose and concentrate on a research area interesting to them. Many come to be identified with studies of specific types, such as focus group methodology, magazine advertising, or communications and the law. These researchers investigate small pieces of a puzzle in communications to obtain a broad picture of their research area.

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.

Although some private sector researchers are limited in the amount of input they can contribute to topic selection, they usually are given total control over how the question should be answered; that is, what research methodology should be used. The goal of private sector researchers is to develop a method that is fast, inexpensive, reliable, and valid. If all these criteria are met, the researcher has performed a valuable task.

However, selecting a topic is a concern for many beginning researchers, especially those writing term papers, theses, and dissertations. The problem knows where to start. Fortunately, there are virtually unlimited sources available in searching for a research topic; academic journals, periodicals, and newsweeklies, and everyday encounters can provide a wealth of ideas. Although academic journals tend to publish research that is 12 to 24 months old (due to review procedures and backlog of articles),

The articles may provide ideas for research topics. Most authors conclude their research by discussing problems encountered during the study and suggesting topics that need further investigation. In addition, some journal editors build issues around individual research themes, which often can help in formulating research plans.

In addition to academic journals, professional trade publications offer a wealth of information relevant to mass media research. Research abstracts, located in most college and university libraries, are also valuable sources for research topics. These volumes contain summaries of research articles published in nearly every academic journal.

Sources of Research Topics

2.2 Sources of Research Topics

2.2.1 Magazines and Periodicals

1. 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.

2.2.2 Research Summaries

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.

2.2.3 Everyday Situations

3. Everyday Situations

Each day we are confronted with various types of communication via broadcasting and print, interpersonal communication, public relations campaigns, and so forth. These confrontations can be excellent sources of research topics for the researchers who take an active role in analyzing them. 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. Significant studies based on questions arising from everyday encounters with the media and other forms of mass communication have covered investigations of television violence, layout of newspaper advertisements, advisory warnings on television programs, and approaches to public relations campaigns.

2.2.4 Archive Data

4. Archive Data

Data archives, such as the Inter-University Consortium for Political Research (ICPR) at the University of Michigan, the Simmons Target Group Index (TGI), the Galiup and Roper organizations, and the collections of Arbitron, Nielsen, and Birch media ratings data (Chapter 14), are valuable sources of ideas for researchers. The historical data are used by researchers to investigate questions different from those which the data were originally intended to address. For example, ratings books provide information about audience size and composition for a particular period in time, but other researchers may use the data for historical tracking, prediction of audiences in the future, the changes in popularity of types of stations and/or programs,

and the relationship between audience ratings and advertising revenue generated by individual stations or an entire market. This process, known as secondary analysis, has become a major research approach because of the time and resource savings it affords.

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. The reuse of the data can be by the original researcher or someone uninvolved in any way in the initial research project. The research questions examined in the secondary analysis can be related to the original research endeavor or quite distinct from it.

5. Advantages of Secondary Analysis

2.2.5 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. 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. There is almost no expense involved in using available data. There are no questionnaires or measurement instruments to construct and validate salaries for interviewers and other personnel are nonexistent, and there are no costs for subjects and special equipment. The only expenses entailed in secondary analysis are those for duplicating materials — some organizations provide their data free of charge — and computer time. Data archives are valuable sources for empirical data. In many cases, archive data provide researchers with information that can be used to help answer significant media problems and questions,

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.

Another advantage of secondary analysis is that data allow researchers more time to further understand what has been collected. All too often research is conducted and after a cursory analysis of the data for publication or report to management, the data are set aside, never to be touched again. It is difficult to completely analyze all data

from any research study in just one or two studies, yet this procedure is followed in both the academic and private sectors.

Arguments for secondary analysis come from a variety of researchers It is clear that the research method provides excellent opportunities to produce valuable knowledge. The procedure, however, is not free from criticism.

6. Disadvantages of Secondary Analysis

2.2.6 Disadvantages of Secondary Analysis

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.

Researchers conducting secondary analysis studies also may face the problems of using data that were poorly collected, inaccurate, or flawed. Many studies do not include information about the research design, sampling procedures, weighting of subjects' responses, or other peculiarities. Perhaps it is suspected that some of the data were fabricated. Large research firms tend to explain their procedures in detail.

Although individual researchers in mass media have begun to make their data more readily available, not all follow adequate scientific procedures. This may seriously affect a secondary analysis.

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.

Determining Topic Relevance

2.3 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. There is a tendency, however, for researchers to choose topics that, while valuable, are too broad to cover in one study — for example, "the effects of television violence on children," or "the effects of mass media information on voters in a president's trial election."

To avoid this problem, researchers usually write down their proposed title as a visual starting point and attempt to dissect the topic into small questions.

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. For example, a researcher who wants to know how people who have no television receiver react to everyday interpersonal communication situations must consider the problems of finding subjects without at least one television set in the home. Some may exist in remote parts of the country, but the question is basically unanswerable due to the current saturation of television. Thus the researcher must attempt to reanalyze the original idea in conformity with practical considerations.

Another point to consider is whether all terms of the proposed study are definable. Remember that all measurable variables must be operationally defined. A researcher who is interested in examining youngsters' use of the media needs to come up with a working definition of the word *youngsters to* avoid confusion. Potential problems can be eliminated if an operational definition is stated: "Youngsters are children between the ages of 3 and 7 years."

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 research if it requires collecting data that cannot be measured reliably and validly. In other words, a researcher who wants to measure the effects of not watching television should consider whether the information about the subjects' behavior will be adequate and reliable, whether the subjects will answer truthfully, what value the data will have once gathered, and so forth. Researchers also need to have enough data to make the study worthwhile. It would be inadequate to analyze only 10 subjects in the "television turn-off" example, since the results could not be generalized with regard to the entire population.

Another consideration is the researcher's previous experience with the statistical method selected to analyze the data. That is, does he or she really understand the proposed statistical analysis? Researchers need to know how the statistics work and how to interpret the results. All too often researchers design studies involving

advanced statistical procedures that they have never used. This tactic invariably creates errors in computation and interpretation. Research methods and statistics should not be selected because they happen to be popular or because a research director suggests a given method, but rather because they are appropriate for a given study and are understood by the person conducting the analysis. A common error made by beginning researchers is to select a statistical method without understanding what the statistic actually produces. Using a statistical method without understanding what the method produces is called the *law of the instrument.* It is much wiser to do simple frequencies and percentages and understand the results than to try to use a high-level statistic and end up totally confused.

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?** The goal of all research is to help further the understanding of the problems and questions in the field of study; if a study does not do this, it has little value beyond the experience the researcher acquires from conducting it. This does not mean that all research has to be earth-shattering. Many investigators, however, waste valuable time trying to develop monumental projects when in fact the smaller problems are of more concern.

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. For example, a study of the effects of a small-town public relations campaign might be appropriate if plans are made to analyze such effects in several small towns, or if it is a case study not intended for generalization; however, such an analysis has little external validity.

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 cost analysis must be completed very early on. It does not make sense to develop specific designs and the data-gathering instrument for a project that will be canceled because of lack of funds. Sophisticated research is particularly expensive: costs may easily exceed 50,000 LE for one project.

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. In general, private sector researchers are not severely constrained by expenses; however, they must adhere to budget specifications provided by management.

Time is also an important consideration in research planning. Research studies must be designed in such a way that they can be completed in the amount of time available. Many studies have failed because not enough time was allotted for each research step, and in many cases, the pressure created by deadlines creates problems in producing reliable and valid results (for example, failure to provide alternatives if the correct sample of people cannot be located).


7

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. However, the costs of printing and mailing questionnaires, plus follow-up letters and possibly phone calls to increase the response rate, might prove prohibitive.

Could this study be planned differently to eliminate some of the expense? Possibly, depending on the purpose of the study and the types of questions planned. The researcher could collect the data by telephone interviews to eliminate printing and postage costs. Some questions might need reworking to fit the telephone procedure, but the essential information could be collected. A close look at every study is required to plan the best approach.

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? Prior to the start of most public research projects involving human subjects, detailed statements explaining the exact procedures involved in the research are required to ensure that subjects will not be injured in any way. These statements are intended to protect unsuspecting subjects from being exposed to harmful research methods.

Underlying all eight steps in the research topic selection process is validity (Chapter 3). In other words, are all of the steps (initial idea to data analysis and interpretation) the *correct* ones to follow in trying to answer the question(s)?

2.4 Reviewing the Literature

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. Experienced researchers consider the literature review as one of the most important steps in the research process because it not only allows them to learn from (and eventually add to) previous research data but also saves time, effort, and money. Failing to conduct a literature review is as detrimental to a project as failing to address any of the other steps in the research process.

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.

Stating a Hypothesis or Research Question

2.5 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.*

Research and Experimental Design

2.6 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 nonlaboratory projects, and *experimental design* only for projects conducted in a laboratory setting. In this book, the terms are used interchangeably because countless arguments can be raised about whether or not a research project is an "experiment," and the relationship between "laboratory" and "experiment." That is, must an "experiment" be conducted in a controlled laboratory situation to be called an "experiment"?

Research and experimental design are essentially blueprints, or sets of plans, for collecting information. The ideal design collects a maximum amount of information with a minimal expenditure of time and resources. Depending on the circumstances, a design may be brief or very complicated; there are no specific guidelines concerning the amount of detail required for a design. However, all designs incorporate the steps in the process of collecting and analyzing the data.

Researchers must determine how the data will be collected and analyzed before beginning a research project. Attempting to force a study to follow a particular approach or statistic after the data have been gathered only invites error. For example, a director of marketing for a large shopping mall was interested in finding out more about the customers who shopped at the mall (for example, where they lived and how often they shopped at the mall). With very little planning, she designed a simple questionnaire to collect the information. However, the respondents' possible answers, or response choices, to each of the questions were inadequate and the questionnaire inappropriately designed for any type of summary analysis. Thus, the director of marketing was stuck with thousands of useless questionnaires.

All research — from very simple surveys of only a few people to nationwide studies covering complex issues — requires a design of some type. All procedures, including variables, samples, and measurement instruments, must be selected or designed in light of their appropriate-ness to the hypotheses or research questions, and all items must be planned in advance.

There are four characteristics of research design : 1. Naturalistic setting

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; that phenomena should not be analyzed in a single session; and that normal intervening variables, such as noise, should be included in the study. Also, long-term projects are more conducive to a naturalistic atmosphere than short-term studies.*

2. Clear cause-and-effect relationships

2. Clear cause-and-effect relationships: *The researcher must make every effort to control intervening or spurious independent/dependent variable relationships* (Chapter 3). The results of a study can be interpreted with confidence *if and only* if all confounding effects are identified.

3. Unobtrusive and valid measurements

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. Also, the study should be designed to assess both immediate and long-term effects on the subjects.*

To assure the validity of the measurements used, *a sample should be large enough to allow detection of minor effects or changes* **(Chapter 4)**. Additionally, the selection of dependent variables should be based on their relevance to the study and the researcher's knowledge of the area, not on convenience.

4. Realism

4. Realism: *A research design must above all be realistic. This necessitates a careful consideration of the availability of time, money, personnel to conduct the study, and researchers who are competent in the proposed research methodology and statistical analysis.*

Once the research design has been properly developed, researchers should pretest as many phases of the project as possible. *A pretest of the questionnaire, and a check for errors in the measurement instruments) and equipment will help determine if significant problems are present. A trial run or pilot study (a small-scale version of the planned research project) is recommended, but is not always necessary or possible.* The mall marketing director in the previous example could have saved a great deal of time and money by running a pilot study using 10 or 20 mall shoppers. She would have quickly discovered that the questionnaire did not produce the desired results.

Research Suppliers and Field Services

2.7 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.*

Research suppliers provide a variety of services. *A full-service supplier participates in the design of a study, supervises data collection, tabulates the data, and provides an analysis of the results.* The company may offer work in any field (such as mass media, medical and hospital, or banking), or the company may specialize in one type of research work. In addition, some companies can execute any type of research method — telephone surveys, one-on-one interviews, shopping center interviews (intercepts), focus groups — or may concentrate on only one method.

Field services usually specialize in conducting telephone interviews, mall intercepts, one-on-one interviews, and recruiting respondents for group administration projects and focus groups, which are called prerecruits (the company prerecruits respondents to attend a research session). Although some field services offer help in questionnaire design and data tabulation, most concentrate on telephone interviews, mall interviews, and prerecruiting.

Field services usually have focus group rooms available (with two-way mirrors to allow clients to view the session), and test kitchens for projects involving food and cooking. Some field service facilities are gorgeous and elaborate, but others look are not. Most field services lease space (or lease the right to conduct research) in shopping malls

to conduct intercepts. Some field services are actually based in shopping malls.

Hiring a research supplier or field service is a simple process. The researcher calls the company, explains the project, and is given a price quote. A contract or project confirmation letter is usually signed. In some cases, the price quote is a flat fee for the total project. However, sometimes costs are based on cost-per-interview (CPI).

In most prerecruit research projects, field services and research suppliers are paid on a "show-basis" only. That is, they receive payment only for respondents who show, not how many are recruited. If the companies were paid on a recruiting basis, they could recruit thousands of respondents for each project. The show-basis procedure also adds incentive for the companies to make sure that those who are recruited show up for the research session.

Two important points:

Although various problems with hiring and working with research suppliers and field services are discussed in **Chapter 7**, **two important points are introduced here to help advice researchers when they begin to use these support companies.**

1. All suppliers and field services are not equal

1. All suppliers and field services are not equal. *Any person or group with any qualifications can form a research supply company or field service. There are no formal requirements, no tests to take, and no national, state, or regional licenses to acquire.* What's needed is a research shingle on the door, advertising in marketing and research trade publications, and (optional) membership in one or more of the *voluntary* research organizations.

Due to the lack of regulations in the research industry, it is the sole responsibility of the research user to determine which of hundreds of suppliers available are capable of conducting a professional, scientifically based research project. Experienced researchers develop a list of qualified companies; basically from the recommendations of other users (mass media researchers throughout the country are a very closely knit group of people who trade information almost daily).

2. The researcher must maintain close supervision over the project.

2. The researcher must maintain close supervision over the project. This is true even with the very good companies, not because their professionalism cannot be trusted, but rather, to be sure that the project is answering the questions that were posed. Because of security considerations, a research supplier may never completely understand why a particular project is being conducted, and the researcher needs to be sure that the project will provide the exact information required.

Data Analysis and Interpretation

2.8 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. In many private sector research studies involving only a single question, however, data analysis and interpretation may be completed in a few minutes. For example, a business or company may be interested in discovering the amount of interest in a new product or service. After a survey, for example, the question may be answered by summarizing only one or two items on the questionnaire that relate to demand for the product or service. In this case, interpretation is simply "go" or "no-go."

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. This chapter has touched briefly on the concept of external validity; an externally valid study is one whose results can be generalized to the population. To assess internal validity, on the other hand, one asks: Does the study really investigate the proposed research question?

Internal Validity

2.8.1 Internal Validity

Control over research conditions is necessary to enable researchers to rule out all plausible rival explanations of results. **Researchers are interested in verifying that "y is a function of x," or *y* = f(x). Control over the research conditions is necessary to eliminate the possibility of finding that *y = f(b),* where *b* is an extraneous variable.** Any such variable that creates a rival explanation of results is known as an artifact (also referred to as extraneous variable). The presence of an artifact indicates a lack of internal validity: the study has failed to investigate its hypothesis.

Suppose, for example, that researchers discover through a study that children who view television for extended lengths of time have lower grade point averages in school than children who watch only a limited amount of television. Could an artifact have created this finding? It may be that children who view fewer hours of television also receive parental help with their school work: parental help (the artifact), not hours of television viewed, may be the reason for the difference in grade point averages between the two groups.

Sources of internal invalidity

Sources of internal invalidity may arise from several places. Those most frequently encountered are described in the list

1. History

below. Researchers should be familiar with these sources to achieve internal validity in the experiments they conduct.

1. History: *Various events occurring during a study may affect the subjects' attitudes, opinions, and behavior.* For example, to analyze an oil company's public relations campaign for a new product, researchers first *pretest* subjects concerning their attitudes toward the company. The subjects are next exposed to an experimental promotional campaign (the *experimental treatment);* then a *posttest is* administered to determine whether changes in attitude occurred as a result of the campaign. Suppose the results indicate that the public relations campaign was a complete failure—that the subjects displayed a very poor perception of the oil company in the posttest. Before the results are reported, the researchers need to determine whether an intervening variable could have caused the poor perception. An investigation discloses that during the period between tests, subjects learned from a television news story that the oil company was planning to raise gasoline prices by 20%. The news of the price increase—not the public relations campaign — may have acted as an artifact that created the poor perception. **The longer the time period between a pretest and a posttest, the greater the possibility that history might confound the study.**

2. Maturity

2. Maturity: *Subjects' biological and psychological characteristics change during the course of a study.* Growing hungry or tired or becoming older may influence the manner in which subjects respond to a research study. An example of how maturation can affect a research project was seen in the early 1980s when radio stations around the country began to test their music playlist in auditorium sessions (where listeners are invited to a large hotel ballroom to rate short segments of songs. Some unskilled research companies tested up to 500 or 600 songs in one session and wondered why the songs after about the 400th one tested dramatically different from the other songs. Without a great deal of investigation, researchers discovered that the respondents were physically and emotionally drained once they reached 400 songs (about 2 hours), and merely wrote down *any* number just to complete the project.

3. Testing

3. Testing: *Testing in itself may be an artifact, particularly when subjects are given similar pretests and posttests. A pretest may sensitize subjects to the material and improve their posttest scores regardless of the type of experimental treatment given to subjects.* This is especially true when the same test is used for both situations. Subjects learn how to answer questions and to anticipate researchers' demands. To guard against the effects of testing, different pretests and posttests are required. Or, instead of being given a pretest, subjects can be tested for similarity (homogeneity) by means of a variable or set of variables that differs from the experimental variable. The pretest is not the only way to establish a *point of prior equivalency* (the groups were equal before the experiment) between

groups—this can also be accomplished through sampling (randomization and matching).

4. Instrumentation

4. Instrumentation: *Also known as* ***instrument decay****, this term refers to the deterioration of research instruments or methods over the course of a study.* Equipment may wear out, observers may become more casual in recording their observations, and interviewers who memorize frequently asked questions may fail to present them in the proper order.

5. Experimenter Bias

5. Experimenter bias: There is a variety of ways in which a researcher may influence the results of a study. *Bias can enter through mistakes made in observation, data recording, mathematical computations, and interpretation. Whether experimenter errors are intentional or unintentional, they usually support the researcher's hypothesis and are considered bias.*

Experimenter bias can also enter into any phase of a research project if the researcher becomes swayed by a client's wishes for how a project will turn out. The following example describes a situation that can cause significant problems for researchers if they do not remain totally objective throughout the entire project. The example is not included here to suggest that research *always* works this way, nor is it an endorsement of the situation.

Researchers are sometimes hired by individuals or companies to "prove a point" or to have "supporting information" for a decision (this is usually unknown to the researcher). For example, the program director at a television station may have a particular dislike for a program on the station and wants to **"prove" his "theory" correct**. A researcher is hired under the premise of finding out whether the audience likes or dislikes the program. In this case, it is very easy for the program director to intentionally or unintentionally sway the results just through the conversations with the researcher in the planning stages of the study. It is possible for a researcher to intentionally or unintentionally interpret the results in order to support the program director's desire to eliminate the program. The researcher may, for instance, have like/dislike numbers that are very close, but may give the "edge" to dislike because of the program director's influence.

Experimenter bias is a potential problem in all phases of research, and those conducting the study must be aware of problems caused by outside influences. Several procedures can help to reduce experimenter bias. For example, individuals who provide instructions to subjects and make observations should not be informed of the purpose of the study; experimenters and others involved in the research should not know whether subjects belong to the experimental group or the control group (this is called a double blind experiment); and automated devices such as tape recorders should be used whenever possible to provide uniform instructions to

subjects. **(See Chapter 5 for more information about control groups.)**

Researchers can also ask clients not to discuss the intent of a research project beyond what type of information is desired. The program director should say only that information is desired about the like/dislike of the program and should not discuss what decisions will be made with the research. In cases where researchers must be told about the exact purpose of the project, or where the researcher is conducting the study independently, experimenter bias must be repressed at every phase.

6. Evaluation apprehension

6. Evaluation apprehension: Concept of evaluation apprehension is similar to demand characteristics, but it emphasizes that subjects are essentially *afraid* of being measured or tested. They are interested in receiving only positive evaluations from the researcher and from the other subjects involved in the study. Most people are hesitant to exhibit behavior that differs from the norm and will tend to follow the group, even though they may totally disagree with the others. The researcher's task is to try to eliminate this passiveness by letting subjects know that their individual responses are important.

7. Causal time-order

7. Causal time-order: The organization of an experiment may in fact create problems with data collection and/or interpretation. It may be that results of an experiment are not due to the stimulus (independent) variable, but rather to the effect of the dependent variable. For example, respondents in an experiment about how advertising layouts in magazines influence their purchasing behavior may change their opinions when they read or complete a questionnaire after viewing several ads.

8. Diffusion or imitation of treatments

8. Diffusion or imitation of treatments: In situations where respondents participate at different times during one day or over several days, or groups of respondents are studied one after another, respondents may have the opportunity to discuss the project with someone else and contaminate the research project. This is a special problem with focus groups where one group often leaves the focus room while a new group enters.

9. Compensation

9. Compensation: Sometimes individuals who work with a control group (the one that receives no experimental treatment) may unknowingly treat the group differently since the group was "deprived" of something. In this case, the control group is no longer legitimate.

10. Compensatory rivalry

10. Compensatory rivalry: In some situations, subjects who know they are in a control group may work harder or perform differently to out-perform the experimental group.

11. Demoralization

11. Demoralization: Control group subjects may literally lose interest in a project because they are not experimental subjects. These

people may give up or fail to perform normally because they may feel demoralized or angry that they are not in the experimental group.

The sources of internal invalidity are complex and may arise in all phases of research. For this reason, it is easy to see why the results from a single study cannot be used to refute or support a theory or hypothesis. **To try and control these artifacts, researchers use a variety of experimental designs and try to keep strict control over the research process so subjects and researchers will not intentionally or unintentionally influence the results.**

External Validity

2.8.2 External Validity

External validity refers to how well the results of a study can be generalized across populations, settings, and time. The external validity of a study can be severely affected by the interaction in an analysis of variables such as subject selection, instrumentation, and experimental conditions. A study that lacks external validity cannot be projected to other situations. The study is only valid for the sample tested.

