

INTRODUCTION

The purpose of this book is to help you become effective consumers and producers of research. We live in a world where the amount of information available increases exponentially each year. One of the most important skills that you can bring to the workforce in the 21st century is the ability to interpret and evaluate existing data. In addition, the 21st-century workforce needs people who can produce valid and reliable data, accurately interpret trends and patterns, and summarize findings in a way that others can understand. We take the title—*Research Methods for Everyday Life*—seriously; we will introduce you to a variety of everyday examples that highlight the need to understand social science research.

This book will help you develop your quantitative and qualitative research techniques by exploring questions about human social behavior that will provoke your curiosity and connect with the experiences of your life. Throughout the book you will find real-life examples of practitioners using various research methodologies to answer questions in various lines of work, including psychology, sociology, education, business, political science, kinesiology, anthropology, and communication studies. You will also have the opportunity to engage in hands-on applications in which you actually do research. This is accomplished with numerous Your Turn boxes inserted in each chapter. The Your Turn exercises provide the opportunity to practice and apply the research methods and concepts presented in a chapter. The skills that you will practice during the exercises in the Your Turn boxes include sampling, naturalistic observation, surveying, coding, analysis, and report writing. In addition, you will have the opportunity to work with actual data and learn to analyze data statistically using SPSS (*Statistical Package for the Social Sciences*).

Research Methods for Everyday Life: Blending Qualitative and Quantitative Approaches is an introductory undergraduate text that highlights and explains the essentials of research methods. We focus on the essentials of research methods to help undergraduates understand and engage the research in their social science disciplines, to instruct students in conducting their own primary research, and to prepare students for advanced or graduate study. We reduce students' anxiety about research methods by presenting the essentials of research in a way that is easy for students to read and understand. We include stories, examples, real-life applications, and skill-development exercises. We include the essentials necessary for a solid undergraduate grounding in research methods; however, we exclude advanced terminology, difficult theoretical issues, and complex data analysis procedures.

This textbook features both quantitative and qualitative methods. Each approach receives four chapters of coverage. The chapters on quantitative methods cover measurement, correlational designs, basic experimental designs, and advanced experimental designs. The qualitative chapters cover introduction to qualitative methods, design and analysis, qualitative methods (ethnography, phenomenology, case study, textual analysis,

CHAPTER

1

UNDERSTANDING RESEARCH

LEARNING OBJECTIVES

- Understand theories, hypotheses, and where research questions come from.
- Understand the fundamental research distinctions of qualitative vs. quantitative, basic vs. applied, and traditional vs. action research.
- Understand the elements and importance of a research proposal.
- Understand the elements and importance of research ethics.
- Obtain an introduction to basic SPSS terminology and operations.

Some students do not like research. Those who pursue degrees in social sciences such as psychology, communication, sociology, anthropology, or education do so with a passion for understanding the human condition, and often with a desire to be of service to humankind. For some of these energetic students, a course in how to conduct social research is not a top priority. Why should students care about a research class, especially if they have no plans to become researchers after college?

It is crucial to remember that research is, for social scientists, the fundamental way the people in their field understand human beings. Furthermore, the practical applications of that research and those understandings by teachers, social workers, and therapists are also based on research. For example, why do facilities that treat substance abusers use one kind of therapy instead of another? Because research on the treatment of substance abuse has demonstrated that certain techniques are more effective than others (Kaminer, Burleson, & Goldberger, 2002). Why might it be ineffective for grade-school teachers to

rely too heavily on rewards and reinforcements to motivate students? Because research suggests that extrinsic rewards cause children to choose less difficult academic tasks (Harter, 1978). How do parents decide whether spanking is an effective form of discipline? Most likely they read books on parenting—and it is hoped that those books are informed by research. Research suggests that spanking results in higher immediate compliance with parents' demands, but also more aggression on the part of the spanked children in the long run (Gershoff, 2002). Such conclusions in research are not always straightforward, however; other researchers have looked at the use of spanking as a discipline technique and found it not to be as detrimental as supposed (Baumrind, Larzelere, & Cowan, 2002). As you will discover through this book, **research involves the collection, analysis, and interpretation of data, and not all researchers agree on the meaning of the same research evidence.**

Whether or not you ever conduct your own research study, **whether you need to make crucial decisions at your place of employment, or whether you are dealing with a family member who needs psychological help, understanding and interpreting social science research is crucial to effective and informed citizenship.** This book will help you develop the skills you need. It will do so in two ways.

First, this book will make you a *consumer* of research. Some of you may become professional social researchers, spending most of your work lives actually engaged in social science research. (Remember, though, that even the most active professional researchers only spend their time doing research on a very narrow area of social inquiry.) However, most of you will spend the majority of your professional lives reading research rather than doing it. In fact, people trained in the social sciences use their research skills in life domains other than their chosen **professions. Researchers use their research skills when they read the newspaper, discuss politics, and parent their children.** After reading this book, you will have the tools necessary to critically evaluate the claims of advertisers, educators, pollsters, and others who assert that statements are factually **correct. Being an informed consumer of research is vital to competency in an information-rich world.**

Second, this book will also teach you to be a *producer* of research. If your interests are in human services, you may not think you will ever conduct a research study. However, being able to conduct research will make you extremely valuable to your organization. We firmly believe that practitioners who can conduct research will be highly prized by social service organizations. In real-life employment settings, research skills are greatly needed yet underutilized; this book is an attempt to make future practitioners more comfortable with consuming and producing research. If you can market yourself as the “research person” on your staff, you will be highly valued in your workplace—and you will save your organization a lot of money in outside research services.