Most procedures to guard against external invalidity relate to sample selection. *Here, three considerations must be taken into account:*

1. *Use random samples.*
2. *Use heterogeneous samples and replicate the study several times.*
3. *Select a sample that is representative of the group to which the results will be generalized.*

Using random samples rather than convenience or available samples allows researchers to gather information from a variety of subjects rather than those who may share similar attitudes, opinions, and lifestyles. As we will see later on, a random sample means that everyone (within the guidelines of the project) has an equal chance of being selected for the research study.

Several replicated research projects using samples with a variety of characteristics (heterogeneous) allow researchers to test hypotheses and research questions and not worry that the results will only relate to one type of subject.

Selecting a sample that is representative of the group to which the results will be generalized is basic common sense. For example, the results from a study of a group of high school students cannot be generalized to a group of college students.

A fourth way to increase external validity is to conduct research over a long period of time. Mass media research is often designed as short-term projects: subjects are exposed to an experimental treatment and are immediately tested or measured. However, in many

cases, the immediate effects of a treatment are negligible. In advertising, for example, research studies designed to measure brand awareness are generally based on only one exposure to a commercial or advertisement. It is well known that persuasion and attitude change rarely take place after only one exposure; they require multiple exposures over time. Logically, such measurements should be made over a period of weeks or months to take into account the sleeper effect: that attitude change may be minimal or nonexistent in the short run and still prove significant in the long run.

Presenting Results

2.9 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.**

Replication

2.10 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. The information presented in this chapter, and in other chapters that deal with internal and external validity, argues that this cannot be true.

A research question or hypothesis requires investigation from many different perspectives before any significance can be attributed to the results of any one study. Research methods and designs must be altered to eliminate design-specific results, that is, results that are based on, hence specific to, the design used. Similarly, subjects with a variety of characteristics should be studied from many angles to eliminate sam-pie-specific results; and statistical analyses need variation to eliminate method-specific results. In other words, all effort must be made to ensure that the results of any single study are not created by or dependent on a methodological factor; studies must be replicated.

Types of replication:

1. Literal replication

Researchers overwhelmingly advocate the use of replication to establish scientific fact. **Four basic types of replication can be used to help validate a scientific test.**

- **Literal replication** *involves the exact duplication of a previous*

analysis, including the sampling procedures, experimental conditions, measuring techniques, and methods of data analysis.

2. Operational replication

- **Operational replication** *attempts to duplicate only the sampling and experimental procedures of a previous analysis, to test whether the procedures will produce similar results.*

3. Instrumental replication

- **Instrumental replication** *attempts to duplicate the dependent measures used in a previous study and to vary the experimental conditions of the original study.*

4. Constructive replication

- **Constructive replication** *tests the validity of methods used previously by deliberately avoiding the imitation of the earlier study; both the manipulations and the measures used in the first study are varied.* The researcher simply begins with a statement of empirical "fact" uncovered in a previous study and attempts to find the same "fact."

Research Hazards

2.11 Research Hazards

All researchers quickly discover that research projects do not always turn out the way they were planned. It seems that Murphy's Law — anything that can go wrong will go wrong — holds true in any type of research. It is therefore necessary to be prepared for difficulties, however minor, in conducting a research project. Planning and flexibility are essential. **Presented below is what is known as the TAT (They're Always There) laws. Although these "laws" are somewhat tongue-in-cheek, they are nonetheless representative of the problems one may expect to encounter in research studies.**

1. *A research project always takes longer than planned.*
2. *No matter how many people review a research proposal and say that it's perfect before you start, they will always have suggestions to make it better after the study is completed.*
3. *There are always errors in data entry.*
4. *The data errors that take the longest to find and correct are the most obvious.*
5. *Regardless of the amount of money requested for a research project, the final project always costs more.*
6. *A computer program never runs the first time.*
7. *A sample is always too small.*
8. *Regardless of how many times a pilot study or pretest is conducted to make sure that measurement instructions are clear, there will always be at least one subject who doesn't understand the directions.*
9. *All electronic equipment breaks down during the most crucial part of an experiment.*
10. *Subjects never tell you how they really feel or what they really think or do.*

Chapter 3: Sampling

To make predictions about events, concepts, or phenomena, researchers must perform detailed, objective analyses. **One procedure to use in such analyses is a census, in which every member of the population is studied.** Conducting a census for each research project is impractical, however, and researchers must resort to alternative methods. **The most widely used alternative is to select a random sample from the population, examine it, and make predictions from it that can be generalized to the population. There are several procedures for identifying the units that are to compose a random sample.**

If the scientific procedure is to provide valid and useful results, researchers must pay close attention to the methods they use in selecting a sample. This chapter will describe several types of samples commonly used in mass media research. Some are elementary and do not require a great deal of time or resources. Other sampling methods entail great expense and time. Researchers must decide whether costs and time are justified in relation to the results generated.

Sampling procedures must not be taken lightly in the process of scientific investigation. It makes no sense to develop a research design for testing a valuable hypothesis or research question and then nullify this effort by neglecting correct sampling procedures. These procedures must be continually scrutinized to ensure that the results of an analysis are not sample-specific; that is, results are not based on the type of sample used in the study.

This chapter describes the basics of the sampling methods that are widely used in research. However, considering that sampling theory has become a distinct discipline in itself, there are some studies, such as nationwide surveys, that require a consultation of more technical discussions of sampling.

3.1 Population and Sample

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***.**

3.2 Probability and Nonprobability Samples

Probability and Nonprobability Samples

A probability sample is selected according to mathematical guidelines whereby the chance for selection of each unit is known. A nonprobability 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.

Consider the following four points:

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

1. Purpose of the study

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 nonprobability sample is often appropriate in situations of these types.

2. Cost versus value

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 nonprobability sample is a possible alternative.

3. Time constraints

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

4. Amount of error allowed: *In preliminary or pilot studies, where error control is not a prime concern, a nonprobability sample is usually adequate.*

Probability sampling generally incorporates some type of systematic selection procedure, such as a table of random numbers, to ensure

that each unit has an equal chance of being selected. However, it does not always guarantee a representative sample from the population, even when systematic selection is followed. It is possible to randomly select 50 members of the student body at a university in order to determine the average height of all students enrolled and, by extraordinary coincidence, end up with 50 candidates for the basketball team. Such an event is unlikely, but it is possible, and this possibility underscores the need to replicate any study.

3.3 Types of Nonprobability Samples

Types of Nonprobability Samples

Nonprobability sampling is frequently used in **mass media research**, particularly in the form of available samples, samples using volunteer subjects, and purposive samples. **Mall intercepts** use nonprobability sampling. **An available sample** (also known as convenience sample) **is a collection of readily accessible subjects for study, such as a group of students enrolled in an introductory mass media course, or shoppers in a mall.** Although available samples can be helpful in collecting exploratory information and may produce useful data in some instances, the samples are problematic because they contain unknown quantities of error. Researchers need to consider the positive and negative qualities of available samples before using them in a research study.

Available samples are a subject of heated debate in many research fields. Critics argue that regardless, of the 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 have contested the very notion of sample representativeness.

Available samples can be useful in pretesting 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.

Subjects who constitute a volunteer sample also form a nonprobability sample, since the individuals are not selected mathematically. There is concern in all areas of research with regard to persons who willingly participate in research projects; these subjects differ greatly from non-volunteers and may consequently produce erroneous research results. *The characteristics of volunteer subjects can be defined on the basis of several studies and found that such subjects, in comparison with nonvolunteers, 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 the 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 nonvolunteers, provide data to support a researcher's hypothesis. In some cases volunteer subjects are necessary—for example, in comparison tests of products or services. However, volunteers should be used with caution because, as with available samples, there is an unknown quantity of error present in the data.

Although volunteer samples have been shown to be inappropriate in scientific research, the electronic media have begun to legitimize volunteers through the various polls conducted on radio and television stations, and the television networks. Local television news programs, for example, often report the results of the latest "viewer poll" about some local concern. Even though announcers occasionally say that the polls are not intended to be scientific in nature, the results are presented as such. Unwary listeners and viewers are being conned by the media. Such telephone polls are disturbing to legitimate scientific researchers.

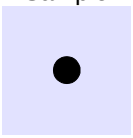
A purposive sample includes subjects selected on the basis of specific characteristics or qualities and eliminates those who fail to meet these criteria. Purposive samples are often used in advertising studies: researchers select subjects who use a particular type of product and ask them to compare it with a new product. 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. In a similar method, the 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).

Another nonprobability sampling method is to select subjects haphazardly 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 approached. For example, interviewing every 10^{th} 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.

Some researchers, research suppliers, and field services try to work around the problems associated with convenience samples in mall intercepts by using a procedure based on what is called "The Law of Large Numbers." Essentially, the researchers interview thousands of respondents instead of hundreds. The presumption (and sales approach used on clients) is that the large number of respondents eliminates the problems of convenience sampling. It *does not.* The large number approach is still a convenience sample. It is not a random sample as described in the first sentence of the next section.

Types of Probability Sample

1. Simple Random Sample



3.4 Types of Probability Sample

3.4.1 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 nationwide surveys.

Researchers usually use a table of random numbers to generate a simple random sample. For example, a researcher, who wants to analyze 10 prime-time television programs out of a total population of 100 programs to determine how the medium portrays elderly people, can take a random sample from the 100 programs by numbering each show from 00 to 99 and then selecting 10 numbers from a table of random numbers. First, a starting point in the table is selected at random. There is no specific way to choose a starting point; it is an arbitrary decision. The researcher then selects the remaining 9 numbers by going up, down, left, or right on the table — or even randomly throughout the table. For example, if it is decided to go down in the table from the starting point 44 until a sample of 10 has been drawn, the sample would include television programs numbered 44, 85, 46, 71, 17, 50, 66, 56, 03, and 49.

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.

Unfortunately, a large number of the telephone numbers generated by this method of random digit dialing are invalid because some phones have been disconnected, some numbers generated have not yet been assigned, and for other reasons. Therefore, it is advisable to produce at least three times the number of telephone numbers needed; if a sample of 100 is required, at least 300 numbers should be generated to allow for invalid numbers.

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. One first selects a number from a list of telephone numbers (a directory or list purchased from a supplier). Assume that the number 448-3047 was selected from the list. The researcher could simply add a predetermined number, say 6, to produce 448-3053; or a predetermined two-digit number, say 21, to achieve 448-3068; or even a three-digit number, say 112, to produce 448-3159. Each variation of the method helps to eliminate many of the invalid numbers produced in pure random number generation, since telephone companies tend to distribute telephone numbers in series, or blocks. In this example, the block 30— is in use, and there is a good chance that random add-ons to this block will be residential telephone 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 selection procedure must be free from subjective intervention by the researcher.** *The purpose of random sampling is to reduce sampling error; violating random sampling rules only increases the chance of introducing such error into a study.*

Similar in some ways to simple random sampling is a procedure called systematic sampling, in which every X subject or unit is selected from a population. For example, to get a sample of 20 from a population of 100, or a sampling rate of 1/5, a researcher randomly selects a starting point and a sampling interval. Thus, if the number 11 is chosen, the sample will include the 20 subjects or items numbered 11, 16, 21, 26, and so on. To add further randomness to the process, the researcher may randomly select both the starting point and the interval. For example, an interval of 11 together with a starting point of 29 would generate the numbers 40, 51, 62, 73, and so on.

Advantages

A) 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.*

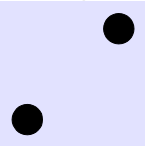
Disadvantages

B) 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.*

3.4.2 Systematic Sample

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, *Broadcasting/Cdblecasting Yearbook,* and *Editor & Publisher.*

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. However, **lists that include all the members of a population** have a high degree of precision. Before deciding to use systematic sampling, one should consider the goals and purpose of a study, as well as the availability of a comprehensive list of the population. If such a list is not available, systematic sampling is probably ill-advised.

One major problem associated with systematic sampling is that the procedure is susceptible to periodicity; that is, the arrangements or order of the items in the population list may bias the selection process. For example, consider the problem mentioned earlier of analyzing television programs to determine how the elderly are portrayed. Quite possibly, every 10th program listed may have been aired by Channel 1; the result would be a nonrepresentative sampling of the three networks.

Periodicity also causes problems when telephone directories are used to select samples. The alphabetical listing does not allow each person or household an equal chance of being selected. One way to solve the problem is to cut each name from the directory, place them in a "hat," and draw names randomly. Obviously, this would take days to accomplish and is not a real alternative. An easier way to use a directory is to tear the pages loose, mix them up, randomly select pages, and then randomly select names. Although this procedure doesn't totally solve the problem, it is generally accepted when simple random sampling is impossible. If periodicity is eliminated, systematic sampling can be an excellent sampling methodology.

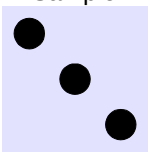
Advantages

A) Advantages

1. *Selection is easy.*
2. *Selection can be more accurate than in a simple random*

Disadvantages

3. Stratified Sample



sample.

3. *The procedure is generally inexpensive.*

B) Disadvantages

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

3.4.3 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 ensures that a sample is drawn from a homogeneous subset of the population, that is, from a population with similar characteristics. Homogeneity helps researchers to reduce sampling error. For example, consider a research study on subjects' attitudes toward two-way, interactive cable television. The investigator, knowing that cable subscribers tend to have higher achievement levels, may wish to stratify the population according to education. Before randomly selecting subjects, the researcher divides the population into three levels: grade school, high school, and college. Then, if it is determined that 10% of the population completed college, a random sample proportional to the population should contain 10% who meet this standard. **The stratified sampling ensures the proper representation of the stratification variables to enhance representation of other variables related to them. Taken as a whole, then, a stratified sample is likely to be more representative on a number of variables than a simple random sample.**

Stratified sampling can be applied in two different ways. Proportionate stratified sampling *includes strata with sizes based on their proportion in the population.* If 30% of the population is adults (18 – 24 years), 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.* **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. For example, a radio station that targets 25- to 54-year-old individuals may have ratings problems with the 25- to 34-year-old group. In a telephone study of 500 respondents, the station management may wish to have the sample represented as: years old, 70% 25-34, 20% 35-49, and 10% 50-54. This distribution would allow researchers to break the 25-34 group in smaller groups such as males, females, fans of specific stations, and other subcategories and still have reasonable sample sizes.

Advantages

A) Advantages

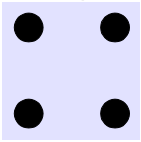
1. *Representativeness of relevant variables is ensured.*
2. *Comparisons can be made to other populations.*
3. *Selection is made from a homogeneous group.*
4. *Sampling error is reduced.*

Disadvantages

B) Disadvantages

1. *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



3.4.4 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.

Cluster sampling creates two types of error: in addition to the error involved in defining the initial clusters, errors may arise in selecting from the clusters. For example, a zip code area may comprise mostly residents of a low socio-economic status who are unrepresentative of the remainder of the state; if selected for analysis, such a group may confound the research results. **To help control such error, it is best to use small areas or clusters, both to decrease the number of elements in each cluster and to maximize the number of clusters selected.**

In many nationwide studies, researchers use a form of cluster sampling called multistage sampling, in which individual households or persons are selected, not groups. Figure 3.1 demonstrates a four-stage sequence for a nationwide survey. First, a cluster of counties (or another specific geographic area) in the

United States is selected. This cluster is narrowed by randomly selecting a county, district, or block group within the principal cluster. Next, individual blocks are selected within each area. Finally, a convention such as "the third household from the northeast corner" is established, and then the individual households in the sample can be identified by applying the selection formulation the stages just described.

In many cases researchers also need to randomly select an individual in a given household. In most cases researchers cannot count on being able to interview the person who happens to answer the telephone. *Usually demographic quotas are established for a research study, which means that a certain percentage of all respondents must be of a certain sex or age. In this type of study, researchers determine which person in the household should answer the questionnaire by using a form of random numbers table.*

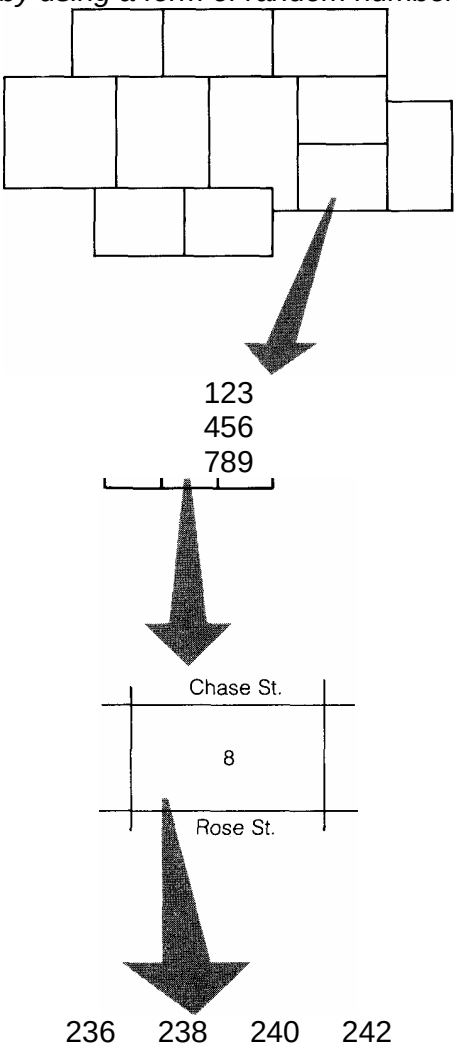


Figure 3.1: Four-stage sequence for a nationwide survey

To get a random selection of individuals in the selected households, the interviewer simply asks each person who answers the telephone, "How many people are there in your home who is aged 12 or older?" If the first respondent answers "Five," the interviewer asks to speak to the fifth oldest (the youngest in this case) person in the home. Each time a call is completed, the interviewer checks off on the table the number representing the person questioned. If the next household called also had five family members, the interviewer would move to the next number in the 5 column and ask to talk to the third oldest person in the home.
The same table can be used to select respondents by sex. That is, the interviewer could ask, "How many males who are age 12 or older live in your home?" The interviewer could then ask for the "n^{th}" oldest male, or female, according to the requirements of the survey.

Since media are complex systems, researchers frequently encounter complicated sampling methods. These are known as *hybrid* situations. Consider some researchers attempting to determine the potential for videotext distribution of a local newspaper to cable subscribers. This problem requires investigating readers and nonreaders of the newspaper as well as cable subscribers and nonsubscribers. The research, therefore, requires random sampling from the following four groups:

Group A Subscribers/Readers
Group B Subscribers/Nonreaders
Group C Nonsubscribers/Readers
Group D Nonsubscribers/Nonreaders

Researchers must identify each subject as belonging to one of these four groups. If three variables were involved, sampling from eight groups would be required, and so on. In other words, researchers are often faced with very complicated sampling situations that involve numerous steps.

Advantages

A) Advantages

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

Disadvantages

B) 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

3.5 Sample Size

Determining an adequate sample size is one of the most controversial aspects of sampling. How large must a sample be to provide the desired level of confidence in the results? Unfortunately, there is no simple answer. *There are suggested sample sizes for various statistical procedures, but no single sample size formula or method is available for every research method or statistical procedure. For this reason, it is advisable to consult sampling texts for information concerning specific techniques.*

The size of the sample required for a study depends on at least one or more of the following seven points: (1) project type, (2) project purpose, (3) project complexity, (4) amount of error willing to be tolerated, (5) time constraints, (6) financial constraints, and (7) previous research in the area. Research designed as a preliminary investigation to search for general indications generally does not require a large sample. However, projects intended to answer significant questions (those designed to provide information for decisions involving large sums of money or decisions that may affect people's lives) require high levels of precision and, therefore, large samples.

A few general principles are used to guide researchers in determining an acceptable sample size. These suggestions are not based on mathematical or statistical theory, but they should provide a starting point in most cases.

1. **A primary consideration in determining sample size is the research method used.** Focus groups (Chapter 7) 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 pretesting 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. For example, assume a researcher is planning to conduct a telephone study with adults 18 - 54. Using the normal mass media age spans of 18 - 24, 25 - 34, 35 - 44, and 45 - 54, the researcher would probably consider a total sample of 400 as satisfactory (100 per age group, or "cell"). However, the researcher may also wish to investigate the differences in opinions/attitudes among men and women, which produces a total of eight different demographic cells. In this case, a sample of 800 would probably be used — 100 for each of the cell possibilities.
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 sample are usually prohibitive. Research with 1,000 respondents can easily exceed $50,000. Most research work is conducted using a sample that conforms to the project's budget. If a small sample is forced on a researcher by someone else (a client or project manager), the results must be interpreted accordingly — that is, with caution regarding the generalization of results.

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;
5. **100 = poor; 200 = fair; 300 = good; 500 = very good; 1,000 = excellent.** Other researchers suggest using a sample of 100 plus 1 subject for each dependent variable in the analysis.
6. **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. Subject mortality is especially prevalent in panel studies, where the same group of subjects is tested or measured frequently over a long period of time. In most cases, researchers can expect from 10% to 25% of the sample to drop out of a study before it is completed.
7. **Information about sample size is available in published research.** Consulting the work of other researchers provides a base from which to start. If a survey is planned and similar research indicates that a representative sample of 400 has been used regularly with reliable results, a sample larger than 400 may be unnecessary.
8. Generally speaking, **the larger the sample used the better.** However, a large unrepresentative sample is as meaningless as a small unrepresentative sample, so researchers should not consider numbers alone. Quality is always more important in sample selection than mere size.

Sampling Error

3.6 Sampling Error

Since researchers deal with samples from a population, there must be some way for them to compare the results of (or make inferences about) what was found in the sample to what exists in the target population. The comparison allows researchers to determine the accuracy of their data and involves the computation of error. **All researches involve error: sampling error, measurement error, and random error (also called unknown or uncontrollable error). Sampling error is also known as standard error. The different sources of error are additive. That is, total error is the sum of the three different sources.** This section discusses sampling error in mass media research.

Sampling error occurs when measurements taken from a sample do not correspond to what exists in the population. For example, assume we wish to measure attitudes toward a new television program by 18- to 24-year-old viewers in Denver, Colorado. Further assume that all the viewers produce an average score of 6 on a 10-point program appeal measurement scale. Some viewers may dislike the program and rate the show a 1, 2 or 3, some find it mediocre and rate it 4, 5, 6, or 7, whereas the remaining viewers consider the show one of their favorites and rate it an 8, 9, or 10. The differences among the 18- to 24-year-old viewers provide an example of how sampling error may occur. If we asked each viewer to rate the show in a separate study and each one rated the program a 6, then no error exists. However, an error-free sample is unlikely.

Respondent differences do exist; some dislike the program and others like it. Although the average program rating is 6 in the hypothetical example, it is possible to select a sample from the target population that does not match the average rating. A sample could be selected that includes only viewers who dislike the program. This would misrepresent the population because the average appeal score would be lower than the mean score. Computing the rate of sampling error allows researchers to have an idea concerning the risk involved in accepting research findings as "real."

Computing sampling error is appropriate only with probability samples. Sampling error cannot be computed in research using non-probability samples because everyone did not have an equal chance of being selected. This is one reason why nonprobability samples are used only in preliminary research or in studies where error rates are not considered important.

Sampling error computations are essential in research and are based on the concept of the central limit theorem. *In its simplest form, the theorem states that the sum of a large number of independent and identically distributed random variables (or sampling distributions), has an approximate normal distribution. A theoretical sampling distribution is the set of all possible samples of a given size. This distribution of values is described by a bell-shaped curve, or normal curve (also known as a Gaussian distribution, after German mathematician and astronomer Karl F. Gauss who used the concept to analyze observational errors). The normal distribution is important in computing sampling error because sampling errors (a sampling distribution) made in repeated measurements tend to be normally distributed.*

Computing standard error is a process of determining, with a certain amount of confidence, the difference between a sample and the target population. Error occurs by chance, or through some fault of the research procedure. However, when probability sampling is used,

the incidence of error can be determined because of the relationship between the sample and the normal curve. *A normal curve is symmetrical about the mean or midpoint, which indicates that an equal number of scores lie on either side of the midpoint.*

In *every normal distribution, the standard deviation defines a standard unit of distance from the midpoint of the distribution to the outer limits of the distribution. These standard deviation interval unit(values) are used in establishing a confidence interval that is accepted in a research project. In addition, the standard deviation units indicate the amount of standard error.* For example, using an interval (confidence interval) of + or — one standard deviation unit — 1 standard error — says that the probability is that 68% of the sample selected from the population will produce estimates within that distance from the population value (one standard deviation unit).

3.6.1 Computing Standard Error

Computing Standard Error

The essence of statistical hypothesis testing is to draw a sample from a target population, compute some type of statistical measurement, and compare the results to the theoretical sampling distribution. The comparison determines the frequency with which sample values of a statistic are expected to occur.

The *expected* value of a statistic is the mean of the sampling distribution. The standard error is the standard deviation of the sampling distribution. There are several ways to compute standard (sampling) error, but no single method is appropriate for all sample types or for all situations. In addition, error formulas vary in complexity. One error formula, designed for estimating audience sizes during certain time periods or for certain programs and for measuring cumulative audiences uses the standard error of a percentage derived from a simple random sample. **If the sample percent is designated as *p,* the size of the sample as *n,* and the estimated or standard error of the sample percentage as *SE(p),* the formula is:**

$$SE(p) = \sqrt{\frac{p(100 - p)}{n}}$$

Suppose a random sample of 500 households produces a rating (or estimate of the percentage of viewers) of 20 for a particular show. This means that 20% of those households were tuned in to that channel at that time. **The formula can be used to calculate the standard error as follows:**

$$SE(p) = \sqrt{\frac{20\,(80)}{500}}$$

$$= \sqrt{\frac{1{,}600}{500}}$$

$$= \sqrt{3.2}$$

$$= \pm 1.78$$

That is, the rating of 20 computed in the survey is subject to an error of ± 1.78 points; the actual rating could be as low as 18.22 or as high as 21.78.

Standard error is directly related to sample size. The error figure improves as the sample size is increased, but in decreasing increments. Thus, an increase in sample size does not provide a big gain. As can be seen, even with a sample of 1,500, the standard error is only .75 better than with a sample of 500 computed above. A researcher would need to determine whether the increase in time and expense caused by an additional 1,000 subjects would justify such a proportionally small increase in precision.

The following table shows the amount of error at the 95% confidence level for measurements that contain dichotomous variables (such as "yes/ no"). For example, with a sample of 1,000 and a 30% "yes" response to a question, the probable error due to sample size alone is ± 2.9. This means that we are 95% sure that our values for this particular question fall between 27.1% and 32.9%. Sampling error is an important concept in all research areas because it provides an indication of the degree of accuracy of the research.

Research studies published by large audience measurement firms such as Arbitron and A. C. Nielsen are required by the Electronic Media Ratings Council to include simplified charts to assist in determining sampling error. In addition, each company provides some type of explanation about error, such as the Arbitron statement contained in every ratings book:
Arbitron estimates are subject to statistical variances associated with all surveys using a sample of the universe. . . . The accuracy of Arbitron estimates, data and reports and their statistical evaluators cannot be determined to any precise mathematical value or definition.

Statistical error due to sampling is found in all research studies. Researchers must pay specific attention to the potential sources of error in any study. Producing a study riddled with error is tantamount to never having conducted the study at all. If the magnitude of error was subject to accurate assessment, researchers could simply determine the source of error and correct it. Since this is not possible, however, they must accept error as part of the research process,

attempt to reduce its effects to a minimum, and remember always to interpret their results with regard to its presence.

3.7 Sample Weighting

Sample Weighting

In an ideal research study, a researcher should have enough respondents or subjects with the required demographic, psychographic (why people behave in specific ways), or lifestyle characteristic. The ideal sample, however, is rare, due to the time and budget constraints of most research. Instead of canceling a research project because of sampling inadequacies, most researchers utilize a statistical procedure known as weighting, or sample balancing. That is, when subject totals in given categories do not reach the necessary population percentages, subjects' responses are multiplied (weighted) to allow for the shortfall. A single subject's responses may be multiplied by 1.3, 1.7, 2.0, or any other figure to reach the predetermined required level.

Subject weighting is a controversial data manipulation technique, especially in the area of broadcast ratings. The major question is just how much one subject's responses can be weighted and still be representative.

Chapter 4: Survey Research

Definition

Survey research is an important and useful method of data collection. The survey is also one of the most widely used methods of media research, primarily due to its flexibility. Surveys, however, involve a number of steps. **Researchers must decide whether to use a descriptive or an analytical approach; define the purpose of the study; review the available literature in the area; select a survey approach; a questionnaire design, and a sample; analyze and interpret the data; and, finally, decide whether to publish or disseminate the results.** These steps are not necessarily taken in that order, but all must be considered before a survey is conducted.

To ensure that all the steps in the survey process are in harmony, researchers should conduct one or more pilot studies to detect any errors in the approach. Pilot studies save time, money, and frustration, since an error that could void an entire analysis sometimes is overlooked until this stage.

Questionnaire design is also a major step in any survey. In this chapter, examples have been provided to show how a question or interviewing approach may elicit a specific response. The goal in questionnaire design is to avoid bias in answers. Question wording, length, style, and order may affect a respondent's answers. Extreme care must be taken when questions are developed to ensure that they are neutral. To achieve a reasonable response rate, researchers should consider including an incentive, notifying survey subjects beforehand, and personalizing the questionnaire. Also, researchers should mention the response rate in their description of the survey.

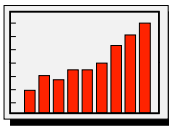
Finally, researchers are charged with selecting a survey approach from among four basic types: mail, telephone, personal interview, and group administration. Each approach has advantages and disadvantages that must be weighed before a decision is made. The type of survey will depend on the purpose of the study, the amount of time available to the researcher, and the funds available for the study. In the future, survey researchers may depend less on the face-to-face survey and more on computer-assisted telephone interviewing.

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 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.

The increased use of surveys has created changes in the way they are conducted and reported. More attention is now given to sample selection, questionnaire design, and error rates. This means that surveys require careful planning and execution; mass media studies using survey research must take into account a wide variety of decisions and problems. This chapter acquaints the researcher with the basic steps of survey methodology.

Descriptive and Analytical Surveys



4.1 Descriptive and Analytical Surveys

At least two major types of surveys are used by researchers: descriptive and analytical. A descriptive survey attempts to picture or document current conditions or attitudes, that is, to *describe* what exists at the moment. For example, the Department of Labor regularly conducts surveys on the amount of unemployment in the United States. Professional pollsters survey the electorate to learn its opinions of candidates or issues. Broadcast stations and networks continually survey their audiences to determine programming tastes, changing values, and lifestyle variations that might affect programming. In descriptive surveys of this type, researchers are interested in discovering the current situation in a given area.

Analytical surveys attempt to describe and explain *why* certain situations exist. In this approach two or more variables are usually examined to test research hypotheses. The results allow researchers to examine the interrelationships among variables and to draw explanatory inferences. For example, television station owners occasionally survey the market to determine how lifestyles affect viewing habits, or to determine whether viewers' lifestyles can be used to predict the success of syndicated programming. On a much broader scale, television networks conduct yearly surveys to determine how the public's tastes and desires are changing and how these attitudes relate to the perception viewers have of the three commercial networks.

Advantages of Survey Research

4.2 Advantages of Survey Research

Surveys have certain well-defined advantages. **First, they can be used to investigate problems in realistic settings.** Newspaper reading, television viewing, and consumer behavior patterns can be

examined where they happen, rather than in a laboratory or screening room under artificial conditions.

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. The survey technique allows the researcher to examine many variables (demographic and lifestyle information, attitudes, motives, intentions, and so on) and to use multivariate statistics to analyze the data. Also, geographic boundaries do not limit most surveys.

Finally, data helpful to survey research already exist. Data archives, government documents, census materials, radio and television rating books, and voter registration lists can be used as *primary* sources (main sources of data) or as *secondary* sources (supportive data) of information. With archive data, it is possible to conduct an entire survey study without ever developing a questionnaire or contacting a single respondent.

Disadvantages of Survey Research

4.3 Disadvantages of Survey Research

Survey research is not a perfect research methodology. The technique also possesses several disadvantages. **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 noncausal.* That is, a survey may establish that A and B are related, but it is impossible to determine solely from the survey results that A causes B. *Causality is difficult to establish because many intervening and extraneous variables are involved. Time series studies help correct this problem sometimes, but not always.*

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 researches are 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. Telemarketers (telephone salespeople) are essentially destroying mass media research. More and more people refuse to participate in legitimate studies for fear of attempts by the interviewer to try to sell something.

Even considering some of the problems, surveys can produce reliable and useful information. They are especially useful for collecting information on audiences and readership. General problems in survey research are discussed at the end of the chapter.

Constructing Questions

4.4 Constructing Questions

Two basic considerations apply to the construction of good survey questions: (1) The questions must clearly and unambiguously convey the desired information to the respondent, and (2) the questions should be worded to allow accurate transmission of respondents' answers to researchers.

Questionnaire design depends on choice of data collection technique. Questions written for a mail survey must be easy to read and understand, since respondents are unable to obtain explanations. Telephone surveys cannot use questions with long lists of response options; the respondent may forget the first few responses by the time the last ones have been read. Questions written for group administration must be concise and easy for the respondents to answer. In a personal interview the interviewer must tread lightly with sensitive and personal questions, which his or her physical presence might make the respondent less willing to answer. (These procedures are discussed in greater detail later in this chapter.)

The design of a questionnaire must always reflect the basic purpose of the research. A complex research topic such as media use during a political campaign requires more detailed questions than does a survey to determine a favorite radio station or magazine. Nonetheless, there are several general guidelines to follow regarding wording of questions and question order and length.

Types of Questions

4.4.1 Types of Questions

Surveys can consist of two basic types of questions, open-ended and closed-ended. An open-ended question requires respondents to generate their own answers. For example:

What do you like most about your local newspaper?

What type of television program do you prefer? What are the three most important problems in your community?

Open-ended questions allow respondents freedom in answering questions and the chance to provide in-depth responses.

Furthermore, they give researchers the opportunity to ask: "Why did you give that particular answer?" or "Could you explain your answer in more detail?" This flexibility to follow up on, or probe, certain questions enables the interviewers to gather information about the respondents' feelings and the motives behind their answers.

Also, open-ended questions allow for answers that researchers did not foresee in the construction of the questionnaire—answers that may suggest possible relationships with other answers or variables. For example, in response to the question, "What types of programs would you like to hear on radio?" the manager of a local radio station might expect to hear "news" and "weather" or "sports." However, a subject may give an unexpected response, such as "obituaries" (Fletcher & Wimmer, 1981). This will force the manager to reconsider his perceptions of some of the local radio listeners.

Finally, open-ended questions are particularly useful in a pilot version of a study. Researchers may not know what types of responses to expect from subjects, so open-ended questions are used to allow subjects to answer in any way they wish. From the list of responses provided by the subjects, the researcher then selects the most-often mentioned items and includes them in multiple-choice or forced-choice questions. Using open-ended questions in a pilot study generally saves time and resources, since all possible responses are more likely to be included on the final measurement instrument; there would be no reason to reconduct the analysis for failure to include an adequate number of responses or response items.

The major disadvantage associated with open-ended questions is the amount of time needed to collect and analyze the responses. Open-ended responses required interviewers to spend a lot of time writing down or typing answers. In addition, because there are so many types of responses, a content analysis (Chapter 8) of each open-ended question must be completed to produce data that can be tabulated. A content analysis groups common responses into categories, essentially making the question closed-ended. The content analysis results are then used to produce a codebook to code the open-ended responses. A codebook is essentially a menu or list of quantified responses. For example, "I hate television" may be coded as a 5 for input into the computer.

In the case of closed-ended questions, respondents select an answer from a list provided by the researcher. These questions are popular because they provide greater uniformity of response, and because the answers are easily quantified. The major disadvantage is that researchers often fail to include some important responses. Respondents may have an answer different from those that are supplied. *One way to solve the problem is to include an "other" response followed by a blank space, to give respondents an opportunity to supply their own answer. The "other" responses are*

then handled just like an open-ended question—a content analysis of the responses is completed to develop a codebook. A pilot study or pretest of a questionnaire often solves most problems with closed-ended questions.

4.4.2 Problems in Interpreting Open-Ended Questions

Problems in Interpreting Open-Ended Questions

Open-ended questions often provide a great deal of frustration. *In many cases, respondents' answers are bizarre. Sometimes respondents don't understand a question and provide answers that are not relevant. Sometimes interviewers have difficulty understanding respondents, or they may have problems with spelling what the respondents say. In these cases, researchers must interpret the answer and determine which code is appropriate.*

The following examples are actual verbatim comments from telephone surveys conducted by Paragon Research in Denver, Colorado. They show that even the most well-planned survey questionnaire can produce a wide range of responses. The survey question asked: "How do you describe the programming on your favorite radio station?" Some responses were:

1. The station is OK, but it's geared to Jerry Atrics.
2. I only listen to the station because my poodle likes it.
3. The music is good, but sometimes it's too Tiny Booper.
4. It's great. It has the best floor mat in the city.
5. The station is good, but sometimes it makes me want to vomit.
6. It's my favorite, but I really don't like it since my mother does.
7. My parrot is just learning to talk, and the station teaches him a lot of words.
8. My kids hate it, so I turn it up real loud.
9. It sounds great with my car trunk open.
10. My boyfriend forces me to listen.

4.4.3 General Guidelines

General Guidelines

Before examining whether specific question types are appropriate for survey research, some general do's and don'ts about writing questions are in order.

1. Make questions clear

1. Make questions clear: *This should go without saying,* but many researchers become so closely associated with a problem that they can no longer put themselves in the respondents' position. What might be perfectly clear to researchers might not be nearly as clear to persons answering the question. For example, "What do you think of our company's rebate program?" might seem to be a perfectly sensible question to a researcher, but to respondents it might mean, "Is the monetary amount of the rebate too small?" "Is the rebate given on the wrong items?" "Does it take too long for the rebate to be paid?" or "Have the details of the program been poorly explained?" Questionnaire items must be phrased precisely so that respondents

know what is being asked.

Making questions clear also requires avoiding difficult or specialized words, acronyms, and stilted language. In general, the level of vocabulary commonly found in newspapers or popular magazines is adequate for a survey. Questions should be phrased in everyday speech, and social science jargon, whereas, technical words should be eliminated.

The clarity of a questionnaire item can be affected by double or hidden meanings in the words that are not apparent to investigators. For example, the question, "How many television shows do you think are a little too violent-most, some, few, or none?" contains such a problem. Some respondents who feel that all TV shows are extremely violent will answer "none" on the basis of the question's wording. These subjects reason that all shows are more than "a little too violent"; therefore, the most appropriate answer to the question is "none." Deleting the phrase "a little" from the question helps avoid this pitfall. In addition, the question inadvertently establishes the idea that *at least some* shows are violent. The question should read, "How many television shows, *if any, do* you think are too violent—most, some, few, or none?" Questions should be written so they are fair to all types of respondents.

2. Keep questions short

2. Keep questions short: *To be precise and unambiguous, researchers sometimes write long and complicated items.* However, respondents who are in a hurry to complete a questionnaire are unlikely to take the time to study the precise intent of the person who drafted the items. Short, concise items that will not be misunderstood are best.

3. Remember the purposes of the research

3. Remember the purposes of the research: *It is important to include in a questionnaire only items that directly relate to what is being studied.* For example, if the occupational level of the respondents is not relevant to the hypothesis, the questionnaire should not ask about it. Beginning researchers often add questions merely for the sake of developing a longer questionnaire. Keep in mind that parsimony in questionnaires is a paramount consideration.

4. Do not ask double-barreled questions

4. Do not ask double-barreled questions: *A double-barreled question is one that actually asks two or more questions.* Whenever the word *and* appears in a question, the sentence structure should be examined to see whether more than one question is being asked. For example, "This product is mild on hands and gets out stubborn stains. Do you agree - or disagree?" Since a product that gets out stubborn stains might at the same time be highly irritating to the skin, a respondent could agree with the second part of the question while disagreeing with the first part. This question should be divided into two items.

5. Avoid biased words or terms

5. Avoid biased words or terms: Consider the following item: "In your free time, would you rather read a book or just watch television?" The word just in this example injects a pro-book bias into the question because it implies that there is something less than desirable about watching television. In like manner, "Where did you hear the news about the president's new program?" is mildly biased against newspapers; the word here suggests that "radio," "television," or "other people" is amore appropriate answer. Questionnaire items that start off with "Do you agree or disagree with so-and-so's proposal to . . ." almost always bias a question. If the name "Adolph Hitler" is inserted for "so-and-so," the item becomes overwhelmingly negative. By inserting "the President," a potential for both positive and negative bias is created. *Any time a specific person or source is mentioned in a question, the possibility of introducing bias arises.*

6. Avoid leading questions

6. Avoid leading questions: **A leading question is one that suggests a certain response (either literally or by implication) or contains a hidden premise.** For example, "Like most Americans, do you read a newspaper every day?" suggests that the respondent should answer in the affirmative or run the risk of being unlike most Americans. The question "Do you still use marijuana?" contains a hidden premise. **This type of question is usually referred to as a *double bind:*** regardless of how the respondent answers, an affirmative response to the hidden premise is implied — in this case, he or she has used marijuana at some point.

7. Do not use questions that ask for highly detailed information.

7. Do not use questions that ask for highly detailed information. The question "In the past 30 days, how many hours of television have you viewed with your family?" is unrealistic. Few respondents could answer such a question. A more realistic approach would be to ask, "How many hours did you spend watching television with your family yesterday?" A researcher interested in a 30-day period should ask respondents to keep a log or diary of family viewing habits.

8. Avoid potentially embarrassing questions unless absolutely necessary

8. Avoid potentially embarrassing questions unless absolutely necessary: *Most surveys need to collect data of a confidential or personal nature, but an overly personal question may cause embarrassment and inhibit respondents from answering honestly. Two common areas with high potential for embarrassment are age and income.* Many individuals are reluctant to tell their exact ages to strangers doing a survey. Instead of asking directly how old a respondent is, it is better to allow some degree of confidentiality by asking, "Now, about your age — are you in your 20s, 30s, 40s, 50s, 60s, . . . ?" Most respondents are willing to state what decade they fall in, and this information is usually adequate for statistical purposes. Interviewers might also say, "I'm going to read several age categories to you. Please stop me when I reach the category you're in."

Income may be handled in a similar manner. A straightforward, "What is your annual income?" often prompts the reply, "None of your

business." It is more prudent to preface a reading of the following list with the question "Which of these categories includes your total annual Income"

- More than $30,000
- $15,000-$29,999
- $8,000-$14,999
- $4,000-$7,999
- $2,000-$3,999
- Under $2,000

These categories are broad enough to allow respondents some privacy but narrow enough for statistical analysis. Moreover, the bottom category, "Under $2,000," was made artificially low so that individuals who fall into the $2,000-$3,999 slot would not have to be embarrassed by giving the very lowest choice. The income classifications depend on the purpose of the questionnaire and the geographic and demographic distribution of the subjects. The $30,000 upper level in the example would be much too low in several parts of the country.

Other potentially sensitive areas include people's sex lives, drug use, religion, business practices, and trustworthiness. In all these areas, care should be taken to ensure respondents of confidentiality and even anonymity, when possible.

The simplest type of closed-ended question is one that provides a dichotomous response, usually "agree/disagree" or "yes/no." For example:
Television stations should editorialize.

- Agree
- Disagree
- No opinion

While such questions provide little sensitivity to different degrees of conviction, they are the easiest to tabulate of all question forms. Whether they provide enough sensitivity is a question the researcher must seriously consider.
The multiple-choice question allows respondents to choose an answer from several options. For example:

In general, television commercials tell the truth. . .

- All of the time
- Most of the time
- Some of the time
- Rarely
- Never

Multiple-choice questions should include all possible responses. A question that excludes any significant response usually creates

problems. For example:
What is your favorite television network?

- Channel 1
- Channel 2
- Channel 3

Subjects who favor Channel 4 or 5 (although not *networks* in the strictest sense of the word) cannot answer the question as presented.

Additionally, *multiple-choice responses must be mutually exclusive*: there should be only one response option per question for each respondent. For instance:
How many years have you been working in newspapers?

- Less than one year
- One to five years
- Five to ten years

Which blank should a person with exactly five years of experience check? One way to correct this problem is to reword the responses, such as:
How many years have you been working in the Cairo University?

- Less than one year
- One to five years
- Six to ten years

Ratings scales are also widely used in social research. They can be arranged horizontally or vertically:

There are too many commercials on TV.

- Strongly agree (translated as a 5 for analysis)
- Agree (translated as a 4) Neutral (translated as a 3)
- Disagree (translated as a 2)
- Strongly Disagree (translated as a l)

What is your opinion of TV news?