Many of you may also pursue advanced study in psychology, communication, education, sociology, or some other social science field. **Most master's degrees require a research-based thesis, for which the skills covered in this book are fundamental.** Those who pursue terminal degrees in social science, particularly doctoral degrees, will spend a significant portion of their professional lives engaged in research. In short, this book will speak to many different students at many different levels. We hope that you find this book helpful

to your current academic inquiry, but also that the **skills you learn from this book will stay with you for years to come.**

This chapter covers five fundamental topics essential to the research enterprise. First, we describe the traditional understanding of the research process. Second, this book focuses on both quantitative and qualitative approaches to social science research, and we discuss the basic distinction between the two methods of inquiry. Each approach is expanded upon in subsequent chapters (quantitative methods are covered in Chapters 3 through 6 and qualitative methods are covered in Chapters 7 through 10). Third, we discuss the purpose of and strategies for writing a research proposal. Planning out intentions for research prior to data collection is essential to ensuring quality. Fourth, we explore the issue of research ethics. This concept is often overlooked by the general public, but as a member of the research community it is incumbent upon you to become familiar with the ethical standards to which researchers must adhere. Finally, we introduce the elements of using a statistical-computing software package (SPSS). We will cover more advanced techniques in subsequent chapters. In this chapter we simply identify the preliminary techniques needed to get started with a research project.

THE RESEARCH PROCESS

The classic research-process model involves starting with a theory, generating hypotheses, testing the hypotheses, and interpreting your results. As Figure 1.1 illustrates, the research process is cyclical, not linear. The results of one study feed back into the system and inform future research. Researchers will tell you that the process is actually not that clear-cut. Often researchers will get an innovative idea about what to study and not be very informed about what theories might support it; however, after some initial investigations, they may go back and explore what other related research says.

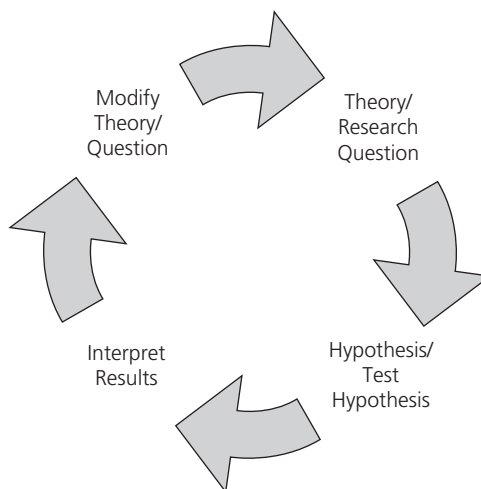


FIGURE 1.1. *Classic research process model*

For those just beginning in research, however, starting with theory and hypothesis generation is probably the most secure method for starting a research project. Having a good idea is important, but it is just as important to know how your idea fits in with other related ideas and research that has been done previously in the area. An idea that is not grounded in a previous theory is often not very useful to the larger research community.

Consider one practical example of the idea of starting with theory. **One dissertation advisor always gave students who had an interesting research idea the following suggestion: Go learn as much as you can about what other people have already done. Getting familiar with previous research begins the process of becoming an expert in the field and helps you figure out where your idea fits into the overall theory. It also allows you to make sure you are asking a question that is consistent with methods that others have used before.**

Theories and Research Questions

Theories are sets of organizing principles that help researchers describe and predict events. When non-scientists use the word *theory*, they are making a claim about the knowledge they have of a particular phenomenon. Non-scientific theories usually consist of a statement or set of statements that describe something, explain why something happens, and/or predict what will happen in the future. A scientific theory has the additional feature of allowing testable hypotheses to be generated from the theory. A scientific theory must have enough specificity and clarity for the theory to be testable.

Consider an example. One theory in the field of social psychology is the theory of cognitive dissonance, which states that when we feel tension between what we believe and what we do, we will justify our actions or change our beliefs to make our attitudes and beliefs consistent (Festinger, 1957; Myers, 2008). From this theory, a researcher can make predictions about what people will do when faced with conflict between what they do and what they believe. Theories gain support if experiments, surveys, or other techniques (discussed throughout this book) provide evidence that the theory is accurate. Thus, a theory in science will survive if the evidence supports it. The viability of theories is not based on popularity contests. Rather, if the collective research evidence supports a theory, the theory will survive. If the evidence does not support the theory, the theory fades from the collective scientific dialog (or perhaps gets modified).

Students commonly ask, "Where do theories come from?" Sometimes theories come from reading the existing literature in an area of interest (as discussed earlier). Sometimes theories come from our intuitions and observations. Perhaps you are a social worker with a full client load of pregnant teenagers. You notice that those young women who function better differ from those who struggle, and you come to believe that their better functioning is a result of social support from extended family. With this intuition, you can begin to develop a theory that social support positively influences pregnant teenagers.

Theories are tied closely to a research question, which is a clearly articulated statement about the topic of interest. Some research questions come from theory. Some come from observation. Some come from intuition. In terms of specificity, a research question rests in the middle between a theory, which is very broad, and a hypothesis, which is very precise. Asking a research question serves to narrow your focus on the topic of interest.

For example, you may be interested in the relationship between political beliefs and attitudes toward sexuality. Your theory might be that political beliefs inform sexual attitudes (or perhaps vice versa). Your research question, in turn, might be: “Is there a difference between people with socially conservative political beliefs and people with fiscally (money-related) conservative political beliefs with regard to attitudes toward sexuality?” The research question brings you one step closer to testing your theory. From this research question, you can construct a hypothesis to test.