Fair __ __ __ __ __ Unfair
(5) (4) (3) (2) (1)

Semantic differential scales are another form of rating scale and are frequently used to rate persons, concepts, or objects. These scales use bipolar adjectives with seven scale points:

How do you perceive the term public television?

Good	---- ---- ---- ---- ---- ---- ----	Bad
Happy	---- ---- ---- ---- ---- ---- ----	Sad
Uninteresting	---- ---- ---- ---- ---- ---- ----	Interesting
Dull	---- ---- ---- ---- ---- ---- ----	Exciting

In many instances researchers are interested in the relative perception of several concepts or items. In such cases the rank ordering technique is appropriate. Here are several common occupations. Please rank them in terms of their prestige. Put a 1 next to the profession that has the most prestige, a 2 next to the one with the second most, and so on.

- Police officer
- Banker
- Lawyer
- Politician
- TV reporter
- Teacher
- Dentist
- Newspaper writer

Ranking of more than a dozen objects is not recommended because the process can become tedious and the discriminations exceedingly fine. Furthermore, ranking data imposes limitations on the statistical analysis that can be performed.

The checklist question is often used in pilot studies to refine questions for the final project. For example:

What things do you look for in a new television set? (Check as many as apply.)

- Automatic fine tuning
- Remote control
- Large screen
- Cable ready
- Console model
- Portable Stereo sound
- Other _____

The most frequently checked answers may be used to develop a multiple-choice question; the unchecked responses are dropped.

Forced-choice questions are frequently used in media studies designed to gather information about lifestyles and are always listed in pairs. Forced-choice questionnaires are usually very long — sometimes dozens of questions — and repeat questions (in different form) on the same topic. The answers for each topic are analyzed for patterns, and a respondent's interest in that topic is scored. A typical forced-choice questionnaire might contain the following pairs:

Select one statement from each of the following pairs of statements:

- I enjoy attending parties with my friends.
- I enjoy staying at home alone.
- o Gun control is necessary to stop crime.
- o Gun control can only increase crime.

- If I see an injured animal, I always try to help it.
- If I see an injured animal, I figure that nature will take care of it.

Respondents generally complain that neither of the responses to a forced-choice question is satisfactory, but they have to select one or the other. Through a series of questions on the same topic (violence, lifestyles, career goals), a pattern of behavior or attitude generally develops.

Fill-in-the-blank questions are used infrequently by survey researchers. However, some studies are particularly suited for fill-in-the-blank questions. In advertising copy testing, for example, they are often employed to test subjects' recall of a commercial. After seeing, hearing, or reading a commercial, subjects receive a script of the commercial in which a number of words have been randomly omitted (often every fifth or seventh word). Subjects are required to fill in the missing words to complete the commercial. *Fill-in-the-blank questions can also be used in information tests.* For example, "The senators from your state are _____ and _____." Or, "The headline story on the front page was about _____."

Tables, graphs, and figures are also used in survey research. Some ingenious questioning devices have been developed to help respondents more accurately describe how they think and feel. The next page shows a simple picture scale for use with young children, Figure 4.1.

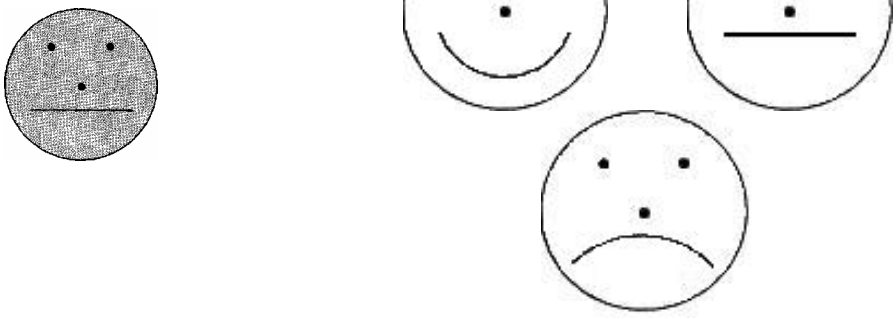


Figure 4.1: A simple picture scale for use with young children

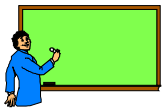
Some questionnaires designed for children use other methods to collect information. Since young children have difficulty in assigning numbers to values, one logical alternative is to use pictures. For example, the interviewer might read the question, "How do you feel about Saturday morning cartoons on television?" and present the faces to elicit a response from a 5-year-old. Zillmann and Bryant (1975) present a similar approach in their "Yucky" scale.

Questionnaire Design

4.5 Questionnaire Design

The approach used in asking questions as well as the physical appearance (in a self-administered questionnaire) can affect the response rate. Time and effort invested in developing a good questionnaire always pay off with more usable data. The following section offers some useful suggestions.

Introduction



4.5.1 Introduction

One way to increase response rate in any type of survey is to prepare a persuasive introduction to the survey. Backstrom and Hursh-Cesar (1981) suggest six principles for writing a successful introduction to a questionnaire; namely, the introduction should be short, realistically worded, nonthreatening, serious, neutral, and pleasant, but firm.

Generally speaking, there is no need to explain the purpose or value of a survey to respondents. It is also not necessary to tell respondents how long the survey will take to complete. In a telephone survey, telling the respondents that "the survey will take only a few minutes" gives them the opportunity to say they don't have that long to talk. An introduction should be short so the respondent can begin writing answers, or the interviewer can start asking questions. An effective introduction for a telephone survey is:

> "Hello, my name is --------- with [INSERT COMPANY NAME]. We're conducting an opinion survey about radio in the Chicago area. We're not trying to sell anything, and this is not a contest or promotion. We're interested only in your opinions. For this survey, we need to talk to people who are between the ages of 25 and 49. Are you in this group? [IF 'YES,' CONTINUE. IF 'NO,' ASK FOR SOMEONE WHO IS. IF NO ONE IN AGE GROUP, TERMINATE]."

With some modifications, the same introduction is appropriate for a self-administered questionnaire. The introduction would include the second and fourth sentences and add at the end:
"Please answer the questions as completely and honestly as possible."

The goal of the introduction in telephone surveys is to start the interview as quickly as possible so the respondent does not have a chance to say "No" and hang up. This may sound overly aggressive, but it works. The goal of the introduction in self-administered questionnaires is to make it as simple as possible.

Regardless of the survey approach used, a well-constructed introduction usually generates higher response rates than a simple" Please answer the following questions...."

Instructions

4.5.2 Instructions

All instructions necessary to complete the questionnaire should be clearly stated for respondents or interviewers. **These instructions vary depending on the type of survey conducted.** *Mail surveys usually require the most specific instructions, since respondents are not able to ask questions about the survey. Respondents and interviewers should understand whether the correct response consists of circling, checking, placing in a specific order, or skipping an item.*

Procedural instructions for respondents are often highlighted using a different typeface, capital letters, or some graphic device, perhaps arrows or lines. *The following is an example from a mail survey:*
Do you have a favorite radio station that you listen to most of the time?

---- Yes ---- No

If yes, can you remember the names of any of the disc jockeys or newscasters who work for that station? WRITE THE NAMES BELOW.

Some questionnaires require respondents to rank a list of items. In this case, the instructions must clearly describe which response represents the highest value:
Please rate the following professions in order of importance to you. Place a 1 next to the profession you prefer most, a 2 next to the profession in second place, and so on up to 5.

- Doctors
- Engineers
- Policemen
- Teachers

The following suggestions should be taken into account for putting together a self-administered questionnaire:

1. *The questionnaire must be self-explanatory.*
2. *Questionnaires should be limited to closed-ended items. Checking a box or circling an answer should be the only task required.*
3. *The question forms should be few in number.*
4. *The questionnaire should be typed and laid out to ensure a clear and uncluttered product.*
5. *Instructions should be kept to a minimum. If people can be confused about what they are supposed to do, they will be.*

The second point in the above suggestions is strict. Respondents are usually able to answer open-ended questions with the same ease (or complication) as closed-ended questions.

Whether open-ended or closed-ended, all questions should be tested in a pretest to determine whether directions for answering questions are clear.

Procedural instructions for interviewers are often typed in capital letters and enclosed in parentheses, brackets, or boxes. For example, instructions for a telephone survey might look like this:

We'd like to start by asking you some things about television. First, what are your favorite TV shows?

RECORD ALL NAMES OF TV SHOWS. PROBE WITH "ARE THERE ANY MORE?" TO GET AT LEAST THREE SHOWS.1.
1._____ 3. _____
2._____ 4. _____

Screener questions, or filter questions, *which are used to eliminate unwanted respondents (or to include only respondents who have specific characteristics or answer questions in a specific manner), often require respondents or interviewers to skip one or more questions. Skips must be clearly specified.* For example:

In a typical week, do you listen to AM radio?
____ Yes
____ No [SKIP TO Q. 17]

A survey using this question might be designed to question only subjects who listen to AM radio. The screener question immediately determines if the subject falls into this group. If the respondent responds "No", the interviewer (or respondent if the survey is self-administered) skips a certain number of questions, or may terminate the survey immediately.

When interviewers are used, as is the case with telephone and one-on-one interviews, the questionnaires must have easy-to-follow instructions (including how many responses to take for open-ended questions), simple skip patterns, and enough space to record answers (if survey responses are written down on paper). Telephone questionnaires must include everything an interviewer will say, including introductions, explanations, definitions, transitions, and pronunciations. The last point is particularly important because interviewers should sound like they know the topic. For example, the rock group INXS should have a phonetic spelling in parentheses; (n *excess),* following its first appearance in the questionnaire. Otherwise, some interviewer is *sure* to say something like: "Do you think music by the group 'Inks' should be played on your favorite radio station?"

All instructions should be clear and simple. A confusing questionnaire impairs the effectiveness of the interviewer, lowers the number of

respondents who complete the test, and, in the long run, increases costs.

Question Order

4.5.3 Question Order

All surveys flow better when the initial questions are simple and easy to answer. *Researchers often include one or two "warm-up" questions about the topic under investigation so respondents become accustomed to answering questions and begin thinking about the survey topic. Preliminary questions can also serve as motivation to create interest in the questionnaire. Demographic data, personal questions, and other sensitive items should be placed at the end of the questionnaire to allow the interviewer to establish a rapport with each respondent, or for any suspicions to be alleviated in a self-administered questionnaire.* Although some respondents may still refuse to answer personal items, or may hang up the telephone, at least the main body of data is already collected. Age and sex information are usually included in the first part of a questionnaire, so at least some respondent identification is possible.

The questionnaire should be organized in a logical sequence, proceeding from the general to the specific. Questions on similar topics should be grouped together, and the transitions between different question sections should be clear and logical.

Poor question order may bias a respondent's answers. For example, suppose that after several questions about the presence of violence in society, the respondent is asked to rank the major problems facing the country today from the following list:

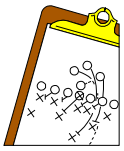
- War
- Communism
- Violence on TV
- High prices
- Corrupt government
- Pollution

It is possible that violence on television might receive a higher ranking than it would if the ranking question had been asked before the series of questions on violence. Or, to take another example, suppose a public relations researcher is attempting to discover the public's attitudes toward a large oil company. If the questionnaire beginning with attitudinal questions concerning oil spills and inflated profits asked respondents to rate certain oil companies, it is likely that the ratings of all the companies would be lower, due to general impressions created by the earlier questions.

There is no easy solution for the problem of question "contamination." Obviously, some questions have to be asked before others. *Perhaps the best approach for researchers is to be sensitive to the problem and test for it in a pretest.* If they think that question order A, B, C may

have biasing effects, they should test another version using the order C, B, A. Completely neutral positioning is not always possible, however, and when bias may enter because of how responses are ordered, the list of items should be rotated. The word [ROTATE] after a question indicates that the interviewer must alter the order of responses for each respondent. Different versions of question order can be printed for self-administered questionnaires.

Layout



4.5.4 Layout

The physical design of the questionnaire is another important factor in survey research. **A badly typed, poorly reproduced questionnaire is not likely to attract many responses in a mail survey.** Nor does a cramped questionnaire with 40 questions to a page help to instill respondents with a positive attitude. Response categories should be adequately spaced and presented in a nonconfusing manner. For example, the following format might lead to problems:

There are too many commercials on television.
Do you strongly agree _____ Agree _____ Have no opinion _____
Disagree _____ Strongly disagree.

A more effective and less confusing method is to provide a vertical ordering of the response choices:

There are too many commercials on television.

- Strongly disagree
- Agree
- No opinion
- Disagree
- Strongly disagree

Some researchers recommend avoiding blanks altogether because respondents and interviewers tend to make large check marks or X's that cover more than one blank, making interpretation difficult. If blanks are perceived as a problem, boxes to check or numbers to circle are satisfactory. In any case, the response form should be consistent throughout the questionnaire. **Format changes generally create confusion for both respondents and interviewers.** *Finally, each question must have enough space for answers.* This is especially true for open-ended questions. Nothing is more discouraging to respondents and interviewers than to be confronted with a presentation like the following.

Why do you go to the movies? _____
Who are your favorite movie stars? _____
What are your favorite television shows? _____
If a research budget does not allow for enough paper, subjects should be asked to add further comments on the back of the survey.

Questionnaire Length

4.5.5 Questionnaire Length

Questionnaire length is an important concern in any type of survey. One basic reason is that questionnaire length is directly related to completion rate. Long questionnaires cause fatigue and respondent mortality, and low completion rates. Shorter questionnaires guarantee higher completion rates.

There are no strict guidelines to help in deciding how long a questionnaire should be. The length depends on a variety of things. Some of these include:

1. *Purpose of the survey*
2. *Type of problems or questions investigated*
3. *Age of respondents involved in the survey*
4. *Type and complexity of questions in the questionnaire*
5. *Location in the country where the study is conducted*
6. *Specific setting of the testing situation*
7. *Time of year*
8. *Time of day*
9. *Type of interviewer used (professional or amateur)*

In most cases, questionnaire length is determined by trial and error. A survey developed with significantly less than 100% respondent completion is too long. The authors' experience during the past 10 years has shown the following time limits as *maximum:*

Self-administered in a group Situation supervised by a Researcher:	60 min.
One-on-one interviews:	60 min.
Telephone:	25 min.
Self-administered mail survey:	20 min.
Shopping center intercept:	15 min.

Telephone interviewing can be a difficult approach to use because there is a talent required in keeping people on the phone to answer questions. Professional interviewers can usually hold respondents' attention for about 25 minutes. There is a severe drop-off in incidence (respondents hang up) when an interview lasts more than 25 minutes.

Pretesting

4.6 Pretesting

Without a doubt, the best way to discover whether a research instrument is adequately designed is to pretest it. That is, *conduct a mini-study with a small sample to determine if the study approach is correct and for refining questions. Areas of misunderstanding or confusion can be easily corrected without wasting time or money.*

There are several ways to pretest a questionnaire. When an acceptable draft of the questionnaire is completed, a focus group

(**Chapter 7**) can be used to discuss the questionnaire with potential respondents. However, this is usually too expensive. The best pretest in telephone surveys is to have interviewers call 10-20 people and do a run-through. Any problems emerge quickly. Self-administered questionnaires should be pretested with the type of respondent who will participate in the actual study. Once again, any problems should be noticed immediately.

In any type of pretesting situation, it is appropriate to discuss the project with respondents after the questionnaire is completed. They can be asked if they understood the questions, whether questions were simple to answer, and so on. Respondents are always willing to help researchers.

Gathering Survey Data

4.7 Gathering Survey Data

Once a questionnaire is developed and one or more pretests or pilot studies have been conducted, the next step is to gather data from an appropriate group of respondents. **There are four basic methods for doing this: the mail survey, the telephone survey, the personal interview, and group administration.** Researchers can also use variations and combinations of these four methods, such as disk-by-mail surveys and mall interviews. Each procedure has definite advantages and disadvantages that must be considered before a choice is made. The remainder of this chapter highlights the characteristics of each method.

Mail Surveys

4.7.1 Mail Surveys

Mail surveys involve mailing self-administrable questionnaires to a sample of individuals. Stamped reply envelopes are enclosed to encourage respondents to mail completed questionnaires back to the researcher. Mail surveys are popular because they can secure a great deal of data with a minimum expenditure of time and money. At the outset, however, researchers should be aware that respondents are busy people with many demands on their time. Consequently, many people do not share the researcher's enthusiasm for questionnaires and often simply throw them away.

The general stages of a mail survey are:

The general stages of a mail survey are discussed below. Even though the steps are listed in numerical sequence, many of these tasks are often accomplished in a different order or even simultaneously.

1. Select a sample.

1. Select a sample: Sampling is generally done from a prepared frame (Chapter 4) that contains the names and addresses of potential respondents. *The most common sampling frame used is the mailing list, a compilation of names and addresses in narrowly defined groupings that commercial firms sometimes prepare* (see

accompanying boxed material).

2. Construct the questionnaire.

2. Construct the questionnaire: As discussed earlier, *mail survey questionnaires must be concise and specific, since no interviewer is present to alleviate misunderstandings, answer questions, or give directions.*

3. Write a cover letter.

3. Write a cover letter: *A brief note explaining the purpose and importance of the questionnaire usually increases response rates.*

4. Assemble the package.

4. Assemble the package: *The questionnaires, cover letters, and return envelopes are stuffed into mailing envelopes.* Researchers sometimes choose to use bulk mail with first-class return envelopes. *An alternate method is to send questionnaires first class and use business reply envelopes for responses.* This method allows researchers to pay postage only for the questionnaires actually returned. Postal options always depend on the research budget.

5. Mail the surveys.

5. Mail the surveys.

6. Closely monitor the return rates.

6. Closely monitor the return rates.

7. Send follow-up mailings.

7. Send follow-up mailings: The first follow-up should be sent 2 weeks after the initial mailing, and a second (if necessary) 2 weeks after the first. *The follow-up letters can be sent to the entire sample or only the subjects who failed to answer.*

8. Tabulate and analyze the data.

8. Tabulate and analyze the data.

Advantages

A) Advantages

Mail surveys cover a wide geographic area for a rather reasonable cost. They are often the only way to gather information from people who live in hard-to-reach areas of the country (or in other countries). Mail surveys also allow for selective sampling through the use of specialized mailing lists. In addition to those mentioned, *lists are available that include only people with annual incomes exceeding $50,000,* or consumers who have bought a car within the past year, or subscribers to a particular magazine, or residents of a specific zip code area. If researchers need to collect information from a highly specialized audience, the mail technique can be quite attractive.

Another advantage of the mail survey is that it provides anonymity, so that subjects are more likely to answer sensitive questions candidly. Questionnaires can be completed at home or in the office, affording subjects a certain sense of privacy. People can answer questions at their own pace and have an opportunity to look up facts or check past information. Mail surveys also eliminate interviewer bias, since there is no personal contact.

Probably the biggest advantage of this method, however, is its relatively low cost. Mail surveys do not require a large staff of trained workers. The only costs are for printing, mailing lists, envelopes, and postage. If the cost per completed questionnaire were to be computed, it is likely that the mail survey would prove to be the most inexpensive of all the survey methods. At a minimum, it can be said that researchers who are willing to spend time, energy, and money in a mail survey can usually ensure an above-average return rate.

Disadvantages

B) Disadvantages

First, mail questionnaires must be self-explanatory. There is no interviewer present to answer questions or to clear up misunderstandings. *Mail surveys are also the slowest form of data collection.* Returns start to trickle in around a week or so after the initial mailing and continue to arrive for several weeks thereafter. In fact, it may be months before some responses are returned. Many researchers simply set a cutoff date, after which returns are not included in the analysis.

Another problem with mail surveys is that researchers never know exactly who answers the questions. A survey sent to corporate executives, for example, may be completed by assistants. Furthermore, *replies are often received only from people who are interested in the survey, and this injects bias into the results.* Most researchers agree, however, that the biggest disadvantage of the mail survey is the typically low return rate. A typical survey (depending on the area and type of survey) will achieve a response rate of 20% - 40%. This low return casts doubt on the reliability of the findings.

Increasing Response Rates

C) Increasing Response Rates

A number of procedures for improving return rates have been investigated by survey researchers. There are no hard and fast guarantees, however, in a *meta-analysis* (the findings of several studies are treated as independent observations and combined to calculate an overall or average effect) of numerous studies concerning mail surveys. Previous studies have shown that on the average, response rates can be increased in a variety of ways. In descending order of importance. *It was also found that following procedures to increase mail survey response rates: university sponsorship, stamped return postage as opposed to business reply, written prenotification of the survey sent to the respondent, postcard follow-up, first-class outgoing postage, questionnaire color (green paper as opposed to white), notification of cutoff date, and stamped outgoing postage as compared to metered stamping. Offering monetary incentives also increases response rates, but the authors did not pursue this area since only a few studies offering incentives were available to them.*

The authors further suggest that additional research is required to determine which combinations of the procedures, if any, can have an interactive effect to increase response rates even more than any

single element does alone.

Telephone Surveys

4.7.2 Telephone Surveys

Telephone surveys and personal interviews must employ trained members of a research team to ask questions orally and record the responses. The respondents generally do not get a chance to see the actual questionnaire. Since telephone and personal interviewing techniques have certain similarities, much of what follows applies to personal interviews as well.

Telephone surveys seem to fill a middle ground between mail surveys and personal interviews. *They offer more control and higher response rates than most mail surveys but are limited in the types of questions that can be used. They are generally more expensive than mail surveys but less expensive than face-to-face interviews.* Because of these factors, telephone surveys seem to represent a compromise between the other two techniques, and this may account for their growing popularity in mass media research.

Interviewers are extremely important to both telephone and personal surveys. An interviewer ideally should function as a neutral medium through which the respondents' answers are communicated to the researcher. The interviewer's presence and manner of speaking should not influence respondents' answers in any way. Adequate training and instruction can minimize bias that the interviewer might inject into the data. For example, if he or she shows disdain or shock over an answer, it is unlikely that the respondent will continue to answer questions in a totally honest manner. Showing agreement with certain responses might prompt similar answers to other questions. *Skipping questions, carelessly asking questions, and being impatient with the respondent might also cause problems.* ***To minimize interviewer bias, the interviewers should follow the following recommendations:***

1. **Read the questions exactly as worded.** Ask them in the exact order listed. Skip questions only when the instructions on the questionnaire tell you to. There are no exceptions to this.
2. **Never suggest an answer, try to explain a question, or imply what kind of reply is wanted. Don't prompt in any way.**
3. **If a question is not understood, say, "Let me read it again," and repeat it slowly and clearly.** If it is still not understood, report a "no answer."
4. **Report answers and comments exactly as given,** writing fully. If an answer seems vague or incomplete, probe with neutral questions, such as, "Will you explain that?" or, "How do you mean that?" Sometimes just waiting a bit will tell the respondent you want more information.

5. **Act interested, alert, and appreciative of the respondent's cooperation. But never comment on his or her replies.** Never express approval, disapproval, or surprise. Even an "Oh" can cause a respondent to hesitate or refuse to answer further questions. Never talk up or down to a respondent.
6. **Follow all instructions carefully,** whether you agree with them or not.
7. **Thank each respondent.** Leave a good impression for the next interviewer.

A general procedure for conducting a telephone survey follows:

A general procedure for conducting a telephone survey follows. Again, the steps are presented in numerical order, but it is possible to address many tasks simultaneously.

1. Select a sample.

1. Select a sample. *Telephone surveys require researchers to specify clearly the geographic area to be covered and to identify the type of respondent to be interviewed in each household contacted.* Many surveys are restricted to people over 18, heads of households, and so forth. The sampling procedure used depends on the purpose of the study.

2. Construct the questionnaire.

2. Construct the questionnaire. *Phone surveys require straightforward and uncomplicated response options.* Ranking a long list of items is especially difficult over the telephone, and this task should be avoided. In addition, the length of the survey should not exceed 10 minutes for nonprofessional interviewers. Longer interviews require professionals who are capable of keeping people on the telephone.

3. Write a cover letter

3. Prepare an interviewer instruction manual. *This document should cover the basic mechanics of the survey* (what numbers to call, when to call, how to record times, and so on). *It should also specify which household member to interview and should provide general guidelines on how to ask the questions and how to record the responses.*

4. Assemble the package

4. Train the interviewers. Interviewers need to practice going through the questionnaire to become familiar with all the items, response options, and instructions. *It is best to train interviewers in a group using interview simulations that allow each person to practice asking questions. It is advisable to pretest interviewers as well as the questionnaire.*

5. Mail the surveys.

5. Collect the data. *Data collection is most efficient when conducted from one central location* (assuming enough telephone lines are available). Problems that develop are easier to remedy, and important questions raised by one interviewer can easily be communicated to the rest of the group. A central location also makes it easier for researchers to check (validate) the interviewers' work. The completion rate should also be monitored during this stage.

6. Closely monitor the return rates.

6. Make necessary callbacks. Additional calls (usually no more than two) should be made to respondents whose lines were busy or who did not answer during the first session. *Callbacks done on a different day or night tend to have a greater chance of success in reaching someone willing to be interviewed.*

When the first call produces a busy signal, the rule is to wait one-half hour before calling again. If the first call produced a "no answer," wait 2 to 3 hours before calling again, assuming it will still be a reasonable hour to call. If evening calls produce no answer, call during the following day.
In addition, interviewers should keep track of the disposition or status of their sample numbers. **Figure 4.2 contains a sample disposition sheet.**

Sample Telephone Interview Disposition Sheet

Phone number _____
Call #1 ___ #2 ___ #3 ___ #4 ___ #5 ___
Date ___ Date ___ Date ___ Date ___ Date ___
Time ___ Time ___ Time ___ Time ___ Time ___
Code
1 Completed interview
2 Answering machine
3 Busy
4 No answer
5 Refusal
6 Appointment to call again
(when _____)
7 Nonworking number (out of order, disconnected, nonexistent)
8 Nonresidential number
9 Reached but respondent not available (out of town, hospital, etc.)
10 Reached but not interviewed (ineligible household, speech or physical problem, age disqualification)

Figure 4.2: Sample disposition sheet

7. Send follow-up mailings

7. Verify the results. *When all questionnaires have been completed, a small sub sample of each interviewer's respondents should be called again to check that the information they provided was accurately recorded.* Respondents should be told during the initial survey that they may receive an additional call at a later date. This tends to eliminate any confusion when subjects receive a second call. A typical procedure is to ask the subject's first name in the interview so that it can be used later. The interviewer should ask, "Was James called a few days ago and asked questions about television viewing?" The verification can begin from there, and need consist of only two or three of the original questions (preferably open-ended and sensitive questions, since interviewers are most likely to omit these).

8. Tabulate and analyze the data.

8. Tabulate the data. Along with the normal data analysis, telephone researchers generally compute a response rate: how many completed interviews, how many refusals, how many no-answers, and how many disconnects.

Advantages

A) Advantages

The cost of telephone surveys tends to be reasonable. The sampling involves minimal expense, and there are no elaborate transportation costs. *Callbacks are simple and economical.* Wide Area Telephone Service (W\TS) enables researchers to conduct telephone surveys on a nationwide basis from any location.

Compared to mail surveys, telephone surveys can include more detailed questions, and, as stated earlier, interviewers can clarify misunderstandings that might arise during the administration of the questionnaire.

The nonresponse rate of a telephone survey is generally low, especially when multiple callbacks are employed. In addition*, phone surveys are much faster than mail.* A large staff of interviewers can collect the data from the designated sample in a relatively short time.

In summary, phone surveys tend to be fast, easy, and relatively inexpensive.

Disadvantages

B) Disadvantages

First of all, researchers must recognize that much of what is called survey "research" by telephone is not research at all, but an attempt to sell people something. Unfortunately, many companies disguise their sales pitch as a "survey," and *this has made respondents suspicious and even prompts some to terminate an interview before it has gotten started.* Additionally, *visual questions are prohibited.* A researcher cannot, for example, hold up a picture of a product and ask if the respondent remembers seeing it advertised. *A potentially severe problem is that not everyone in a community is listed in the telephone directory, the most often used sampling frame.* Not everyone has a phone, and many people have unlisted phone numbers; also, some numbers are listed incorrectly, and others are too new to be listed. These problems would not be serious if the people with no phones or unlisted numbers were just like those listed in the phone book. Unfortunately, *researchers generally have no way of checking for such similarities or differences, so it is possible that a sample obtained from a telephone directory may be significantly different from the population.*

Personal Interviews

4.7.3 Personal Interviews

Personal interviews usually involve inviting a respondent to a field service location or research office (called a one-on-one interview). Sometimes interviews are conducted at a person's place of work or at

home. **There are two basic types of interviews, structured and unstructured.** *In a **structured interview**, standardized questions are asked in a predetermined order; relatively little freedom is given to interviewers. In an unstructured interview, broad questions are asked, which allows interviewers freedom in determining what further questions to ask to obtain the required information. Structured interviews are easy to tabulate and analyze but do not achieve the depth or expanse of unstructured interviews. Conversely, the **unstructured type** elicits more detail but takes a great deal of time to score and analyze.*

The steps in constructing a personal interview:

The steps in constructing a personal interview survey are similar to those for a telephone survey. **The list below discusses instances in which the personal interview differs substantially from the telephone method.**

1. Select a sample

1. Select a sample. Drawing a sample for a personal interview is essentially the same as sample selection in any other research method. *In one-on-one interviews, respondents are selected on the basis of a predetermined set of screening requirements. In door-to-door interviews, a multistage sample is used to first select a general area, then a block or neighborhood, and finally randomly select a household from which a person will be chosen.*

2. Construct the questionnaire

2. Construct the questionnaire. *Personal interviews are flexible:* detailed questions are easy to ask, and the time taken to complete the survey can be greatly extended (many personal interviews last 30-60 minutes). Researchers can also make use of visual exhibits, lists, and photographs to ask questions, and respondents can be asked to sort photos or materials into categories, or to point to their answers on printed cards. *Respondents can have privacy and anonymity by marking ballots, which can then be slipped into envelopes and sealed.*

3. Prepare an interviewer instruction

3. Prepare an interviewer instruction guide. The detail of an instruction guide depends on the type of interview. *One-on-one interviewer guides are not very detailed* because there is only one location, respondents are prerecruited by a field service, and times are arranged. *Door-to-door interviewer guides contain information about the household to select, the respondent to select, and what to do in the event the target respondent is not at home. Interviewer guides often contain information about how to conduct the interview, how to dress, how to record data, and how questions should be asked.*

4. Train the interviewers

4. Train the interviewers. *Training is important because the questionnaires are longer and more detailed. Interviewers should receive instruction on establishing a rapport with subjects, administrative details* (when to conduct the interviews, how long each will take, and how much the interviewers will be paid), and follow-up

questions. *Several practice sessions are necessary to ensure that the goal of the project is met and that interviewers follow the established guidelines.*

5. Collect the data

5. Collect the data. *Personal interviews are both labor and cost intensive.* These problems are why most researchers prefer to use telephone or mail surveys. A personal interview project can take several days to several weeks to complete because turnaround is slow. One interviewer can only complete a handful of surveys each day. In addition, costs for salaries and expenses escalate quickly. It is not uncommon for some research companies to charge as much as $1,000 per respondent in a one-on-one situation.

Data gathering is accomplished by either writing down answers or by audio taping or videotaping the respondents' answers. Both methods are slow and detailed transcriptions and editing are often necessary.

6. Make necessary callbacks

6. Make necessary callbacks. *Each callback requires an interviewer to return to a household originally selected or the location used for the original interview. Additional salary, expenses, and time are required.*

7. Verify the results

7. Verify the results. As with telephone surveys, a sub sample of each interviewer's completed questionnaires is selected for verification. *Respondents can be called on the phone or re-interviewed in person.*

8. Tabulate the data.

8. Tabulate the data. Data tabulation procedures for personal interviews are essentially the same as with any other research method. *A codebook must be designed, questionnaires are coded, and data input into a computer.*

Advantages

A) Advantages

Many of the advantages of the personal interview technique have already been mentioned. *It is the most flexible means of obtaining information, since the face-to-face situation lends itself easily to questioning in greater depth and detail.* Furthermore*, some information can be observed by the interviewer during the interview without adding to the length of the questionnaire.* Additionally, *the interviewers can develop a rapport with the respondents and may be able to get replies to sensitive questions that would remain unanswered in a mail or phone survey.*

The identity of the respondent is known or can be controlled in the personal interview survey. Whereas in a mail survey it is possible that all members of a family might confer on an answer, in a face-to-face interview, this can usually be avoided. Finally, *once an interview has begun, it is harder for respondents to terminate the interview before all the questions have been asked. In a phone survey, all the subject needs to do is to hang up.*

Disadvantages

B) Disadvantages

As mentioned, time and costs are the major drawbacks to the personal interview technique. Another major disadvantage is the problem of interviewer bias. The physical appearance, age, race, sex, dress, nonverbal behavior, and/or comments of the interviewer may prompt respondents to answer questions untruthfully. Moreover, *the organization necessary for recruiting, training, and administering a field staff of interviewers is much greater than that required for other data collection procedures.* If large numbers of interviewers are needed, it is usually necessary to employ field supervisors to coordinate their work, which in turn will make the survey even more expensive. Finally, if personal interviews are conducted during the day, most of the respondents will not be employed outside the home. If it is desirable to interview respondents with jobs outside the home, it is necessary to schedule interviews on the weekends or during the evening. *A hybrid of personal interviewing is intensive or in-depth interviewing.*

Mail Interviews

4.7.4 Mail Interviews

Although mail interviews are essentially a form of personal interview as just discussed, their recent popularity and widespread use warrant individual consideration.

During the late 1980s, mail intercepts became one of the most popular research approaches among marketing and consumer researchers. Studies found that of all people who participated in a survey in 1984, 33% were mail intercepts.

Although mall intercepts use convenience samples and sampling error cannot be determined, the method has become the standard for many researchers. It is rare to go into a shopping mall without seeing a man or woman with a clipboard trying to interview a shopper. The method has become commonplace, and some shoppers resent the intrusion. In fact, it is common for shoppers to take paths to avoid the interviewers they can so easily detect.

By the way, purposely avoiding an interviewer isn't necessary. There is another way out if you don't wish to take the time for the interview. Remember from previous discussions that all research requires specific types of people — **a screener is developed to eliminate respondents who do not qualify.** Nearly every questionnaire has security screening questions to eliminate respondents who work for a company in any way related to the company sponsoring the study, or anyone who works for a marketing research firm. The last part of the security screener is your way out. When the interviewer stops you, simply say, "I work for a marketing research company." Your chances of being recruited are very slim. We're not advocating the practice of lying here, just offering a suggestion. Mall interviewers are generally

nice people. It's easier for them to hear the security bail-out than a caustic remark about their presence in the mall.

The procedures involved in conducting mail intercepts are the same as those for personal interviews. The only major difference is that it is necessary to locate the field service that conducts research in the particular mall of interest. Field services pay license fees to mall owners to allow them to conduct research on the premises. Not just any field service can conduct research in any mall.

Advantages

A) Advantages

Mail intercepts are a quick and inexpensive way to collect personal interview data.

Disadvantages

B) Disadvantages

Some of the major problems are: convenience sampling restricts the generalizability of the results, the length of interviews must be short; and there is no control over data collection (researchers are at the mercy of the field service to conduct a proper job).

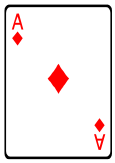
Disk-By-Mail Surveys (DBM)

Disk-By-Mail Surveys

During the late 1980s, **a high-tech form of mail surveys has been used that appears to offer promise in the future. The procedure is called disk-by-mail surveys, or DBM.** The name of the survey approach essentially explains the procedure: *respondents are sent computer disks that contain a self-administered questionnaire, and are asked to complete it by using a personal computer. This method obviously involves several new areas to consider when conducting a research project.*

DBM surveys are essentially the same as a typical self-administered mail survey. The normal steps involved in problem definition, questionnaire design, and pretesting are used. ***However, there are several unique considerations researchers must address when using DBM.***

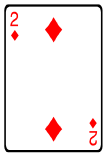
Type of Study



Type of Study

Most DBM surveys are conducted with professionals or other business related samples. The reason is simple. Only about 20% of American households have personal computers. Sample selection would be time-consuming and costly. However, computer ownership will certainly increase in the future, and in-home DBM surveys may become commonplace. For the time being, DBM surveys are conducted with professionals who generally have access to personal computers in their workplace.

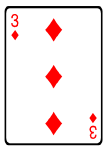
Sample Selection



Sample Selection

Locating qualified respondents for DBM surveys is the same as for any other research project, except that in addition to the other screener questions, *there must be one about the availability of a personal computer.*

Computer Hardware



Computer Hardware

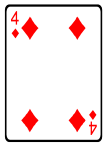
A typical self-administered mail survey requires that the respondent only have a writing instrument. DBM surveys complicate the process in several ways. First of all, computers can use one of several different operating systems, or languages, which run the computer (Chapter 17). Fortunately, the systems used by IBM and Apple are the most widely used. The problems with the two operating systems can be solved by preparing two different DBM disks, or by asking one of the groups of users to try and locate the other type of computer to complete the survey.

A second problem with the DBM method is whether to use a color or monochrome display to present the questionnaire. Not all color monitors are equal, and the color appearance may be drastically different from one monitor to another. *A monochrome display is best to avoid problems.*

The type of disk drive is a third problem. The screener must include questions about the type of drive (for example, 5.25 or 3.5) so respondents receive the correct disk format.

Another problem, and not necessarily the last, relates to problems respondents may have with the computer disks. Disks are fragile and may be damaged in the disk duplication process, in shipment, or by the respondent. Replacement disks may have to be sent to some respondents.

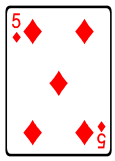
Support



Support

Because computer problems may occur, or respondents may be unable to complete the survey, most DBM surveys offer respondents a toll free number to call for assistance. This adds further costs to the project.

Reliability and Validity

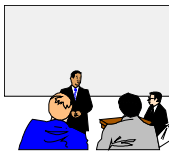


Reliability and Validity

Significant questions are raised about these two areas in relation to DBM surveys. Who actually completes the surveys? Are responses more or less accurate than those provided to interviewers or in typical mail interviews? Does the novelty of the approach have any effect on respondents?

As mentioned earlier, DBM surveys are a totally new approach in research. Not much is known about the procedure, but in all likelihood, DBM surveys will be used more frequently in the future.

Group Administration



4.7.5 Group Administration

Group administration combines the features of mail surveys and personal interviews. The group-administered survey takes place when a group of respondents is gathered together (pre-recruited by a field service) and given individual copies of a questionnaire, or asked

to participate in a group interview (a large focus group). *The session can take place in a natural setting, but is usually held at a field service location or a hotel ballroom.* For example, respondents may be recruited to complete questionnaires about radio or television stations, students in a classroom may complete questionnaires about their newspaper reading habits, or an audience may be asked to answer questions after viewing a sneak preview of a new film.

The interviewer in charge of the session may or may not read questions to respondents. Reading questions aloud may help respondents who have reading problems, but this is not always necessary (it is possible to screen respondents for reading and/or language skills). *The best approach is to have several interviewers present in the room so individual problems can be resolved without disturbing the other respondents.*

Some group-administered sessions include audio and/or video materials for respondents to analyze. The session allows respondents to proceed at their own pace, and in most cases, interviewers allow respondents to ask questions, although this is not a requirement.

Advantages

A) Advantages

The group administration technique has certain advantages. In the first place, *a group-administered questionnaire can be longer than the typical questionnaire used in a mail survey.* Since the respondents are usually assembled for the express purpose of completing the questionnaire, the response rates are almost always quite high. The opportunity for researchers to answer questions and handle problems that might arise generally means that fewer items are left blank or answered incorrectly.

Disadvantages

B) Disadvantages

On the negative side, *if a group-administered survey leads to the perception that the study is sanctioned by some authority, suspicion or uneasiness on the part of respondents might result.* For example, if a group of teachers is brought together to fill out a questionnaire, some might think that the survey has the approval of the local school administration and that the results will be made available to their superiors. Also, *the group environment makes it possible for interaction among the respondents; this has the potential for making the situation more difficult for the researcher to control.* In addition, *not all surveys can use samples that can be tested together in a group. Surveys often require responses from a wide variety of people, and mixing respondents together may bias the results.*

Finally, *group administration can be expensive*. Costs usually include recruiting fees, coop payments, hotel rental, refreshments, and salaries for interviewers.

Achieving a Reasonable Response Rate

4.7.6 Achieving a Reasonable Response Rate

No matter what type of survey is conducted, it is virtually impossible to get a 100% response rate. Researchers have more control over the situation in some types of surveys (such as the personal interview) and less in others (such as the mail survey). But no matter what the situation, not all respondents will be available for interviews and not all will cooperate. Consequently, the researcher must try to achieve the highest response rate possible under the circumstances.

What constitutes an acceptable response rate? Obviously, *the higher the response rate the better, since as more respondents are sampled, it becomes less likely that response bias is present.* **But is there a minimum rate that should be achieved?** Not everyone would agree on an answer to this question, but there are some helpful data available. Several studies have calculated the average response rates for surveys of various kinds. A comparison with these figures can at least tell a researcher if a given response rate is above or below the norm. For example, Dillman (1978) noted that response rates for face-to-face interviews have dropped sharply in recent years. In the 1960s, the average rate was 80%-85%. More recently, the completion rates of general population samples interviewed by the face-to-face technique is about 60%-65%. Yu and Cooper (1983) studied the completion rates reported in 93 social science journal articles from 1965 to 1981. They found the completion rate for personal interviews to be 82% and for telephone surveys about 72%. Mail surveys had an average completion rate of about 47%. (Note that many of the personal interviews included in this study were done in the 1960s and early 1970s. This should be kept in mind when comparing these figures to Dillman's data mentioned above.)

Regardless of how good the response rate, the researcher is responsible for examining any possible biases in response patterns. Were females more likely to respond than males? Older respondents more likely than younger ones? Whites more likely than nonwhites? A significant lack of response from a particular group might weaken the strength of any inferences from the data to the population under study. To be on the safe side, the researcher should attempt to gather information from other sources about the people who did not respond; by comparing such additional data with those from respondents, it should be possible to determine whether under representation introduced any bias into the results.

Using common sense will help increase the response rate. In phone surveys, respondents should be called when they are likely to be at home and receptive to interviewing. Don't call when people are likely to be eating or asleep. In a one-on-one situation, the interviewer should be appropriately attired. In addition, the researcher should spend time tracking down some of the nonrespondents and asking them why they refused to be interviewed or did not fill out the

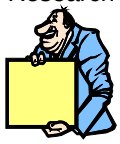
questionnaire. Responses such as "The interviewer was insensitive and pushy," "The questionnaire was delivered with postage due," and "The survey sounded like a ploy to sell something" can be quite illuminating.

Along with common sense, certain elements of the research design can have a significant impact on response rates. **Yu and Cooper (1983) in their survey of 93 published studies discovered the following.**

1. *Monetary incentives increased the response,* with larger incentives being the most effective. Nonmonetary incentives (for example, ballpoint pens) were also helpful.
2. *Preliminary notification, personalization of the questionnaire, follow-up letter, and assertive "foot-in-the-door" personal interview techniques all significantly increased the response rate.*
3. *Things that were not significantly related to an increased response rate were a cover letter, assurance of anonymity, and stating a deadline.*
4. *Stressing the social utility of the study and appealing to the respondent to help out the researcher did not affect response rates.*

4.8 General Problems in Survey Research

General Problems in Survey Research



Although surveys are valuable tools in mass media research, there are problems present in any survey. **Experience in survey research confirms the following points:**

1. *Subjects or respondents are often unable to recall information about themselves or their activities.* This inability may be caused by memory failure, nervousness related to being involved in a research study, confusion about the questions asked, or some other intervening factor. Questions that are glaringly simple to researchers may create severe problems for respondents.
   For example, during focus group sessions, radio station managers often ask the moderator to ask respondents which radio stations they have set on their vehicle's radio. The managers are surprised to discover how many people not only do not know which stations are programmed on their radio buttons, but how many do not know how many buttons are on their radio. Radio general managers and program directors worry about the finite aspects of their radio station, and many average listeners don't know if they have five or six (or any) buttons on their radio.
2. *Due to a respondent's feelings of inadequacy or lack of knowledge about a particular topic, they often provide "prestigious" answers rather than admit they don't know something.* ***This is called prestige bias****.* For example, when respondents claim to watch public TV and listen to public radio,

when, in fact, they don't.

3. *Subjects may purposely deceive researchers by giving incorrect answers to questions.* Almost nothing can be done about respondents who knowingly lie. A large sample may discount this type of response. However, there is no acceptable and valid method to determine whether a respondent's answers are truthful; the answers must be accepted as they are given.
4. *Respondents often give elaborate answers to simple questions because they try to "figure out" the purpose of a study, and what the researcher is doing.* People are naturally curious, but become more so when they are the focus of a scientific research project.
5. *Surveys are often complicated by the inability of respondents to explain their true feelings, perceptions, and beliefs — not because they don't have any, but because they can't put them into words.* The question "Why do you like to watch soap operas?" may be particularly difficult for some people. They may watch them every day, but respond only by saying "Because I like them." Probing respondents for further information may help, but not in every case.