Hypotheses

Whereas theories are general statements and research questions are mid-level statements, hypotheses (plural of hypothesis) are specific predictions about what will happen according to the theory. As we will learn throughout this book, a theory can be tested in several ways (which we will teach you in the book). In the preceding example of pregnant teenagers, the theory could be tested by constructing a questionnaire measuring the teens’ social support, interviewing the pregnant teenagers themselves, or interviewing the teens’ family and friends. The results of the investigation will confirm or refute the hypothesis that social support from extended family promotes healthy functioning in pregnant teens.

As another example, consider the cognitive dissonance theory discussed previously. A researcher might generate the hypothesis that when people are forced to act in a certain way, they will show more positive support for the attitude that aligns with the behavior. For example, cognitive dissonance theory would say that if you *force* someone to wear a seatbelt, eventually that person’s attitude toward wearing the seatbelt will become more positive. This hypothesis stems directly from the theory, but is phrased in terms that are specific enough to be tested. What distinguishes a theory from a hypothesis is that a theory is stated in general terms and a hypothesis is stated in a specific, testable form.

This proposed hypothesis, generated from cognitive dissonance theory, must be tested to determine if the evidence confirms or refutes it. Notice we say that evidence confirms or “supports” the hypothesis. The reason researchers say *support* (rather than *prove*) is because social science by its nature is a probabilistic endeavor. As you will learn in this book, we make research claims based on a belief that there is a high probability that we are correct. We never have 100% certainty in social science, but the more research studies that support a hypothesis, the more likely it is that the scientific community will accept the theory and hypothesis as true.

Even if researchers find support for a hypothesis in one research study, they are careful not to conclude that such findings will *always* occur. Thus, social scientists tend to avoid using the word *prove*. Rather, researchers express their findings in terms of probabilities: it is likely that the findings of a particular study are true, and therefore the hypothesis is supported. For example, Steinberg and Dornbusch (1991) hypothesized that teenagers who participated in for-pay employment would suffer negative consequences in other aspects of life. They collected data on adolescents’ work behavior and their social and academic functioning. The data supported their hypothesis: greater amount of paid work *was* related to lower grades, less participation in positive behaviors, and increased experimentation with drugs and alcohol. Because the hypothesis was supported with

empirical evidence, we can be confident that the relationship between adolescent work and negative adolescent behaviors probably exists and that the theory is true. However, unlike other disciplines, such as formal logic and many types of mathematics, which have hard-and-fast rules that apply in *all* cases, social scientists do not claim that findings from a particular study will hold true in all circumstances and contexts.

Such an approach may sound tentative, but it actually adds to the integrity of the research process. Social science researchers seek replication—demonstration of the same findings of a study in a different place or with a different group of people. That is, they hope to repeat their findings in their own research and that of other researchers who are exploring the same question. As evidence that confirms, disconfirms, or modifies the initial findings is discovered or collected, researchers shape their understanding of what they are studying.

This illustrates an important element of social science research, the fact that it is self-correcting. Just as ballots are counted on election night, scientific theories continue to be updated as more evidence is gathered from the field (research labs in the case of social science, voting precincts in the case of elections). Whereas elections eventually end, the self-correcting nature of research allows evidence to be gathered without a restriction on time. In science, the polls never close. This allows the scientific community to change its collective mind based on the evidence. **Through the integrity of researchers, an emphasis on replication of research findings, and reliance on independent verification from other researchers, researchers modify their theoretical claims in ways that most honestly, accurately, and fully account for the evidence.**

A good example of this self-correction comes from research in education and psychology on what motivates people. Research in the 1950s on operant conditioning illustrated the power of reinforcements in increasing desirable behavior and punishments in extinguishing undesirable behavior (Skinner, 1997). To this day, reinforcements are seen as powerful ways to motivate people. Tools such as increased pay, increased praise, and increased recognition are all ways in which teachers, employers, and athletic coaches motivate their staffs. Later research, however, demonstrated situations in which people were not motivated by reinforcements. For example, Lepper, Greene, and Nisbett (1973) asked children to play with toys in a laboratory. Randomly selected children were told that they would receive a reward for playing with the toys; these children actually played for less time with the toys than children who were *not* told that they would get a reward. The idea that children who anticipate a reward engage in the rewarded behavior *less* than those who do not get a reward for doing so is in direct conflict with the prediction from operant conditioning that rewards increase behavior. These researchers concluded that the reward actually served as an explanation for the children of *why* they were playing with the toy (that is, “I must play with this toy because I am getting a reward”), which served to decrease the children’s intrinsic motivation (engaging in a behavior for its own sake) for playing with the toy. Such modifications of previous research findings serve to delineate the boundaries of the theories being explored. In other words, does a certain theory explain behavior in all situations, or only under certain conditions? Operant conditioning can explain behavior under many circumstances, but not under the conditions set forth in the experiment by Lepper and his colleagues. This example illustrates that after a

theory is proposed, and a hypothesis is tested and supported, science always keeps the door open to modification of our existing understanding based on new evidence.

TYPES OF RESEARCH

Once a researcher understands the basic research model (described in the preceding section), he or she needs to choose an approach to investigate the topic of interest. Although this is a broad-brush distinction, most research is best understood as being either quantitative or qualitative in nature. In general, quantitative research specifies numerical assignment to the phenomena under study, whereas qualitative research produces narrative or textual descriptions of the phenomena under study. Although we describe each approach in detail in following chapters, it is helpful to outline the general advantages and disadvantages of both types at the outset. As you will see, the upsides and downsides of each approach are inverses of each other (Figure 1.2).

The advantage of quantitative research is that the findings from the sample under study will more accurately reflect the overall population from which the sample was drawn (more will be said about this in Chapter 2). For example, the Institute for Social Research at the University of Michigan conducts annual surveys of adolescent drug use (www.monitoringthefuture.org). In 2007, the Institute found that 16% of eighth-graders, 33% of tenth-graders, and 44% of twelfth-graders reported using alcohol at least once in the 30 days prior to being surveyed. This finding is based on reports from more than 40,000 teenagers. With such a large sample, we can be fairly confident that these figures accurately portray the status of adolescent alcohol use in America.

Characteristic	Quantitative Research	Qualitative Research
Type of data	Phenomena are described numerically	Phenomena are described in a narrative fashion
Analysis	Descriptive and inferential statistics	Identification of major themes
Scope of inquiry	Specific questions or hypotheses	Broad, thematic concerns
Primary advantage	Large sample, statistical validity, accurately reflects the population	Rich, in-depth, narrative description of sample
Primary disadvantage	Superficial understanding of participants' thoughts and feelings	Small sample, not generalizable to the population at large

FIGURE 1.2. *Quantitative versus Qualitative Research*

The disadvantage of the quantitative approach is that, because the study contains so many participants, the answers research participants are able to give do not have much depth. They have to be superficial, or else the researchers would be overwhelmed by information that cannot adequately be analyzed. In the University of Michigan study, we know what percentage of teenagers have used alcohol, tobacco, and other drugs, but we know very little else. Although the survey is interesting, consider a few questions the survey does *not* answer:

- Why do these teenagers drink?
- What are their thoughts and feelings while they drink?
- Do adolescents ever talk about alcohol use with their parents, and if so, what do they discuss?

These more narrative questions (and answers) could be very revealing, but are not easily handled with a quantitative study. As we will see throughout this book, each approach has its own advantages and disadvantages. Ideally, a two-pronged approach that employs both quantitative and qualitative techniques can be employed. However, practically speaking, limitations of resources and time often prohibit such an exhaustive endeavor. Therefore, it is best to match the particular research goal to the research strategy that will help achieve that goal. **If a large, accurate sample that will generalize to the larger population is desired, quantitative research would be preferred. If a detailed narrative account of a particular subgroup is desired, then qualitative research is recommended.** The goal of this book is to help you match method to problem. Throughout this book, we provide details on the advantages and disadvantages of each approach to help you better understand which method would be the best match for your research question.

If a researcher desires a more narrative understanding, then a qualitative strategy would be preferred. **The main advantage of qualitative research is that it provides a richer and more in-depth understanding of the population under study. Techniques such as interviews and focus groups allow the research participants to give very detailed and specific answers. For example, imagine that you are hired by a hospital to explore people's experience with holistic (also called alternative or complementary) medicine. In such a project, conducting a focus group with patients who suffer from chronic pain and asking them to respond to several questions would provide a rich description of these people's experiences. Questions might include what symptoms they have (for example, migraine headaches), what alternative treatment modalities they have tried, and what effects those treatments have had on their symptoms. The results of these interviews could produce an interesting narrative that would reveal insights into the benefits of holistic medicine that a quantitative study could not.**

The main disadvantage of qualitative research is that sample sizes are usually small and non-random, and therefore the findings may not generalize to the larger population from which the sample was drawn. Furthermore, the samples are often non-random, and thus the people who participate may not be similar to the larger population. In the preceding example regarding holistic-medicine use, you can imagine that most of the focus-group participants would praise or give anecdotal evidence of the benefits of holistic

medicine, but it would not be possible to know whether these few people are representative of others who were not interviewed. If the participants are more likely to suffer from chronic pain, it is also likely that they believe traditional medicine has been inadequate for them and therefore they are more likely to embrace alternative techniques.

Another distinction often made by professional researchers is between **basic research, an investigation that adds to the knowledge of a particular area of study, but may not have obvious and immediate applications to real-world settings; and applied research, an investigation that does have obvious and immediate applications.** Research that is done in laboratories or via computer simulation is most often basic research. Applied research more often takes place in real-life settings such as schools, hospitals, or nursing homes. Survey research (discussed in detail in Chapter 4) is often applied research, as it has immediate application regarding drug use, customer satisfaction, or whatever topic is being addressed in the survey.

Educational researchers make yet another distinction between traditional research and action research (Mills, 2003). Traditional research tries to describe, predict, and control the area being investigated. According to Mills, traditional research is conducted by professional researchers (for example, university professors) in controlled environments using mainly quantitative methods, with the goal of generalizing to the larger population. **Action research is conducted by educational practitioners, with the goal of improving the particular institution at which they work. Action research is conducted by teachers and principals with students in that school as participants. Action research has as its focus the improvement of the organization in which the research is being conducted.**

Below is the first Your Turn box. You will find several of these in each chapter. We offer these as homework problems, in a sense. We strongly encourage you to jot down the answers to the Your Turn exercises in your text or on a separate sheet of paper. We firmly believe that it will deepen your understanding of the material presented in this book.

YOUR TURN

Qualitative or Quantitative Research

For each of the settings listed below, describe in one or two sentences two interesting research topics that could be performed at that site. Select one research topic that could be studied using qualitative methods and one that could be studied using quantitative methods. Explain why a qualitative or quantitative study is appropriate for that problem. The sites are:

1. School playground
2. Hospital
3. Supermarket

RESEARCH PROPOSALS

Once a general strategy has been selected (either quantitative or qualitative), the next step is to describe in as much detail as possible the process by which the research will be completed. **The document that describes the planned research process is called a research proposal.** Research will be successful only when it is carefully planned. When the authors first started doing research for our master's theses and doctoral dissertations, we both found research proposals boring. **We now realize that research proposals are necessary to execute the project effectively, we require our students to prepare them in research methods classes, and we even view writing research proposals as enjoyable.** They are enjoyable because writing a research proposal allows you to mentally explore ways in which the study could be conducted. For those who like doing research, such mental exploration is invigorating.