Survey research can be an exciting process. It's fun to find out why people think certain ways, or what they do in certain situations. But researchers must continually be aware of obstacles that may hinder data collection, and deal with these problems. The United States is the most surveyed country in the world, and many citizens now refuse to take part in any type of research project. Researchers must convince respondents and subjects that their help is important in decision making and solving problems.

The face of survey research is continually changing. One-on-one and door-to-door interviews are now very difficult to accomplish. This means there is a greater emphasis on mail surveys, mall intercepts, and electronic data gathering procedures. In telephone surveys, for example, computer-assisted telephone interviewing (CATI) is now common.

CATI uses video display terminals operated by interviewers to present questions and accept respondent answers, thus eliminating the need for the traditional pencil-and-paper questionnaires. The computer displays the proper questions in the proper order, eliminating the possibility of the interviewer making an error by asking the wrong questions or skipping the right ones. The respondent's answers are entered by the interviewer through the keyboard, making data coding much easier. Groves and Mathiow-etz (1984) found that there was little difference in results from using CATI and non-CATI techniques. The response rates, reactions of the interviewers and respondents, and quality of data were virtually equivalent. CATI interviews tended to take slightly more time, but this was balanced by the presence of fewer interviewer errors due to skipping questions. As new software is developed in this area, it

seems likely that a greater proportion of surveys will use the CATI technique.

Other areas of change include computer-generated, voice-synthesized surveys where respondents answer by pushing Touch-Tone telephone buttons; 800 telephone numbers for recruited respondents to call to answer questions asked by an interviewer or computer; and various types of touch sensitive TV screens that present questionnaires to respondents. Survey research is changing very quickly.

Chapter 5: Qualitative Research Methods

This chapter discusses four alternatives to laboratory and survey research: field observations, focus groups, intensive interviews, and case studies. *Field observation* involves the study of a phenomenon in natural settings. The researcher may be a detached observer or a participant in the process under study. The main advantage of this technique is its flexibility; it can be used to develop hypotheses, to gather preliminary data, or to study groups that would otherwise be inaccessible. Its biggest disadvantage is the difficulty in achieving external validity.

The *focus group,* or group interviewing, is used to gather preliminary information for a research study or to gather qualitative data concerning a research question. *The advantages of the focus group method are the ease of data collection and the depth of information that can be gathered. Among the disadvantages: the quality of information gathered during focus groups depends heavily on the group moderators' skill; focus groups can only complement other research because they provide qualitative not quantitative data.*

Intensive interviewing is used to gather extremely detailed information from a small sample of respondents. The wealth of data that can be gathered with this method is its primary advantage. Because intensive interviewing is usually done with small, nonrandom samples, however, generalizability is sometimes a disadvantage. Interviewer bias can also be a disadvantage.

The case study method draws from as many data sources as possible to investigate an event. Case studies are particularly helpful when a researcher desires to explain or understand some phenomenon. Some problems with case studies are that they can lack scientific rigor, they can be time-consuming to conduct, and the data they provide can be difficult to generalize from and to summarize.

The quantitative approaches discussed in the preceding chapter are not suitable for all research problems. There may be certain situations in which a different technique is appropriate. This chapter outlines the major differences between the two methods and examines the most frequently used techniques of qualitative research.

Aims and Philosophy

5.1 Aims and Philosophy

Qualitative research differs from quantitative research along three main dimensions. First, the two methods have a different philosophy of reality. *For a quantitative researcher, reality is objective; it exists apart from the researcher and is capable of being seen by all. In other words, it's out there. For the qualitative researcher, there is no one single reality.* Each observer creates reality as part of the research process; it is subjective and exists only in reference to the observer. Further, the quantitative researcher believes that reality can be divided into component parts, and he or she gains knowledge of the whole by looking at these parts. On the other hand, the qualitative researcher examines the entire process believing that reality is holistic and cannot be subdivided.

Second, the two methods have different views of the individual. *The quantitative researcher believes all human beings are basically similar and looks for general categories to summarize their behaviors or feelings. The qualitative investigator believes that human beings are all fundamentally different and cannot be pigeonholed*.

Third, quantitative researchers aim to generate general laws of behavior and explain many things across many settings. In contrast, qualitative scholars attempt to produce a unique explanation about a given situation or individual. Whereas quantitative researchers strive for breadth, qualitative researchers strive for depth. The practical differences between these approaches are perhaps most apparent in the research process. **The following five major research areas describe significant differences between quantitative and qualitative research.**

The following five major research areas:

1. Role of the researcher

1. Role of the researcher. *The quantitative researcher strives for objectivity and is separated from the data. The qualitative researcher is an integral part of the data; in fact, without the active participation of the researcher, no data exist.*

2. Design

2. Design. *In quantitative methods, the design of the study is determined before it begins. In qualitative research, the design evolves during the research; it can be adjusted or changed as it progresses.*

3. Setting

3. Setting. *Quantitative researchers try to control contaminating and/or confounding variables by conducting their investigations in laboratory settings. Qualitative researchers conduct their studies in the field, in natural surroundings.* They try to capture the normal flow of events, without trying to control the extraneous variables.

4. Measurement instruments

4. Measurement instruments. *In quantitative research, these exist apart from the researcher.* In fact, another party could use the instruments to collect data in the researcher's absence. *In qualitative*

research, the investigator is the instrument; no other individual could fill in for the qualitative researcher.

5. Theory building

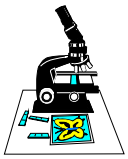
5. Theory building. *In the quantitative area, research is used to test theory and to ultimately support or reject it. In the qualitative area, theory is "data driven" and emerges as part of the research process, evolving from the data as they are collected.*

Four common qualitative techniques are discussed:

These differences will become more apparent throughout this chapter. **Four common qualitative techniques are discussed: field observations, focus groups, intensive interviews, and case studies.**

Field Observations

5.2 Field Observations



Before 1980, field observation was rarely used in scientific research. It was reported that only 2%-3% of the articles published in journalism and broadcasting journals had employed the technique. Recently, however, field observations have become more common in the research literature.

Field observation is useful for collecting data as well as for generating hypotheses and theories. Like all qualitative techniques, it is more concerned with description and explanation than it is with measurement and quantification.

Field observations are classified along two major dimensions:

(1) The degree to which the researcher participates in the behavior under observation; and

(2) The degree to which the observation is concealed.

Overt observation is represented by Quadrant 1. In this situation, the researcher is identified as such when the study begins. Those under observation are aware that they are being studied. Further, the researcher's role is only to observe, refraining from participation in the process under observation. *Quadrant 2 represents overt participation.* In this arrangement, the researcher is also known to those being observed, but unlike Quadrant 1, the researcher goes beyond the observer role and becomes a participant in the situation. *Quadrant 3 represents the situation where the researcher's role is limited to that of observer,* but those under observation are not aware they are being studied. *A study in which the investigator participates in the process under investigation, but is not identified as a researcher, is represented by Quadrant 4, see Figure 5.1.*

To illustrate the distinction between the various approaches, assume a researcher wants to observe and analyze the dynamics of writing comedy for television. The researcher could choose the covert observer technique and perhaps pretend to be doing something else

(such as fixing a typewriter) while actually observing the TV writing team at work. Alternatively, the researcher could be introduced as someone doing a study of comedy writing and allowed to watch the team in action. If the research question is best answered by active participation, the investigator might be introduced as a researcher but would still participate in the writing process. If the covert participant strategy is used, the researcher might be introduced as a new writer just joining the group (such an arrangement might be made with the head writer who would be the only person to know the true identity of the researcher).

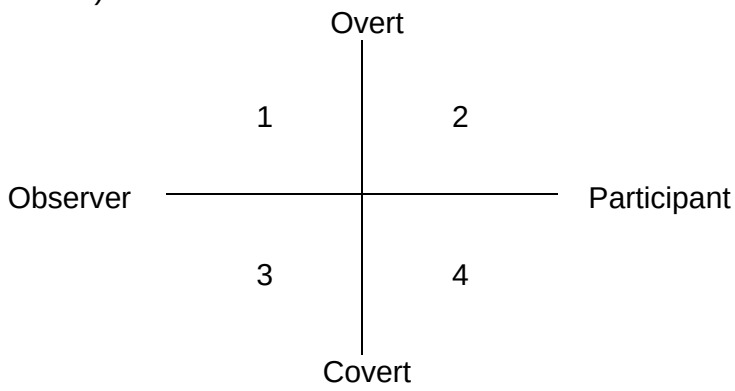


Figure 5.1: Dimensions of field observation

The choice of technique depends upon the research problem and the degree of cooperation available from the group or individual being observed, as well as ethical considerations. Covert participation may affect subjects' behavior and also raises the ethical question of deception. On the other hand, the information gathered may be more valid if subjects are unaware of being scrutinized.

Advantages of Field Observations

5.2.1 Advantages of Field Observations

Field observation is not an appropriate technique for every research question, owing to the lack of control and quantification, but it does possess several unique advantages. For one thing, many mass media problems and questions cannot be studied using any other methodology. *Field observation often helps the researcher to define basic background information necessary to frame a hypothesis and to isolate independent and dependent variables.* For example, a researcher interested in how creative decisions in advertising are made could observe several decision-making sessions to see what actually transpires. *Field observations often make excellent pilot studies in that they identify important variables and provide useful preliminary information.* In addition, since the data are gathered firsthand, *observation is not dependent on the subjects' ability or willingness to report their behavior.* For example, young children may lack the reading or verbal skills necessary to respond to a questionnaire concerning their play behavior, but such data are easily gathered by the observational technique.

A field observation is not always used as a preliminary step to other approaches, however. In many cases it alone is the only appropriate approach, especially when quantification is difficult. *Field observation is particularly suitable for a study of the gate keeping process in a network television news department, because quantification of gate keeping is rather tenuous. Field observation may also provide access to groups that would otherwise be difficult to observe or examine.* For example, a questionnaire sent to a group of producers of X-rated movies is not likely to have a high return rate. An observer, however, may be able to establish enough mutual trust with such a group to persuade them to respond to rigorous questioning.
Field observation is usually inexpensive. In most cases, writing materials or a small tape recorder will suffice. Expenses increase if the problem under study requires a large number of observers, extensive travel, or special equipment (such as video recording machines).

Perhaps *the most noteworthy advantage of field observation is that the study takes place in the natural setting of the activity being observed and can, thus, provide data rich in detail and subtlety.* Many mass media situations, such as a family watching television, are complex and are constantly subjected to intervening influences. *Field observation, because of the opportunity for careful examination, allows observers to identify these otherwise unknown variables.*

Disadvantages of Field Observations

5.2.2 Disadvantages of Field Observations

On the negative side, field observation is a bad choice if the researcher is concerned with external validity. This difficulty is partly due to the potentially questionable representativeness of the observations made and partly to problems in sampling. Observing the television viewing behavior of a group of children at a day-care center can provide valuable insights into the social setting of television viewing, but it probably has little correlation to what preschoolers do in other places and under different circumstances.

Moreover, since field observation relies heavily on a researcher's perceptions and judgments as well as on preconceived notions about the material under study, *experimenter bias may unavoidably favor specific preconceptions of results, while observations to the contrary are ignored or distorted. This, primarily, is why one observer is rarely used in a field observation study. Observations need to be cross-validated by second or third observers.*

Finally, like field experiments, *field observations suffer from the problem of reactivity.* The very process of being observed may influence the behavior under study. Of course, reactivity can be a problem with other research methods, but it is most often mentioned as a criticism of field observation. Scholars provide some perspective on observer effects using data taken from an observational study of

families' TV viewing behavior They found that the presence of an observer in the house did have some impact on family members. About 20% of parents and 25% of children reported that their overall behavior was affected by the presence of an observer. The majority of those who were affected thought that they became nicer or more polite and formal because of the observer's presence. When it came to differences in the key behavior under study, 87% said that the observer's presence had no effect on their TV viewing activity. Additionally, among those who reported an observer effect, there were no systematic differences in the distribution of changes. About the same number said that they watched more because the observer, as they said, watched less. Obviously, additional studies of different groups in different settings are needed before this problem is fully understood, but Lull's data suggest that although reactivity is a problem with observational techniques, its impact may not be as drastic as some suggest.

*In any case, at least **two strategies** are available to diminish the impact of selective perception and reactance. **One** is to use several observers to cross-validate the results. **A second strategy** has to do with the notion of triangulation - the supplementing of observational data with data gathered by other means (questionnaires, existing records, and so on). Accuracy is sought by using multiple data collection methods.*

Field Observation Techniques

5.2.3 Field Observation Techniques

There are at least six stages in a typical field observation study: choosing the research site, gaining access, sampling, collecting data, analyzing data, and exiting.

Choosing the Research Site

5.3 Choosing the Research Site

The choice of a research site depends upon the general nature of the research question. The area of inquiry usually suggests a behavior or a phenomenon of interest. Once that is identified, the next step is to select a setting in which the behavior or phenomenon occurs with sufficient frequency to make observation worthwhile. The setting should also accommodate the recording forms and instruments the observer plans to use. For example, if videotaping certain scenes is planned, there must be enough light available for the camera to operate.

It is recommended that the researcher select two or three possible research sites and then "hang around" each of them to discover their main advantages and disadvantages. He goes on to caution researchers that the site must be permanent and stable enough to permit observations over a period of time.

Gaining

Access

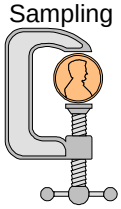
5.3.1 Gaining Access

Once the site is selected, the next step is to establish contact. It is noted that the degree of difficulty faced by researchers in gaining access to settings is a function of two factors: (1) how public the setting is, and (2) the willingness of the subjects in the setting to be observed. *The easiest setting to gain access to is one that is open to the public and where people have little reason to keep their behavior secret (for example, TV watching in public places such as airports, bars, dormitory viewing rooms). The most difficult setting to gain access to is one where entry is restricted and where participants have good reason to keep their activities secret (for example, the behavior of hostage takers).*

Observation of a formal group (such as a film production crew) often requires permission from management and perhaps union officials. School systems and other bureaucracies usually have a special unit to handle requests from researchers and to assist them in obtaining necessary permissions.

Gaining permission to conduct field observation research requires persistence and public relations skills. Researchers must determine how much to disclose about the nature of the research. In most cases, it is not necessary to provide a complete explanation of the hypothesis and procedures, unless there may be objections to sensitive areas. Researchers interested in observing which family member actually controls the television set might explain that they are studying patterns of family communication. Once the contact has been made, it is necessary to establish a rapport with the subjects). Bogdan and Taylor (1984) suggested the following techniques for building rapport: establish common interests with the participants; start relationships slowly; if appropriate, participate in common events and activities; and do not disrupt participants' normal routines.

Sampling



5.3.2 Sampling

Sampling in field observation is more ambiguous than in most other research approaches. In the first place, *there is the problem of how many individuals or groups to observe.* If the focus of the study is communication in the newsroom, how many newsrooms should be observed? If the topic is family viewing of television, how many families should be included? Unfortunately, there are no guidelines to help answer these questions. *The research problem and the goals of the study are often used as indicators for sample size: if the results are intended for generalization to a population, one subject or group is probably inadequate.*

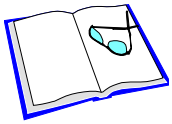
Another problem is deciding what behavior episodes or segments to sample. The observer cannot be everywhere and see everything, so what is observed becomes a de facto sample of what is not observed.

If an observer views one staff meeting in the newsroom, this meeting represents other, unobserved meetings; one conversation at the coffee machine is a sample of all such conversations. In many cases researchers cannot adhere closely to the principles of probability sampling, but they should keep in mind the general notion of representativeness.

Most field observations use purposive sampling: observers draw on their knowledge of the subject(s) under study and sample only from the behaviors or events that are relevant. In many cases, previous experience and study of the activity in question will suggest what needs to be examined. In a study of newsroom decision making, for example, researchers would want to observe staff meetings, since they are obviously an important part of the process. However, restricting the sampling to observations of staff meetings would be a mistake; many decisions are made at the water fountain, over lunch, and in the hallways. Experienced observers tend not to isolate a specific situation but rather to consider even the most insignificant situation for potential analysis. For most field observation, researchers need to spend some time simply getting the feel of the situation and absorbing the pertinent aspects of the environment before beginning a detailed analysis.

Collecting Data

5.3.3 Collecting Data



The traditional tools of data collection—the notebook and pen—have given way to radically new equipment in many cases, due to recent advances in electronics. For example, television cameras may be installed in a small sample of households to document the families' television-viewing behavior. Two cameras, automatically activate when the television set is turned on, videotaped the scene in front of the set. However, while a camera is able to record more information than an observer with a notebook, the problems in finding consenting families, maintaining the equipment, and interpreting tapes shot at low light levels made the project difficult.

Similarly, it was noted that although the advantages offered by audio and video recording are tempting, **there are five major drawbacks to their use:**

- *Recording devices take time away from the research process because they need regular calibration and adjustment to work properly.*
- *The frame of the recording is different from the frame of the observer;* a human observer's field of view is about 180°, whereas a camera's is about 60°.
- *Recordings have to be catalogued, indexed, and transcribed, adding extra work to the project.*
- *Recordings take behavior out of context.*
- *Recordings tend to atomize (fragment) behavior and distract attention from the whole process.*

Consequently, researchers must weigh the pros and cons carefully before deciding to incorporate recording equipment into the observational design.

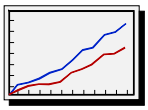
Note taking in the covert participant situation requires special attention. Continually scribbling away on a notepad is certain to draw attention and suspicion to the note taker and might expose the researcher's real purpose in a particular setting. In a situation of this type, it is advisable to make mental notes and transcribe them at the first opportunity. If the researcher is initially identified as such, the problem of note taking is somewhat alleviated. Nonetheless, it is not recommended that the observer spend all of his or her time furiously taking notes. Subjects are already aware of being observed, and conspicuous note taking could make them more uneasy. Brief notes jotted down during natural breaks in a situation attract a minimum of attention and can be expanded at a later time.

The field notes constitute the basic corpus of data in any field study. In them, the observers record not only what happened and what was said, but also personal impressions, feelings, and interpretations of what was observed. *A general procedure is to separate personal opinions from the descriptive narrative by enclosing the former in brackets.*

How much should be recorded? It is always better to record too much information than too little. An apparently irrelevant observation made during the first viewing session might become significant during the course of the project. If the material is sensitive, or if the researcher does not wish to make it known that research is taking place, the notes may be written in abbreviated form or in code.

Analyzing data

5.3.4 Analyzing data



In field observation, data analysis consists primarily of filing and content analysis. Constructing a filing system is an important step in observation. *The purpose of the filing system is to arrange raw field data in an orderly format to enable systematic retrieval later (the precise filing categories are determined by the data).* Using the hypothetical study of decision making in the newsroom, filing categories might include the headings "Relationships," "Interaction—Horizontal," "Interaction—Vertical," and "Disputes." An observation may be placed in more than one category. It is a good idea to make multiple copies of all notes, and periodic filing of notes throughout the observation period will save time and confusion later.

A rough content analysis is performed to search for consistent patterns once all the notes have been ascribed to their proper files. Perhaps most decisions in the newsroom are made in informal settings such as hallways rather than in formal settings such as conference rooms. Perhaps most decisions are made with little

superior-subordinate consultation. At the same time, deviations from the norm should be investigated. Perhaps all reporters except one are typically asked their opinions on the newsworthiness of events. Why the exception?

The overall goal of data analysis in field observation is to arrive at a general understanding of the phenomenon under study. In this regard, the observer has the advantage of flexibility. In laboratory and other research approaches, investigators must at some point commit themselves to a particular design or questionnaire. If it subsequently turns out that a crucial variable was left out, there is little that can be done. In field observation, the researcher can analyze data during the course of the study and change the research design accordingly.

Exiting

5.3.5 Exiting

A participant must also have a plan for leaving the setting or the group under study. Of course, if the participant is known to everyone, exiting will not be a problem. Exiting from a setting that participants regularly enter and leave is also not a problem. Exiting can be difficult, however, when participation is covert. In some instances, the group may have become dependent on the researcher in some way and the departure may have a negative effect on the group as a whole. In other cases, the sudden revelation that a group has been infiltrated or taken in by an outsider might be unpleasant or distressing to some. The researcher has an ethical obligation to do everything possible to prevent psychological, emotional, or physical injury to those being studied. Consequently, leaving the scene must be handled with diplomacy and tact.

Focus Groups

5.4 Focus Groups

The focus group, or group interviewing, is a research strategy for understanding audience/ consumer attitudes and behavior. *From 6 to 12 people are interviewed simultaneously, with a moderator leading the respondents in a relatively free discussion about the focal topic. The identifying characteristic of the focus group is* ***controlled group discussion****, which is employed to gather preliminary information for a research project, to help develop questionnaire items for survey research, or to understand the reasons behind a particular phenomenon.*

Advantages of Focus Groups

5.4.1 Advantages of Focus Groups

One advantage of focus groups is that they allow for the collection of preliminary information about a topic or phenomenon. Focus groups may be used in pilot studies to detect ideas that will be investigated further using another research method, such as a telephone survey, or another qualitative method.

A second important advantage is that focus groups can be conducted very quickly. The major portion of time is spent recruiting the respondents. A good research company that specializes in recruiting for focus groups can usually recruit respondents in about 7—10 days, depending on the type of person required.

The cost of focus groups also makes the approach an attractive research method; most focus groups can be conducted for about $1,000-$3,000 per group, depending on the type of respondent required for the group, the part of the country in which the group is conducted, and the moderator or company used to conduct the group. When respondents are difficult to recruit, or the topic requires a specially trained moderator, a focus group may cost several thousand dollars. *The price, however, is not excessive if the groups provide valuable data for future research studies.*

Researchers also like focus groups because of the flexibility in question design and follow-up. In conventional surveys, interviewers work from a rigid series of questions and are instructed to follow explicit directions in asking the questions. A moderator in a focus group, on the other hand, works from a list of broad questions as well as more refined probe questions; hence, follow-up on important points raised by participants in the group is easy. *The ability to clear up confusing responses from respondents makes focus groups valuable in the research process.*

Most professional focus group moderators or research companies use a procedure known as an extended focus group, in which respondents are required to complete a written questionnaire before the start of the group. The pregroup questionnaire, which basically covers the material that will be discussed during the group session, serves to "force" the respondents to commit to a particular answer or position before entering the group session. *This commitment eliminates one potential problem created by group dynamics, namely, the person who does not wish to offer an opinion because he or she is in minority.*

Finally, *focus group responses are often more complete and less inhibited than those from individual interviews.* One respondent's remarks tend to stimulate others to pursue lines of thinking that might not have been brought out in an individual situation. With a competent moderator, the discussion can have a beneficial snowball effect, as one respondent comments on the views of another. A skilled moderator can also detect the opinions and attitudes of those who are less articulate by noting facial expressions and other nonverbal behavior while others are speaking.

Disadvantages of Focus Groups

5.4.2 Disadvantages of Focus Groups

Focus group research is not totally free from complications; the approach is far from perfect. Some of the problems are discussed here.

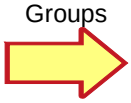
Some groups become dominated by a self-appointed group leader who monopolizes the conversation and attempts to impose her or his opinion on the other participants. Such a person usually draws the resentment of the other participants and may have an extremely adverse effect on the performance of the group. The moderator needs to control such situations tactfully before they get out of hand.

Gathering quantitative data is inappropriate for a focus group. If quantification is important, it is wise to supplement the focus group with other research tools that permit more specific questions to be addressed to a more representative sample. Many people unfamiliar with focus group research incorrectly assume that the method will answer questions of "how many" or "how much." *Focus group research is intended to gather qualitative data to answer questions such as "why" or "how." Many times people who hire a person or company to conduct a focus group are disgruntled with the results because they expected exact numbers and percentages. Focus groups do not provide such information.*

As suggested earlier, focus groups depend heavily on the skills of the moderator, who must know when to probe for further information, when to stop respondents from discussing irrelevant topics, and how to get all respondents involved in the discussion. All these things must be accomplished with professionalism and care, since one sarcastic or inappropriate comment to a respondent may have a chilling effect on the group's performance.

There are other drawbacks, as well. *The small focus group samples are composed of volunteers and do not necessarily represent the population from which they were drawn, the recording equipment or other physical characteristics of the location may inhibit respondents, and if the respondents are allowed to stray too far from the topic under consideration, the data produced may not be useful.*

Methodology of Focus Groups



There are seven basic steps in focus group research:
1. Define the problem

5.4.3 Methodology of Focus Groups

There are seven basic steps in focus group research.

1. Define the problem. This step is similar in all types of scientific research: *a well-defined problem is established, either on the basis of some previous investigation or out of curiosity.* For example, many television production companies that produce pilot programs for potential series will conduct 10-50 focus groups with target viewers to determine their reactions to each concept.

2. Select a sample

2. Select a sample. Because focus groups are small, *researchers must define a narrow audience for the study. The type of sample depends on the purpose of the focus group:* the sample might consist of consumers who use a particular type of laundry detergent, men aged 18—34 who listen to a certain type of music, or teenagers who purchase more than 10 record albums a year.

3. Determine the number of groups necessary

3. Determine the number of groups necessary. *To help eliminate part of the problem of selecting a representative group, most researchers conduct two or more focus groups on the same topic.* Results can then be compared to determine whether any similarities or differences exist; or, one group may be used as a basis for comparison to the other group. *A focus group study using only one group is rare, since there is no way to know if the results are group-specific or characteristic of a wider audience.*

4. Prepare the study mechanics

4. Prepare the study mechanics. *A more detailed description of the mechanical aspects of focus groups is in; suffice it to say here that this step includes arranging for the recruitment of respondents (by telephone or possibly by shopping center intercept), reserving the facilities at which the groups will be conducted, and deciding what type of recording (audio and/or video) will be used.* The moderator must be selected and briefed about the purpose of the group. In addition, the researcher needs to determine the amount of co-op money each respondent will receive for participating. Respondents usually receive between $10 and $50 for attending, although professionals such as doctors and lawyers may require up to $100 or more for co-op.

5. Prepare the focus group materials

5. Prepare the focus group materials. *Each aspect of a focus group must be planned in detail; nothing should be left to chance* — in particular, the moderator must not be allowed to wing it. The screener questionnaire is developed to produce the correct respondents; recordings and other materials the subjects will hear or see are prepared; any questionnaires the subjects will complete are produced (including the presession questionnaire); and a list of questions is developed for the presession questionnaire and the moderator's guide.

Generally, a focus group session begins with some type of shared experience, so that the individuals have a common base from which to start the discussion. The members may listen to or view a tape or examine a new product, or they may simply be asked how they answered question 1 on the presession questionnaire.

The existence of a moderator's guide does not mean that the moderator cannot ask questions not contained in the guide. Quite the opposite is true. The significant quality of a focus group is that it allows the moderator to probe comments that respondents make during the session. A professional moderator is often able to develop a line of questioning that no one thought about before the group

began, and many times the questioning provides extremely important information. Professional moderators who have this skill receive very substantial fees for conducting focus groups.

6. Conduct the session

6. Conduct the session. Focus groups may be conducted in a variety of settings, *from professional conference rooms equipped with two-way mirrors to hotel rooms rented for the occasion.* In most situations, a professional conference room is used. Hotel and motel rooms are used when a focus facility is not located close by.

7. Analyze the data and prepare a summary report

7. Analyze the data and prepare a summary report. *The written summary of focus group interviews depends on the needs of the study and the amount of time and money available.* At one extreme, the moderator/researcher may simply write a brief synopsis of what was said and offer an interpretation of the subjects' responses. *For a more elaborate content analysis, or a more complete description of what happened, the sessions can be transcribed so that the moderator/ researcher can scan the comments and develop a category system, coding each comment into the appropriate category.* For example, a researcher who notices that most respondents focus on the price of a new product can establish a content category labeled "Price," code all statements in the transcript referring to price, and arrange these statements under the general heading. The same technique is followed for other content categories. When the coding is completed, the researcher makes summastatements about the number, tone, and consistency of the comments that fall into each category. Needless to say, this approach requires some expenditure of time and money on the researcher's (or client's) part.

Intensive Interviews

5.5 Intensive Interviews

Intensive interviews, or in-depth interviews, are essentially a hybrid of the one-on-one personal interview approach discussed in Chapter 6. **Intensive interviews are unique in that they:**

- *Generally use smaller samples.*
- *Provide very detailed information about the reasons why respondents give specific answers. Elaborate data concerning respondents' opinions, values, motivations, recollections, experiences, and feelings are obtained.*
- *Allow for lengthy observation of respondents' nonverbal responses.*
- *Are usually very long. Unlike personal interviews used in survey research that may last only a few minutes, an intensive interview may last several hours, and may take more than one session.*
- *Are customized to individual respondents. In a personal interview, all respondents are asked the same questions. Intensive interviews allow interviewers to form questions based on each respondent's answers.*

- *Can be influenced by the interview climate. To a greater extent than with personal interviews, the success of intensive interviews depends on the rapport established between the interviewer and respondent.*

Advantages and Disadvantages of Intensive Interviews

5.5.1 Advantages and Disadvantages of Intensive Interviews

As is probably obvious, *the biggest **advantage** of the in-depth interview is the wealth of detail that it provides.* Further, *when compared to more traditional survey methods, intensive interviewing provides more accurate responses on sensitive issues.* The rapport between respondent and interviewer makes it easier to approach certain topics that might be taboo in other approaches. In addition, *there may be certain groups for which intensive interviewing is the only practical technique.* For example, a study of the media habits of U.S. senators would be hard to do as an observational study. Also, *it would be difficult to get a sample of senators to take the time to respond to a survey questionnaire. But in some cases, such persons might be willing to talk to an interviewer.*

On the ***negative side***, *generalizability is sometimes a problem. Intensive interviewing is typically done with a small, nonrandom sample.* Further*, since interviews are usually non-standardized, each respondent may answer a slightly different version of a question.* In fact, it is very likely that a particular respondent may answer questions not asked of any other respondent. *Another disadvantage of in-depth interviews is that they are especially sensitive to interviewer bias. In a long interview, it's possible for a respondent to learn a good deal of information about the interviewer. Despite practice and training, some interviewers may inadvertently communicate their attitudes through loaded questions, nonverbal cues, or tone of voice.* The effect this may have on the validity of the respondent's answers is hard to gauge. Finally, *intensive interviewing presents problems in data analysis.* A researcher given the same body of data taken from an interview may wind up with interpretations significantly different from the original investigator.

Procedures

5.5.2 Procedures

The procedures for conducting intensive interviews are similar to those used in personal interviews in reference to problem definition, respondent recruiting, and data collection and analysis. **The primary differences with intensive interviews are:**

- *Co-op payments are usually higher,* generally from $50-$1,000.
- *The amount of data is tremendous. Analysis may take several weeks to several months.*
- *Interviewers get extremely tired and bored. Interviews must be*

scheduled several hours apart, which makes data collection take much longer.

- *It is very difficult to arrange intensive interviews because of the time required. This is especially true with respondents who are professionals.*
- *Small samples do not allow for generalization to the target population.*

Case Studies

5.6 Case Studies

The case study method is another common qualitative research technique. Simply put, a case study uses as many data sources as possible to investigate systematically an individual, group, organization, or event. *Case studies are performed when a researcher desires to understand or explain a phenomenon. Case studies are frequently used in medicine, anthropology, clinical psychology, management science, and history.* Sigmund Freud wrote case studies of his patients; economists wrote case studies of the cable TV industry for the FCC; the list is endless.

On a more formal level, **a case study was defined as an empirical inquiry that uses multiple sources of evidence to investigate a contemporary phenomenon within its real-life context in which the boundaries between the phenomenon and its context are not clearly evident.** This definition highlights how a case study differs from other research strategies. For example, an experiment separates phenomenon from real-life context. The context is controlled by the laboratory environment. The survey technique tries to define the phenomenon under study narrowly enough to limit the number of variables to be examined. Case study research includes both single and multiple cases. Comparative case study research, frequently used in political science, is an example of the multiple case study technique.

Four essential characteristics of case study research: 1. Particularistic .2. Descriptive 3. Heuristic

4. Inductive

Four essential characteristics of case study research:

1. ***Particularistic.*** *This means that the case study focuses on a particular situation, event, program, or phenomenon, making it a good method for studying practical real-life problems.*
2. ***Descriptive.*** *The final result of a case study is a detailed description of the topic under study*
3. ***Heuristic.*** A case study helps people to understand what's being studied. New interpretations, new perspectives, new meaning, and fresh insights are all goals of a case study.
4. ***Inductive.*** *Most case studies depend on inductive reasoning. Principles and generalizations emerge from an examination of the data. Many case studies attempt to discover new relationships rather than verify existing hypotheses.*

Advantages of Case Studies

5.6.1 Advantages of Case Studies

The case study method is most valuable when the researcher wants to obtain a wealth of information about the research topic. Case studies provide tremendous detail. Many times researchers want such detail when they don't know exactly what they are looking for. *The case study is particularly advantageous to the researcher who is trying to find clues and ideas for further research.* This is not to suggest, however, that case studies are to be used only at the exploratory stage of research. *The method can also be used to gather descriptive and explanatory data.*

The case study technique can suggest why something has occurred. For example, in many cities in the mid-1980s, cable companies asked to be released from certain promises made when negotiating for a franchise. To learn why this occurred, a multiple case study approach, examining several cities, could have been used. Other research techniques, such as the survey, might not be able to get at all the possible reasons behind this phenomenon. Ideally, case studies should be used in combination with theory to achieve maximum understanding.

The case study method also affords the researcher the ability to deal with a wide spectrum of evidence. Documents, historical artifacts, systematic interviews, direct observations, and even traditional surveys can all be incorporated into a case study. In fact, the more data sources that can be brought to bear in a case, the more likely it is that the study will be valid.

Disadvantages of Case Studies

5.6.2 Disadvantages of Case Studies

There are three main criticisms. *The first has to do with a general lack of scientific rigor in many case studies.* It was observed that in too many times, the case study investigator has been sloppy, and has allowed equivocal evidence or biased views to influence the findings and conclusions. It is easy to do a sloppy case study; rigorous case studies require a good deal of time and effort.

The second criticism is that the case study is not easily open to generalization. If the main goal of the researcher is to make statistically based normative statements about the frequency of occurrence of a phenomenon in a defined population, some other method may be more appropriate. This is not to say that the results of all case studies are idiosyncratic and unique. In fact, if generalizing theoretic propositions is the main goal, the case study method is perfectly suited to the task.

Finally, like participant observation, *case studies are likely to be time-consuming and may occasionally produce massive quantities of data that are hard to summarize.* Consequently, fellow researchers are

forced to "wait years for the results of the research, which too often are poorly presented. Some authors, however, are experimenting with nontraditional methods of reporting to overcome this last criticism.

Conducting a Case Study

5.6.3 Conducting a Case Study

The precise method of conducting a case study has not been as well documented as the more traditional techniques of the survey and the experiment. Nonetheless, **there appear to be five distinct stages in carrying out a case study: design, pilot study, data collection, data analysis, and report writing.**

There are five distinct stages in carrying out a case study:

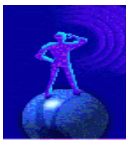
Design

Design

The first concern in a case study is what to ask. The case study is most appropriate for questions that begin with "how" or "why." A research question that is clear and precise will focus the remainder of the efforts in a case study. *A second design concern is what to analyze.* What exactly constitutes a "case"? In many instances, a case may be an individual, several individuals, or an event or events. If information is gathered about each relevant individual, *the results are reported in the single or multiple case study format; in other instances, however, the precise boundaries of the case are harder to pinpoint.* A case might be a specific decision, a particular organization at a certain point in time, a program, or some other discrete event. One rough guide for determining what to use as the unit of analysis is the available research literature. Since researchers want to compare their findings with the results of previous research, it is sometimes a good idea not to stray too far from what was done in past research.

Pilot Study

Pilot Study



Before the pilot study is conducted, the case study researcher must construct a study protocol. This document contains the procedures to be used in the study and also includes the data-gathering instrument or instruments. A good case study protocol contains the procedures necessary for gaining access to a particular person or organization and the methods for accessing records. It also contains the schedule of data collection and addresses the problems of logistics. For example, the protocol should note whether a copy machine will be available in the field to duplicate records, whether office space is available to the researchers, and what will be needed in the way of supplies. *The protocol should also list the questions central to the inquiry and the possible sources of information to be tapped in answering these questions.* If interviews are to be used in the case study, *the protocol should contain the questions to be asked.*

Once the protocol has been developed, the researcher is ready to go into the field for the pilot study. *A pilot study is used to refine both the research design and the field procedures.* Variables that were not foreseen during the design phase can crop up during the pilot study, and problems with the protocol or with study logistics can also be

uncovered. The pilot study also allows the researchers to try different data-gathering approaches and to observe different activities from several trial perspectives. The results of the pilot study are used to revise and polish study protocol.

Data Collection

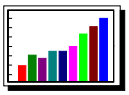
Data Collection

At least four sources of data can be used in case studies. Documents, which represent a rich data source, may take the form of letters, memos, minutes, agendas, historical records, brochures, pamphlets, posters, and so on. A second source is the **interview.** Some case studies make use of survey research methods and ask respondents to fill out questionnaires, others may use intensive interviewing.

Observation/participation is the third data collection technique. The same general comments made about this technique earlier in this chapter apply to the case study method as well. The last source of evidence used in case studies is the **physical artifact—a tool, a piece of furniture, or even a computer printout.** Although artifacts are commonly used as a data source in anthropology and history, they are seldom used in mass media case study research. (They are, however, frequently used in legal research concerning the media.)

Most case study researchers recommend using multiple sources of data, thus affording triangulation of the phenomenon under study. In addition, multiple sources help the case study researcher improve the reliability and validity of the study. Not surprisingly, a study of the case study method found that the ones that used multiple sources of evidence were rated higher than those relying on a single source.

Data Analysis



Data Analysis

Unlike more quantitative research techniques, there are no specific formulas or "cookbook" techniques to guide the researcher in analyzing the data. Consequently, *this stage is probably the most difficult in the case study method.* Although it is hard to generalize to all case study situations, **three broad analytic strategies were suggested: pattern matching, explanation building, and time series.**

In the pattern-matching strategy*, an empirically based pattern is compared with a predicted pattern or several alternative predicted patterns.* For instance, suppose a newspaper is about to institute a new management tool: a regular series of meetings between top management and reporters, excluding editors. Based on organizational theory, a researcher might predict certain outcomes, namely, more stress between editors and reporters, increased productivity, weakened supervisory links, and so on. If analysis of the case study data indicates that these results did in fact occur, some conclusions about the management change can be made. If the predicted pattern did not match the actual one, the initial study propositions would have to be questioned.

In the analytic strategy of explanation building*, the researcher tries to construct an explanation about the case by making statements about the cause or causes of the phenomenon under study.* This method can take several forms. Typically, however, an investigator drafts an initial theoretical statement about some process or outcome, compares the findings of an initial case study against the statement, revises the statement, analyzes a second comparable case, and repeats this process as many times as necessary. For example, to explain why some new communication technologies are failing, a researcher might suggest lack of managerial expertise as an initial proposition. But an investigator who examined the subscription television industry might find that lack of management expertise is only part of the problem—inadequate market research is also contributory.

Armed with the revised version of the explanatory statement, the researcher would next examine the direct broadcast satellite industry to see whether this explanation needs to be further refined, and so on, until a full and satisfactory answer is achieved.

In the analytic strategy of time *series analysis, the investigator tries to compare a series of data points to some theoretic trend that was predicted before the research, or to some rival trend.* If, for instance, several cities have experienced newspaper strikes, a case study investigator might generate predictions about the changes in information-seeking behaviors of residents in these communities and conduct a case study to see whether these predictions were supported.

Report Writing

Report Writing

The case study report can take several forms. The report can follow the **traditional research** *study format: problem, methods, findings, and discussion*. Or it can use a **nontraditional technique**. Some case studies are best suited for a chronological arrangement, whereas case studies that are comparative in nature can be reported from that perspective. No matter what form is chosen, the researcher must consider the intended audience of the report. A case study report written for policy makers would be done in a style different from one that was to be published in a scholarly journal.

Chapter 6: Writing Research Proposals

This chapter will be mainly a practical one to train students on the different techniques and proceedings that we use in writing.

Chapter 7: Writing Research Reports

Introduction

Writing a research report is naturally **an important step in the scientific process**, since the report places the research study in the public domain for consideration and confirmation. Beginning researchers generally find the process much easier after they have completed one or two studies. **A key to successful writing** is to follow the *guidelines developed by journal editors, or styles developed by individual companies or businesses.* The same basic five-section format is used for all reports.

Ethical considerations in conducting research should not be overlooked. Nearly every research study has the potential of affecting subjects in some way, either psychologically or physically. Researchers dealing with human subjects must take great care to ensure that all precautions are taken to alleviate any potential harm to subjects. This includes carefully planning a study as well as debriefing subjects upon completion of a project.

The **final part of this chapter describes financing research projects**. This topic is relevant to all researchers because lack of funds often cancels good research projects. The chapter describes a variety of sources that provide financial assistance; none should be overlooked.

7.1 Research Reports

Research Reports

The first step in writing any research report is to **identify the intended readers.** This is an important decision because the organization, **style**, and even the mode of presentation depend on the target audience. In mass media research, there are typically two types of audiences and two types of research reports:

1. Reports **aimed at colleagues** and intended for publication in scholarly and professional journals or for presentation at a convention.

2. Reports **aimed at decision makers** and intended for in-house use only.

The format, length, style, and organization of a published report will have to conform to the guidelines of the journal in which it appears. Since colleagues are the target audience for such reports and papers, the writer must pay close attention to the theory underlying the

research, the methods used, and the techniques of analysis. In the second instance, there is more flexibility. Some decision makers prefer to be briefed orally by the researcher. In such cases the verbal presentation might be supplemented by a written summary, handouts, visual aids, and, on request, a detailed report. In other circumstances, the researcher might prepare a written report with a short executive summary, confining most of the technical material to appendixes. No matter what the situation or audience, the primary goal in all research reports is accuracy.

7.2 The Need for Accurate Reporting Procedures

The Need for Accurate Reporting Procedures

Researchers need to report research accurately for two reasons. First, a clear explanation of the investigator's methods provides an opportunity for readers to more completely understand the project. Researchers should keep in mind that in most cases, a reader's knowledge of a given project is based solely on the information contained in the report. Since readers do not instinctively understand each procedure used in a study, these details must be supplied. Second, an accurate report provides the necessary information for those who wish to replicate the study. Enough information must be included or filed somewhere in public archives to enable reproduction of the study without the necessity of personal contact with the investigator. This is to ensure that a study is always respectable regardless of the decades or generations that may pass.

Ability to replicate

Researchers should also be able to replicate a published study from the information contained therein. Realistically speaking, however, this is not always possible. Mass media journals have limited space, and journal editors do not have the luxury of printing all raw data, tables, and graphs generated by a study; they are forced to eliminate some essential information. Therefore, alternative—data archives—is very important.

The conclusion

The conclusion, then, is that individual researchers must take full responsibility for accurately reporting and storing their own research data. To facilitate this task, the following subsections describe the important elements of research that should be included in a published study. The lists may appear long in some cases, but in reality, most of the information can be contained in a few short sentences. At any rate, it is better to include too much information than too little.

7.3 The Mechanics of Writing a Research Report

The Mechanics of Writing a Research Report

Beginning researchers may find the writing style used for research reports awkward or unaesthetic, but there is a definite purpose behind the rules governing scientific writing: clarity. Every effort must be made to avoid ambiguity.

Given the wide variety of approaches to research, it stands to reason that the approaches to writing a research report are equally varied. Most research reports, however, include only five basic sections or chapters: introduction, literature review, methods, results, and discussion.

7.3.1 Introduction

Introduction

The introduction should alert the reader to what is to follow. Most introductions usually contain the following:

Problem statement

1. **Statement of the problem**. The first job of the report writer is to provide some information about the background and the nature of the problem under investigation. If the research topic has a long history, then a short summary is in order. This section should also discuss any relevant theoretical background that pertains to the research topic.

Justification

2. **Justification.** Another important area to be covered in this initial section is the rationale and justification for the project. This section should address the question of why it is important for us to spend time and energy researching this particular problem. Research can be important because it deals with a crucial theoretical issue, because it has practical value, or because it has methodological value.

Aims of the current study

3. ***Aims of the current study***. Most introductory sections conclude with an unequivocal statement of the hypothesis or research question to be answered by the study.