Components of Research Proposals

A research proposal has several features. It should clearly explain why the study you are proposing is a vital component of discovery in the field. In other words, the proposal should make a compelling case as to why your study is the "next best" study to conduct. The proposal should also be very specific about methodology: the research participants you will study, what instruments or techniques you will use to study them, and how you will analyze the data collected. Finally, the proposal should answer the "so what" question: **Assuming the study goes forward, how will the findings from this study make a difference to other researchers (basic research study) or practitioners in the field (applied research study)?** By the end of the proposal, the reader should have a clear idea of how the study will be conducted and why it is important (Table 1.1). Your goal should be to make the reader as excited about reading the results of the research as you are about conducting the research.

Literature Reviews Almost all proposals require some review of previous research literature. The extent of the required review varies by the type of proposal. A doctoral dissertation will require a nearly exhaustive review of the relevant literature. A response to a request for proposals (RFP), which is a call from an organization for researchers to submit a plan to conduct research on a specific question unique to that organization, may not require much literature review at all. A grant application to a government agency or an undergraduate honors thesis would usually fall somewhere in the middle of these two extremes.

The literature review serves two purposes. First, it should convince the reader that the researcher is familiar with the literature and competent to conduct investigations. Second, it should convince the reader that the proposed study fits into the existing body of knowledge and explain how the proposed study is needed to fill a gap in the literature.

It is important to know your audience with respect to reviewing the literature. Organizations involved in the delivery of social services may only care that you are competent to conduct their specific study. For example, from 2001–2004, author VanderStoep conducted an evaluation for a church organization that was interested in determining the beneficial effects of its homelessness interventions. This proposal needed very little in the way of literature review. In fact, for very specialized research projects there may not be any existing literature. In contrast, if you are proposing your doctoral dissertation or

TABLE 1.1 Elements of a Good Proposal

Component	Possible Technique
Compelling reason why the study should be conducted	<p>Describe previous research and why it is incomplete. Explain why your study will fill in this gap in knowledge.</p> <p>Make it your goal to convince readers that yours is the next-best study.</p> <p>Present a sufficient literature review; this will depend on the study being proposed and the audience reading the proposal. The review should convince readers that the researcher is knowledgeable and that the study is needed to fill a gap in the existing literature.</p>
Specification of the methodology	<p>Identify the sample of participants you want to study.</p> <p>Describe the instruments or techniques you will use to observe these participants.</p> <p>Specify particular data analysis techniques that match the type of data you will obtain.</p>
Convincing argument for the reader that the outcomes of the study will be important	<p>Assume that the reader is skeptical—anticipate a “so what” question in response to your proposal.</p> <p>Tell pure researchers how your study will add to the body of knowledge.</p> <p>Tell applied researchers and practitioners why your findings will be important to those working in the field.</p> <p>Aim to get the reader as excited about the study as you are.</p>

master’s thesis, part of demonstrating your research competency is showing that you have read and understood the existing literature. Thus, a thorough literature review is advised. You should know more about your topic than anyone else on your thesis committee.

YOUR TURN

Literature Review

Lists of possible articles to read for a literature review can be built quite quickly using keyword searches of electronic databases. There are several social science databases. The most common are PsychINFO, EconLit, SocINDEX, and JStor.

Do a *keyword search* in each of these four databases using some combination of *two* of the following terms: *children, religion, poverty, family*. Did the searches in the four different databases yield different articles? What might explain the differences?

RESEARCH ETHICS

Research ethics deals with how we treat those who participate in our studies and how we handle the data after we collect them. Each discipline will have its own ethical guidelines regarding the treatment of human research participants. The general principles that we outline here largely cut across disciplinary boundaries. Many of the current ethical guidelines have their origins in the Belmont Report, a report prepared by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (A copy of this 1979 report is found on the National Institutes of Health website.) Prominent and leading organizations, such as the American Psychological Association, post their ethical guidelines on their websites and in printed materials (for example, Sales & Folkman, 2000). Regardless of your specific area of study, you will need to be familiar with ethical issues.

According to the Belmont Report, researchers must be concerned with three ethical issues:

- *Respect for Persons:* Researchers must recognize research participants as autonomous agents, and those who have diminished autonomy (for example, the young, the disabled) must be granted protection.
- *Beneficence:* Researchers will secure the well-being of participants by not harming them and, further, maximizing possible benefits and minimizing possible risk.
- *Justice:* There must be fairness in the distribution of benefits and possible risks across all research participants. The iniquitous Tuskegee experiments, in which research participants were infected with syphilis and subsequently not given treatment, is an example from the bad old days before ethical guidelines. That the research participants were poor, black men who were not informed of the nature of the study made this research endeavor particularly villainous and a clear violation of the justice guideline.

Institutional Review

Most colleges and universities have institutional review boards, often referred to as IRBs. These committees oversee research projects conducted on campus. Proposals must be approved by the IRB before data collection begins. Most committees require researchers to submit a thorough plan for data collection, a copy of the informed consent sheet you will give participants (see, for example, Exhibit 1.1), and a description or sample of any instruments you will administer to participants or stimuli to which they will be exposed. For research conducted with or on animals, there is often a separate committee for animal care, which usually consists of several professors, one off-campus member, an ethicist, and a veterinarian.

Although the preponderance of the burden for ethical conduct lies with the researcher, the participants also have an implicit ethical obligation to be honest as they answer questions and to avoid sabotaging the research process. For example, completing a paper-and-pencil survey by filling in random survey bubbles or by answering the opposite of one's true feelings is also an ethical violation. Unfortunately, there is little a researcher can do

CHAPTER

2

THE WHO, HOW, AND WHY OF RESEARCH

LEARNING OBJECTIVES

- Understand various sampling procedures and be able to match a sampling strategy to a particular research question.
- Understand various research strategies and research designs, and be able to match a strategy and design to a particular research question.
- Identify the purpose of a particular research study with respect to its contribution to the scientific enterprise or to the solution of a unique problem.

From 1999 to 2004, when I (author VanderStoep) was the director of a college's social science research center, I met with more than 20 organizations a year to discuss possible research projects. My standard approach in that first meeting was to ask three questions:

- *Who should you study?*
- *How should you study them?*
- *Why should you conduct the research?*

This chapter focuses on these three questions, which we consider foundational to any good research project. This chapter explores a variety of approaches to answering these questions. One lesson you will learn from this chapter (and this book in general) is that there is seldom only one answer to a question in social research methodology. Rather, each approach or technique carries with it costs and benefits; the best methodology is the

one that maximizes benefits and minimizes costs for that particular project. With respect to sampling, this means trying to select participants who are best suited for your study and will allow you most effectively to accomplish your research goal. Often the goal is to obtain a representative sample—a group that is similar to a larger population. **If your goal is to get a representative sample of a population, a random sample is probably best. If your goal is to know as much as you can about a particular organization or subgroup, in-depth interviews of a non-random sample will be the best approach.**

In this chapter we discuss a variety of strategies for generating a sample, collecting data, and designing a study. However, one important lesson in this chapter (and several other chapters in this book) is that **there is no one perfect research methodology. Each strategy has advantages and disadvantages. The goal of researchers is to select the strategy that maximizes the benefits and minimizes the costs of their particular research approach.** We first address how to gather people who are willing to participate in a research study.

WHO: SELECTING A SAMPLE

Researchers make the distinction between a population, the universe of people to which the study could be generalized, and a sample, the subset of people from the population who will participate in the current study. **The sampling frame refers to the eligible members of the population.** For example, suppose you are interested in surveying citizens of McCracken County, Kentucky. The estimated 65,514 county residents make up the population, a randomly selected list of those residents (we discuss later in the chapter how to obtain or generate such a list) makes up the sampling frame, and the residents who actually complete the survey make up your sample. Because some people will choose not to participate or will not be available when the researchers try to contact them, the sampling frame must be bigger than the sample.

Why Is Sampling Important?

Sampling is important because, in almost all cases, it is not practical to study all the members of a population. The rare exception is small populations, such as the U.S. House of Representatives, the U.S. Senate, or perhaps a very small town or village. For example, Settlers Township of Sioux County, Iowa, has a population of 131, so we might be able to collect data from the whole population if we used the right methodology. In most instances, though, we do not—and cannot—sample the whole population. In some studies the researchers would like to make some claim about generalizability—that is, how much, how well, or how closely the findings from the current sample apply to the entire population. However, differences exist regarding the extent to which a study is generalizable. Researchers who are mostly concerned about evaluating the effectiveness of a particular program might not worry much about whether the findings are generalizable to people who are not in the program. For example, a school principal who surveys the parents of her students is probably not concerned about whether those parents' beliefs generalize to (are common to) parents of children in other schools or districts. In contrast, a hospital that is conducting a community-wide citizen survey measuring health behaviors and attitudes would be very interested in having its findings generalize to the population as a whole. One of the hospital's goals might be to develop a health "report card" that will help it connect

with all of the people in its service area. Given this organizational goal, it would be **important to know how research findings generalize beyond the sample in the current study.**

In general, there are two ways to select members for a study: randomly or non-randomly. A random sample, sometimes called a *probabilistic sample*, is a sample in which each member of the sampling frame has an equal chance of being selected as a study participant. A non-random sample is a sample in which each member of the sampling frame does not have an equal chance of being selected as a participant in the study. We discuss each of these approaches in the following sections.

Non-Random Sampling

In non-random sampling, participants are selected based on characteristics they possess or their availability to participate. Therefore, each population member is not equally likely to be selected to participate. Imagine a jar containing 60% white marbles and 40% blue marbles; random sampling (discussed below) would maintain the same percentages in the sample over a long period of time. A non-random sample does not use this probabilistic aspect of selection. Instead, non-random samples are collected in one of two ways.

Convenience Sampling Convenience sampling involves selecting people for your research who are available (or convenient) for study. Selecting people simply because they are available is clearly not a random sample, as not all people in the population have an equal chance of being selected. Convenience samples often involve people whom the researcher knows or people who live close to the research site. The advantage of convenience sampling is the ease with which participants can be recruited. Placing an ad in the paper or posting flyers in neighborhoods are two ways to recruit convenience samples. The disadvantage, as with all non-random sampling techniques, is the lack of representativeness of the general population. For example, researchers may select people who live or work near a major university where the researcher is employed. Such people may possess different characteristics than the population to which the researcher would like to generalize, and therefore the results from this sample may not generalize well to the larger population.