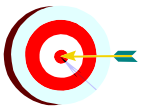
7.2.2 Literature Review

Literature Review

The second major section is the review of the literature. In some formats, the literature review is incorporated into the introduction. As the name suggests, the literature review section briefly recapitulates the work done in the field. This review need not be exhaustive; the writer should summarize only those studies most relevant to the current project. All literature reviews should be accurate and relevant.

1. Accuracy

Accuracy



A concise and accurate distillation of each study in your review is a prerequisite for any literature review. The main points of each study—hypotheses that were tested, sample, method, findings, and implications— should be briefly summarized. The review should be selective but thorough**.**

2. Relevance

Relevance

A literature review should be more than a rote recitation of research studies. It must also contain analysis and synthesis. The writer is

obligated to discuss the relevance of the past work to the current study. What theoretic development can be seen in past work? What major conclusions have recurred? What were some common problems? How do the answers to these questions relate to the current study? The ultimate aim of the review is to show how your study evolved out of past efforts and how the prior research provides a justification for your study.

Methods

7.3.3 Methods

The methods section describes the approach used to confront the research problem. Some of the topics that are usually mentioned in this section are as follows.

Variables used the analysis

1. *Variables used in the analysis*

This includes a description of both independent and dependent variables, explaining how the variables were selected for the study, what marker variables, if any, were included, and how extraneous variables were controlled. Each variable also requires some justification for its use — variables cannot be added without reason. The mean and the standard deviation for each variable should be reported when necessary**.**

Sample size

2. *Sample size*

The researcher should state the number of subjects or units of study and also explain how these entities were selected. Additionally, any departure from normal randomization must be described in detail.

Sample characteristics

3. *Sample characteristics*

The sample should also be described in terms of its demographic, lifestyle, or other descriptor characteristics. When human subjects are used, at least their age and sex should be indicated.

Methodology

4. *Methodology*

Every research report requires a description of the methods used to collect and analyze data. The amount of methodological description to be included depends on the audience; articles written for journals, for instance, must contain more detailed information than reports prepared in private sector research.

Data manipulation

5. *Data manipulation*

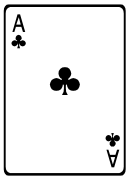
Often the collected data are not normally distributed, and researchers must use data transformation to achieve an approximation of normality. If such a procedure is used, a full explanation should be given.

Results

7.3.4 Results

The results section contains the findings of the research. It typically contains the following:

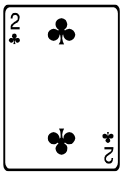
Description of the analysis



1. *Description of the analysis*

The statistical techniques used to analyze the data should be mentioned. If the analysis used common or easily recognized statistics, a one-sentence description might be all that is needed, such as "Chi-square analyses were performed on the data" or "Analysis of variance was performed….."If appropriate, the particular statistical program used by the researcher should be identified. Finally, this part should include an overview of what is to follow: "This section is divided into two parts. We will first report the results of the analysis of variance and then the results of the regression analysis."

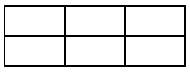
Description of findings



2. *Description of findings*

The findings should be tied to the statement of the hypotheses or research questions mentioned in the introduction. The author should clearly state whether the results supported the hypotheses or whether the research questions were answered. Next, any peripheral findings can be reported. Many researchers and journal editors suggest that interpretation and discussion of findings be omitted from this section and that the writer should stick solely to the bare facts. Others think that this section should contain more than numbers, suggesting the implications of the findings as well. In fact, for some short research articles, this section is sometimes called "Findings and Discussion." The choice of what model to follow depends upon the purpose of the report and the avenue of publication.

Tables



3. *Tables*

Tables, charts, graphs, and other data displays should be presented parsimoniously and, if the article is being submitted to a journal, in the proper format. Remember that many readers turn first to the tables and may not read the accompanying text; consequently, tables should be explicit and easily understood by themselves**.**

Discussion

7.3.5 Discussion

The last section of a research report is the discussion. The contents of this section are highly variable but the following elements are common.

Summary

1. *Summary*

A synopsis of the main findings of the study often leads off this section.

Implication/ discussion/ interpretations

2. *Implications/discussion/interpretations*

This is the part of the report that discusses the meaning of the findings. If the findings are in line with current theory and research, the writer should include a statement of how they correspond with what was done in the past. If the findings contradict or do not support current theory, then some explanation for the current pattern of results is provided.

Limitations

3. *Limitations*

The conclusions of the study should be tempered by a report of some of its constraints. Perhaps the sample was limited or the response rate was low or the experimental manipulation was not as clean as it could have been. In any case, the researcher should list some of the potential weaknesses of the research.

Suggestion for future research

4. *Suggestions for future research*

In addition to answering questions, most research projects uncover new questions to be investigated. The suggestions for research should be relevant and practical.

Writing Style

7.4 Writing Style

Since the writing requirements for journal articles and business or government reports vary in several ways, the following guidelines are divided into two sections, writing for scholarly journals and writing a report for business or government decision makers.

Writing for Scholarly Journals

7.4.1 Writing for Scholarly Journals

There are nine principal guidelines for writing for scholarly journals.

Avoid first person pronouns

1. **Avoid using first person pronouns:** I, me, my, we, and so on. Research reports are almost always written in third person ("Subjects were selected randomly." "Subject A told the researcher . . . and so on. First person pronouns should be used only when the article is a commentary.

Organize tables and figures

2. **When submitting a paper for professional publication**, place each table, graph, chart, and figure on a separate page. This is done because if the article is accepted, these pages will be typeset by one department of the printing company and the text by another. (In management reports, tables, graphs, and other displays are included in the text unless they are too large, in which case they should be placed on separate pages.)

Read guidelines

3. **Read the authors' guidelines published by each journal.** They provide specific rules concerning acceptable writing style, footnote and bibliography formats, the number of copies to submit, and so forth. A researcher who fails to follow these guidelines may decrease the chance that his or her report will be accepted for publication — or at least substantially delay the process while alterations are made.

Follow the format

4. **Be stylistically consistent with regard to** tables, charts, graphs, section headings, and so forth. Tables, for example, should follow the same format and should be numbered consecutively.

Label clearly

5. **Clearly label all displays with meaningful titles.** Each table, graph, chart, or figure caption should accurately describe the material presented and its contribution to the report.

Simple language

6. **Keep language and descriptions as simple as possible** by avoiding unnecessary and overly complex words, phrases, and terms. The goal of scientific writing is to explain findings clearly, simply, and accurately

Active voice

7. **When possible, use the active rather than passive voice.** For example, "The researchers found that. . ." is preferable to "It was found by the researchers that. . . ." Writing in the active voice makes reading more pleasant and also requires fewer words.

Proofread carefully

8. **Proofread the manuscript carefully.** Even researchers who are meticulous in their scientific approach can make errors in compiling a manuscript. All manuscripts, whether intended for publication or for management review, should be proofread several times to check for accuracy.

Miscellaneous

9. **Miscellaneous considerations:**
   a. Avoid phrases or references that could be interpreted as sexist or racist.
   b. Check all data for accuracy. Even one misplaced digit may affect the results of a study.
   c. Use acceptable grammar; avoid slang.
   d. Provide acknowledgments whenever another researcher's work is included in the report.
   e. Include footnotes to indicate where further information or assistance can be obtained.

Write a Report for Business or Government Decision Makers

7.4.2 Writing a Report for Business or Government Decision Makers

Guidelines for writing a report for business or government decision makers include the following.

Excessive summary

1. **Provide an executive summary at the beginning of the report**. Since busy decision makers may not read anything else in the report, great care must be taken in constructing this section. Some useful hints are:

   a. **Get right to the point** and state conclusions quickly.

   b. **Keep the language simple and concise.** Don't use jargon, clichés, or overly technical terms.

   c. **Be brief.** Keep the summary to no more than a page — surely no more than two pages. Anything else ceases to be a summary.

Place complicated discussions

2. **Place detailed and complicated discussions of methods in a technical appendix**. Summarize the procedures in the body of the report.

techniques

3. **Use clearly defined and easily understood quantitative analysis techniques**. Most decision makers are not familiar with complicated statistical procedures. Keep the basic analysis simple. If it becomes necessary to use advanced statistical procedures, explain in the body of the report what was done and what the results mean. Include another technical appendix that describes the statistical technique in detail.

Use graphs and charts

4. **Use graphs and charts wherever appropriate** to make numerical findings more understandable and meaningful. Never let tabular material stand alone; to ensure that its importance is not overlooked, mention or explain each such item.
5. **Decision makers like research** that provides answers to their questions. Put the conclusions reached by the investigators and, if appropriate, recommendations for action in the last section of the report.

Research Ethics

7.5 Research Ethics

The **majority of social research involves observations of human beings—asking them questions or examining what they have done.** Since human beings have certain rights, the researcher must ensure that the rights of the participants in a project are not violated. This requires a consideration of ethics: distinguishing right from wrong and the proper from the improper. Unfortunately, there are no universal definitions for these terms. Instead, a series of guidelines, broad generalizations, and suggestions has been endorsed or at least tacitly accepted by most in the research profession. These guidelines will not provide an answer to every ethical question that may arise, but they can Wip Triage researchers more sensitive to the issues.

Before discussing these specific guidelines, we list some hypothetical research situations that **involve ethics.**

1. A researcher at a large university hands questionnaires to the students in an introductory mass media course and tells them that if they do not complete the forms, they will lose points toward their grade in the course.

2. A researcher is conducting a mail survey about attendance at X-rated motion pictures. The questionnaire states that responses will be anonymous. Unknown to the respondents, however, each return envelope is marked with a code that enables the researcher to identify the sender.

3. A researcher recruits subjects for an experiment by stating that participants will be asked to watch "a few scenes from some current movies." Those who decide to participate are shown several scenes of bloody and graphic violence.

4. A researcher shows one group of children a violent television show and another group a nonviolent program. After viewing, the children are sent to a public playground, where they are told to play with the children who are already there. The researcher records each instance of violent behavior exhibited by the young subjects.

5. Subjects in an experiment are told to submit a sample of their news writing to an executive of a large newspaper. They are led to believe that whoever submits the best work will be offered a job at the paper. In fact, the "executive" is a confederate in the experiment and severely criticizes everyone's work.

These examples of ethically flawed study designs should be kept in mind while reading the following guidelines to ethics in mass media research.

7.6 General Ethical Principles

General Ethical Principles

General ethical principles are difficult to construct in the research area. There are, however, at least four principles from the study of ethics that have relevance.

First, is the principle of autonomy, or the principle of self-determination? Basic to this concept is the demand that the researcher respect the rights, values, and decisions of other people. The reasons for a person's action should be respected and the actions not interfered with. This principle is exemplified by the use of informed consent in the research procedure.

A second ethical principle important to social science research is that of nonmaleficence. In short, it is wrong to intentionally inflict harm on another.

A third ethical principle — beneficence—is usually considered in tandem with nonmaleficence. Beneficence stipulates a positive obligation to remove existing harms and to confer benefits on others. These two principles operate together, and often the researcher must weigh the harmful risks of research against its possible benefits (for example, increase in knowledge, and refinement of theory).

A fourth ethical principle that is sometimes relevant to social science is the principle of justice. At its general level, this principle holds that people who are equal in relevant respects should be treated equally. In the research context, this principle should be applied when new programs or policies are being evaluated. The positive results of such research should be shared with all. It would be unethical, for example, to deny the benefit of a new teaching procedure to children because they were originally chosen to be in the control group rather than the group that received the experimental procedure. Benefits should be shared with all who are qualified.

Although it is difficult to generalize, it is clear that **mass media researchers must follow some set of rules to fulfill their ethical obligations to their subjects and respondents.** Cook (1976), discussing the laboratory approach, offers one such code of behavior.

1. **Do not involve** people in research without their knowledge or consent.

2. **Do not coerce** people to participate.

3. **Do not withhold** from the participant the true nature of the research.

4. **Do not actively lie** to the participant about the nature of the research.

5. **Do not lead the participant** to commit acts that diminish his or her self-respect.

6. **Do not violate the right** to self-determination.

7. **Do not expose** the participant to physical or mental stress.

8. **Do no**t **invade** the privacy of the participant.

9. **Do not withhold benefits** from participants in control groups.

10. **Do not fail to treat** research participants fairly and to show them consideration and respect.

Voluntary participation and Informed Consent

7.7 Voluntary Participation and Informed Consent

An individual is entitled to decline to participate in any research project or to terminate participation at any time. Participation in an experiment, survey, or focus group is always voluntary and any form of coercion is unacceptable. Researchers who are in a position of authority over subjects (as in the situation where the researcher hands the university students questionnaires) should be especially sensitive to *implied* coercion: even though the researcher might tell the class that failure to participate will not affect their grades, many students may not believe this. In such a situation, it would be advisable to keep the questionnaires anonymous and to have the person in authority be absent from the room while the survey is administered.

Voluntary participation

Voluntary participation is a less pressing ethical issue in mail and telephone surveys, since respondents are free to hang up the phone or to throw away the questionnaire. Nonetheless, a researcher should not attempt to induce subjects to participate by misrepresenting the organization sponsoring the research or by exaggerating its purpose or importance. For example, phone interviewers should not be instructed to identify themselves as representatives of the "Department of Information" to mislead people into thinking the survey is government-sponsored. Likewise, mail questionnaires should not be constructed to mimic census forms, tax returns, social security questionnaires, or other official government forms.

Closely related

Closely related to voluntary participation is the notion of *informed* consent. For people to volunteer for a research project, they need to know enough about the project to make an intelligent choice. Researchers have the responsibility to inform potential subjects or respondents of all features of the project that can reasonably be expected to influence participation. Respondents should understand that an interview may take as long as 45 minutes, or that a second interview is required, or that upon completing a mail questionnaire, they may be singled out for a telephone interview.

In an experiment, informed consent means that potential subjects must be warned of any possible discomfort or unpleasantness that might be involved. Subjects should be told if they are to receive or administer electric shocks, be subjected to unpleasant audio or visual stimuli, or undergo any procedure that may cause concern. Any unusual measurement techniques that may be used also must be described. Researchers have an obligation to answer candidly and truthfully, as far as possible, all the participant's questions about the research.

Experiments

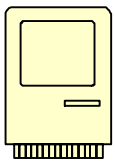
Experiments that involve deception (see the following subsection) cause special problems with regard to obtaining informed consent. If deception is absolutely necessary to conduct an experiment, is the experimenter obligated to inform subjects that they may be deceived during the upcoming experiment? Will such a disclosure affect participation in the experiment? Will it also affect the experimental results? Should one compromise by telling all potential subjects that deception to be involved for some participants but not for others?

A second problem

A second problem is deciding exactly how much information about a research project must be disclosed in seeking to achieve informed consent. Is it enough to explain that the experiment involves rating commercials, or is it necessary to add that the experiment is designed to test whether subjects with high IQs prefer different commercials from those with low IQs? *Obi-\\ovs\f,* msorrie situations the researcher cannot reveal everything about the project for fear of contaminating the results. For example, if the goal of the research is to examine the influence of peer pressure on commercial evaluations, alerting the subjects to this facet of the investigation might change their behavior in the experiment.

Problems might occur

Media



Problems might occur in research examining the impact of mass media in non-literate communities, for example, if the research subjects did not comprehend what they were told regarding the proposed investigation. Even in literate societies, many people fail to understand the implications for confidentiality of the storage of survey data on computer disks or tape. Moreover, an investigator might not have realized in advance that some subjects would find part of an experiment or survey emotionally disturbing. Since it is impossible for informed consent to apply to all situations, the American Psychological Association has suggested that researchers have a responsibility to continue their attention to subjects' welfare after the completion of data collection.

Research findings

Research findings provide some indication of what research participants should be told. Subjects always want a general description of the experiment and what was expected of them; they want to know whether danger was involved, how long the experiment would last, and the experiment's purpose. As far as informed consent and survey participation are concerned. There is a wide variation among researchers about what to tell respondents in the survey introduction. Almost all introductions identified the research organization and the interviewer by name and described the research topic. Less frequently mentioned in introductions were the sponsor of the research and guarantees of confidentiality or anonymity. Few survey introductions mentioned the length of the survey or that participation was voluntary.

Finally, one must consider the form of the consent to be obtained. Written consent is a requirement in certain government-sponsored

research programs and may also be required by many university research review committees, as discussed next in connection with guidelines promulgated by the federal government. In several generally recognized situations, however, signed forms are regarded as impractical. These include telephone surveys, mail surveys, personal interviews, and cases in which the signed form itself might represent an occasion for breach of confidentiality. For example, a respondent who has been promised anonymity as an inducement to participate in a face-to-face interview might be suspicious if asked to sign a consent form after the interview. In these circumstances, the fact that the respondent agreed to participate is taken as implied consent.

Concealment and Deception

7.8 Concealment and Deception

Concealment and deception techniques are encountered most frequently in experimental research. Concealment is the withholding of certain information from the subjects; deception is deliberately providing false information. Both practices raise ethical problems. The difficulty in obtaining consent has already been mentioned. A second problem derives from the general feeling that it is wrong for experimenters to lie or otherwise to deceive subjects.

Many critics argue that deception transforms a subject from a human being into a manipulated object and is therefore demeaning to the participant. Moreover, once subjects have been deceived, they are likely to expect to be deceived again in other research projects. At least two research studies seem to suggest that this concern is valid. Studies have found that high incidence of suspicion among subjects of high school age after having been deceived.

On the other hand, some researchers argue that certain studies could not be conducted at all without the use of deception. They claim that the harm done to those who are deceived is outweighed by the benefits of the research to scientific knowledge. The same arguments can be used both for and against concealment. In general, however, concealment is a somewhat less worrisome ethical problem, provided enough information is given to subjects to allow informed consent and all the subjects' questions are answered candidly.

Obviously, deception is not a technique that should be used indiscriminately. It is suggested that before the investigator settles on deception as an experimental tactic, three questions should be examined:

1. How significant is the proposed study?
2. Are alternative procedures available that would provide the same information?
3. How severe is the deception? (It is one thing to tell subjects that

the experimentally constructed message they are reading was taken from the New *York* Times; it is another to report that the test a subject has just completed was designed to measure latent suicidal tendencies.)

Another set of criteria was put forth by Elms (1982), who suggested five necessary and sufficient conditions under which deception can be considered ethically justified in social science research.

1. When there is no other feasible way to obtain the desired information
2. When the likely benefits substantially outweigh the likely harms
3. When subjects are given the option to withdraw at any time without penalty
4. When any physical or psychological harm to subjects is temporary
5. When subjects are debriefed as to all substantial deception and the research procedures are made available for public review

Researchers are offered good advice for the planning stages of investigations.

When an experiment is concluded, especially one involving concealment or deception, it is the responsibility of the investigator to debrief subjects. Debriefing should be thorough enough to remove any lasting effects that might have been created by the experimental manipulation or by any other aspect of the experiment. Subjects' questions should be answered and the potential value of the experiment stressed. How common is debriefing among mass media researchers?

Protection of Privacy

7.9 Protection of Privacy

The problem of protecting the privacy of participants usually occurs more often in survey research than in laboratory studies. Subjects have a right to know whether their privacy will be maintained and who will have access to the information they provide. There are two ways to guarantee privacy: by assuring anonymity and by assuring confidentiality. A promise of anonymity is a guarantee that a given respondent cannot possibly be linked to any particular response. In many research projects anonymity is an advantage, since it encourages respondents to be honest and candid in their answers. Strictly speaking, personal and telephone interviews cannot be anonymous because the researcher can link a given questionnaire to a specific person, household, or telephone number. In such instances, the researcher should promise confidentiality; that is, the respondents should be assured that even though as individuals they can be identified, their names will never be publicly associated with the information they provide. A researcher should never use "anonymous" in a way that is or seems to be synonymous with "confidential."

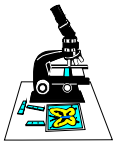
Additionally, respondents should be told who *will* have access to the information they provide. The researcher's responsibility for assuring confidentiality does not end once the data have been analyzed and the study concluded. Questionnaires that identify persons by name should not be stored in public places, nor should other investigators be given permission to examine confidential data unless all identifying marks have been obliterated.

7.10 Ethics in Data Analysis and Reporting

Ethics in Data Analysis and Reporting

Researchers

Science is a public activity



Finally

Researchers are also responsible for maintaining professional standards in the analysis and reporting of their data. The ethical guidelines in this area are less controversial and more clear-cut. One cardinal rule is that researchers have a moral and ethical obligation to refrain from tampering with data: questionnaire responses and experimental observations may not be fabricated, altered, or discarded. Similarly, researchers are expected to maintain reasonable care in processing the data to guard against needless errors that might affect the results.

Researchers should never conceal information that might influence the interpretation of their findings. For example, if two weeks elapsed between the testing of the experimental group and the testing of the control group, this delay should be reported so that other researchers can discount the effects of history and maturation on the results. Every research report should contain a full and complete description of method, particularly of any departure from standard procedures.

Since science is a public activity, researchers have an ethical obligation to share their findings and methods with other researchers. All questionnaires, experimental materials, measurement instruments, instructions to subjects, and other relevant items should be made available to those who wish to examine them.

Finally, all investigators are under an ethical obligation to draw conclusions from their data that are consistent with those data. Interpretations should not be stretched or distorted to fit a personal point of view or a favorite theory, or to gain or maintain a client's favor. Nor should researchers attribute greater significance or credibility to their data than they justify For example, when analyzing correlation coefficients obtained from a large sample, it is possible to achieve statistical significance with an r of only, for example, 10. It would be perfectly acceptable to report a statistically significant result in this case, but the investigator should also mention that the predictive utility of the correlation was not large, and specifically, that it explained only 1% of the total variation. In short, researchers should report results with candor and honesty.

Finding Support for Research

7.11 Finding Support for Research

Research costs money. Finding a source for research funds is a problem that confronts both quantitative and qualitative researchers in all fields of social science.

A researcher in need of funding should contact these organizations for details about the types of studies they support and the amount of funds available, as well as instructions for preparing research proposals.

University or college researchers should determine whether the institution has a program of research grants for individual faculty members. Many colleges award such grants, often on a competitive basis, for social research. Typically these grants are modest in size — usually under $5,000 — but they are among the easiest to apply for and to administer. In many cases grants are available for student research as well.

Finally

Finally, most colleges and universities have an Office of Contracts and Grants (or some similar title) that can be of great help to researchers. In addition to aiding the researcher with the bureaucratic requirements necessary for a grant application, this office can offer valuable assistance in other areas. For example, this office might offer computerized searches for sponsoring agencies, information about current grants, budget advice, preparation of abstracts, and even word-processing services. Researchers in the academic setting should take advantage of this resource.

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