Snowball Sampling In snowball sampling, a core group of participants is initially sampled for the research project. These participants are then asked to identify others who might be eligible to participate. This second generation of participants is then contacted. These people, in turn, identify other participants. The sample, like a rolling snowball, begins to build on itself and increase in size. One advantage of snowball sampling is the ability to grow a network of participants by taking advantage of your relationship with the current participants. This is helpful for hard-to-reach groups such as those who are marginalized by society (for example, the homeless). Another related advantage of snowball sampling is that it allows the researcher to focus on people who have particular characteristics of interest to the project. To conduct a large-scale study on certain low-base-rate topics would be very expensive, because the number of people in the general population who have the characteristic you are studying is quite small. For example, suppose that you are interested in studying the psychological effects of chronic pain. You could start by contacting chronic pain clinics and asking for volunteers. Using this initial list, you invite these people to share names of others they know who have or had similar medical concerns. This is more efficient than simply taking a random sample of people and selecting only those who have chronic

Solving the problem of non-response bias is difficult. One strategy is to perform aggressive follow-up data collection, as Lahaut and others did by making house visits to non-respondents. Other strategies for solving this problem involve complex statistical corrections. One example is to check the demographic makeup of your respondees to make sure you are getting good representation for variables such as gender, race, and age. For example, if a researcher finds that there are fewer African American males in the sample than in the population, then the researcher can “add” more African American responses to the dataset by statistical weighting of the African American males who did respond. Statistical weighting involves overcounting the returned surveys of the underrepresented group. For example, if a researcher received only half as many surveys as desired returned from African American males, then each of the returned surveys from this group would be counted two times ($100\% \div 50\% = 2$). If the sample represented only 80% of the population, then each returned survey from this group would be counted 1.25 times ($100\% \div 80\% = 1.25$).

Stratified Random Sampling Stratified random sampling involves selecting research participants based on their membership in a particular subgroup or stratum. The technique allows the sample to look more like the population in terms of mirroring the different subgroups. Unlike simple random sampling, stratified random sampling involves selecting research participants based on their membership in a stratum. Dividing the sampling frame into strata (plural of stratum) allows the researcher to sample people proportionately based on the size of each stratum. For example, according to the 2000 census, 3,694,820 people live in the city of Los Angeles and 1,719,073 (46.5%) are Hispanic or Latino. In a stratified sample of 1,000 city residents, researchers would make sure that 465 of the 1,000 sample residents were Hispanic/Latino. Stratified sampling improves the accuracy of the sample because it ensures that any differences between the strata are controlled by making sure that each stratum is proportionately represented. Imagine a presidential poll that sampled a larger number of voters from large cities than are actually represented in the population. If big-city voters usually vote Democratic and rural voters usually vote Republican, the sample would not accurately reflect the population, and would overestimate the support for the Democratic candidate. **Stratified sampling is one tool to reduce selection bias—unintentional yet systematic differences between the people in the sample and the people in the population.** If one group is either overrepresented or underrepresented in a sample, selection bias has occurred. If this group differs on the variable of importance, the sample will not accurately reflect the larger population.

Systematic Sampling In systematic sampling, a researcher moves through the sampling frame list and selects one out of every fixed number of entries. For example, if a phone survey needs 400 respondents out of 10,000 people from a phone book or purchased calling list, then in systematic sampling the researcher will pick every 25th person (4% of 10,000 is 400). This is a form of random sampling, but because selection is based on where one is in the list, not everyone has an equal chance of inclusion. For example, if we randomly decide to start at the 10th person on the list, then the 11th through 34th people will not be included, even though selection *began* with a random process. Exhibit 2.1 provides practice in systematic sampling.

In this study of school bullies, the researchers did not create or monitor any independent variables. Rather, they simply noted the behavior of the children on the playground and constructed measures related to bullying and subsequent intervention. In general, when deciding between experimental research and descriptive research, one must choose between the benefit of control in experimental studies versus the benefit of realism in field studies. Chapter 4 describes strategies for descriptive research and Chapter 5 describes strategies for experimental research in greater detail.

In terms of control, a quasi-experiment falls somewhere between naturalistic observation and experimental research. A quasi-experiment involves conducting an experiment, usually in a real-life setting, without the benefit of random assignment of participants to conditions or other controls. Because quasi-experiments are usually done in real-life settings rather than in laboratory settings, they are often considered not truly experimental research, but rather correlational research, which involves identifying statistical relationships between two variables rather than causal relationships. Thus, while the researchers have control over the independent variable in a quasi-experiment, they do not have control over other factors in the environment. An example of a quasi-experiment is a study on the effects of noise on female residence halls conducted by Cheuk Ng (2000). The independent variable in this study was how close dorm residents lived to a noisy construction site. The results of the study showed that those living closer to the noise had higher rates of sleeplessness, speaking louder, and keeping windows closed. A quasi-experiment involves some control in that the independent variable is monitored by the researcher. However, it occurs in a naturalistic setting and the experimenter may not have control over when the independent variable occurs. In this way, a quasi-experiment falls between an experimental study and a naturalistic observation. Chapter 6 describes quasi-experimental designs in detail.

Survey Research

Surveys provide the advantage of sampling a large group of randomly selected people to measure their attitudes and behaviors. For a relatively low cost in time and money, a researcher can collect self-reported attitudes and behaviors about virtually any social issue. Furthermore, with the data analysis training provided in this book or in a more comprehensive data analysis class, even undergraduate students can download survey data or perform analyses right at the websites of major survey organizations, such as the University of Michigan's Institute for Social Research, the National Opinion Research Center, or the U.S. Census Bureau. This means that researchers may not need to collect original survey data; rather, they can perform secondary data analyses—data analysis on previously collected data—as part of their investigations. If researchers do indeed construct and administer their own surveys, they have several options for administering them. Like most decisions regarding research designs, each option has both advantages and disadvantages. We describe these options in detail in Chapter 4.

Researchers who design and administer their own surveys should use the techniques for randomly selecting participants described earlier in this chapter. After a sample has been selected, the researcher must make a decision about how to gather the data. The most common survey methods are telephone surveys, mail surveys, email surveys, and

face-to-face interviews. Telephone surveys produce a relatively high response rate, but there is some risk of selection bias regarding those without land lines or those who have caller ID and screen calls. Mail surveys are inexpensive and efficient, but are even more likely to suffer from low response rates or non-response bias than phone surveys. Email surveys are even less expensive, but have a sampling bias toward those with greater computer access. Face-to-face interviews produce the highest response rates, but are the costliest in money and researchers' time. As with most decisions regarding research, each technique has advantages and disadvantages. In Chapter 4 we provide more details about the administration of these different techniques.

In field research and in survey research, most investigations involve studying correlations. A correlation is a statistical measure of association between two variables. The measure of association that is used to assess the association between variables is called the correlation coefficient. A correlation coefficient has both a direction and a magnitude. The direction can either be *positive* or *negative*. A positive correlation indicates that high scores on one variable co-occur with high scores on another variable in the study. An example is the relationship between shoe size and height. In general, people who wear large shoes tend to be taller, and those who wear small shoes tend to be shorter. A negative correlation indicates that high scores on one measure co-occur with low scores on another variable in the study. For example, Christine Smith and Irene Frieze (2003) sought to develop a scale that would measure rape empathy—understanding of the perspective of a victim of sexual assault. They developed an 18-question scale, and found a negative relationship between participants' scores on victim empathy and beliefs about victim responsibility. In other words, participants who were high on victim empathy tended to believe that a victim was *not* responsible for the crime. Throughout this book, we make frequent references to positive and negative correlations, and in Chapter 4 we show you how to compute the numerical values of correlation coefficients.

Types of Designs

Now that we have answered the first part of the *how* question—the type of study design—we are now ready to answer the second question: the frequency of data collection. Whereas the first question concerns the settings for data collection, this section talks about the different setups available for data collection.

One-Shot Design The most common research design is the one-shot design—one group of participants is studied only one time. This can be done with surveys, experiments, or field studies. An example of a one-shot longitudinal study, conducted by Mary Inman and colleagues (Inman, McDonald, & Ruch, 2004), asked participants to complete a creativity test; participants then were given one of three randomly assigned feedbacks about their creativity. In other words, the independent variable was type of feedback, and it had three levels. One-third of the participants were in the *failure condition* and were told:

The test revealed that you consistently gave uncreative answers. That is, in terms of other college students who have taken this test, your score fell in the 20th percentile on the scale (where low scores = very uncreative, high scores = very creative).... [Y]our

more about this topic. A second way in which basic researchers justify basic research is by contributing to the larger body of research knowledge. In our roles as professors, we have reviewed hundreds of undergraduate research papers. Many of them are potentially intriguing stand-alone investigations. However, most of these proposed studies do not fit into a larger theoretical framework through which other researchers can better understand the topic under investigation. In other words, these studies fail to answer the question “who cares?” One way to help answer that question is to read the previous literature more carefully. **The findings of a current study must be interpreted in light of those previous findings, and the present study should suggest directions for future research.**

The lesson is this: This problem can be avoided if you first ask yourself the question that a reviewer will ask: “Why should I be interested in this topic?” If you cannot think of a good theoretical or practical answer to this question, the study is not worth doing.

Applied Research: Inform Policy and Planning

Applied researchers (see Chapter 1), especially those doing research for specific organizations, ask a slightly different “who cares” question. An organization must be sure, prior to conducting or commissioning the research, that the results will be important to the organization. The best research actually helps to solve a real-life problem. Far too often the results of these studies go largely unused by organizations. When I (author VanderStoep) was the director of a social research center, one way I would help organizations solve this problem was to have specific organizations respond to the following scenario(s):

Imagine that the study turned out exactly how you expected it. In other words, the results were as you intuitively believed they would be (call this Outcome A). Now imagine that the study turns out exactly the opposite of what you expected. In a phone survey, for example, the subgroup of people you thought would strongly agree with certain survey questions in fact strongly disagreed, and vice versa (call this Outcome B). Given these two potential outcomes of the study, how would the organization respond differently to Outcome A than to Outcome B?

If the members of the organization cannot articulate how organizational decision making would be different under Outcome A than under Outcome B, chances are the organization will not be well served by conducting a research study. Rather, the organization should do some more planning about its mission and vision first. Then, when they feel like they have developed their strategic thinking enough to benefit from a research study, the leaders should revisit the possibility of conducting a research study. The lesson for applied researchers is this: Sometimes the best research study is the one that is delayed. Research is costly and time-consuming, so the decision to conduct research should be made cautiously.



SUMMARY

Selecting a sample (who), deciding on a data-collection and research-design strategy (how), and knowing why the proposed study will be important (why) provide the essential foundation for moving forward with any research project. If you have learned one

thing from this chapter, we hope it is this: There are many research options, and none of them is perfect. Each decision about research strategy brings with it both advantages and disadvantages. The task of the researcher is to identify which technique will maximize the advantages and minimize the disadvantages for the particular research problem and target population.

We are now ready to move forward to discuss the details of quantitative and qualitative designs. We begin with quantitative strategies. The next four chapters describe how to conduct various quantitative studies and potential advantages and disadvantages of these studies.

KEY TERMS

attrition
cluster sampling
cohort effects
convenience sampling
correlation
correlation coefficient
correlational research
cross-sectional design
dependent variable
descriptive research
generalizability
independent variable
longitudinal design
margin of error
naturalistic observation
non-random sample
one-shot design

population
quasi-experiment
random sample
repeated independent samples design
representative sample
response bias
sample
sampling frame
secondary data analyses
selection bias
simple random sampling
snowball sampling
statistical weighting
stratified random sampling
stratum
systematic sampling