

Research Designs

CHAPTER

7

What You Should Know!

A conscious effort is required to conduct research and to use the most appropriate design. A multitude of methods are available to conduct research, and the method chosen by any researcher may be reflective of a style he or she is most comfortable with, believes will provide the best results, or selects based on the research question. This chapter examines the various designs from which researchers can choose. After completing this chapter, the reader should be able to:

1. Discuss the issues to consider in selecting a research design.
2. Describe how a historical research design is conducted.
3. Explain how a descriptive research design is conducted.
4. Compare and contrast cross-sectional and longitudinal research designs.
5. Discuss the various types of longitudinal research design, including trend, cohort, and panel.
6. Describe how a case study research design is conducted.
7. Describe correlational and causal-comparative studies.
8. Discuss evaluation research.

Research Designs

To complete any type of research successfully, it is important to establish a feasible plan or blueprint, known as a *research design*. This plan primarily responds to the common five Ws (who, what, where, when, and why) and

H (how) of investigation. Because criminal justice and criminological researchers have a choice of research designs, it is important to be able to match the design properly to the desired outcomes. In selecting a research design, a number of issues should be considered. Creating an outline is recommended to ensure that all relevant issues have been considered. Box 7-1 is an example of such an outline.

Box 7-1**Issues to Consider in Selecting a Research Design****Purpose of research**

Identify the purpose of the research project, which should be clearly indicative of what will be studied.

Prior research

Review similar or relevant research. This review promotes knowledge of the literature.

Theoretical orientation

Describe the theoretical framework on which the research is based.

Concept definition

List the various concepts that have been developed and clarify their meanings.

Research hypotheses

Develop the various hypotheses that will be evaluated in the research.

Unit of analysis

Describe the particular objects, individuals, or entities that are being studied as elements of the population.

Data collection techniques

Determine how the data are to be collected, who will collect it, who will be studied, and how will it be done?

Sampling procedures

Specify sample type, sample size, and procedures to be used.

Instruments used

Describe the nature of the measurement instrument or data collection device to be used.

Analytic techniques

Determine how the data will be processed and examined. What specific statistical procedures will be used?

Time frame

Pinpoint the period of time covered by the study. This will include the time period examined by research questions and the amount of time spent in preparation, data collection, data analysis, and presentation.

Ethical issues

Address any concerns as to the potential harm that might occur to participants. Also deal with any potential biases or conflicts of interest that could affect the study.

FROM THE REAL WORLD

The Bureau of Justice Statistics produced the report *Homicide Trends in the United States, 1980–2008*. This report describes homicide patterns and trends based on the Federal Bureau of Investigation's Supplementary Homicide Report. Information is provided on victim and offender demographic characteristics (age, race, gender), victim/offender relationships (intimate, family, infants, elders), circumstances (felony, sex related, drug related, gang related, argument, workplace), weapon involvement (gun, arson, poison), and homicides with multiple victims and/or offenders.

Descriptive Research Design

A descriptive research design focuses on the description of facts and characteristics of a given population, issue, policy, or any given area of interest in a systematic and accurate manner. The descriptive research design focuses on answering the “what” question in research design, but it cannot provide an answer to the question of “why” a phenomenon is occurring. The information obtained in descriptive studies can provide insights not recognized in prior research and provide the basis for additional studies focused on explanation. For example, studies reporting police patrol trends and crime rates may provide the basis for a study to examine the impact of police patrol patterns on crime rates.

Historical Research Design

The historical design is the study of actions, events, and phenomena that have already occurred (Berg, 2008; Creswell, 2008; Givens, 2008). This design allows the researcher to systematically and objectively reconstruct the past through the collection, evaluation, verification, and synthesis of existing documenting information to test a hypothesis. It can assist in determining why or how an event occurred and whether such an event could happen again. A historical research design is also a means by which researchers may compare and contrast events or phenomenon that have occurred.

There are many sources of existing information, including text-based information, visual and auditory information, and secondary data. Text-based existing information may include news reports, public records, or even private diaries. Often one thinks of text-based information as the basis of historical research designs; however, pictures or maps as well as audio and visual recordings can provide useful information. A researcher may use crime rate maps to examine the impact of the opening or closing of businesses on crime over time. Or, photographs and audiovisual clips could be used to examine the impact of propaganda on the treatment of disadvantaged groups during times of conflict.

Another source of existing information is secondary data, which is the data that has already been collected for another purpose. Secondary data is used extensively in criminal justice and criminological research. Researchers may collect data for their own studies and then make that data available through repositories, such as the Inter-university Consortium for Political and Social Research (ICPSR). Government agencies also collect a considerable amount of information for management and evaluation purposes. Recidivism, the recurrence of criminal behavior, is an important issue in criminal justice research and can be measured using records from correctional and court agencies.

One of the most debated topics in criminal justice and criminology is the deterrent effect of capital punishment. A common hypothesis for capital punishment supporters is that the death penalty serves as a better deterrent against committing homicides than life imprisonment. To study this hypothesis a historical research design is appropriate and, for example, could include a study of homicide rates in the United States between 1950 and 1997. Although just studying the numbers might provide an interesting conclusion, the true historical research design study requires inclusion of possible influencing factors, such as U.S. Supreme Court decisions, sentencing patterns, social episodes (e.g., a war), and population growth. A successful historical study considers all relevant information to provide proper conclusions.

The historical design is an economically efficient means for conducting research. Considering the vast array of records available related to criminal justice, there is no shortage of possible research topics. A shortcoming of this design is the difficulty of expanding beyond what is documented, therefore limiting the scope of the research. Researchers are limited to the information in the files and seldom have means to follow up or get clarification of the available information. In addition, there is the old computer maxim of "garbage in, garbage out." The research is only as good as the data that is contained in the

FROM THE REAL WORLD

To determine the impact on recidivism of matching youth with services consistent with the clinical recommendations that they had received, Vieira, Skilling, and Peterson-Badali (2009) conducted a study in which data were collected and compiled from a variety of secondary data sources. These sources included clinical charts; participants' court reports; each youth's scores on a risk and need measure (Youth Level of Service/Case Management Inventory); probation notes; parent and mental health service reports; and school records, probation files, and court records. The researchers found that having only a few of the recommended services was associated with an increase in the number of new convictions and a decrease in the amount of time until recidivating.

records. If there is inaccurate information or missing data in the original source material, the research suffers.

Both descriptive and historical research designs can be cost-effective and logistically easier to conduct than other designs. However, they present researchers with limitations as to what variables can be examined and the extent of the information available. They may also be more 'time sensitive', which means that data may only be available for a certain time frame and the information obtained may be limited in its usefulness.

Cross-Sectional Research Design

The primary concept of the cross-sectional research design is that it allows for the study of a phenomenon at one point in time. These studies are best suited for exploratory or descriptive research but can be used in explanatory research by attempting to study the association between variables. Cross-sectional studies provide a snapshot of the phenomenon and do so by examining the relationship between variables at one point in time. For example, Violanti et al. (2009) examined whether suicide ideation, planning suicide, and suicide attempts were more likely to occur among police officers because of their exposure to suicides. For their study they did a cross-sectional study involving 115 randomly selected police officers from a mid-sized urban police department of 930 officers. One drawback to the cross-sectional study design is that it is difficult (or even impossible) to determine time order of the independent and dependent variables, which is an issue addressed in longitudinal research design.

Longitudinal (or Time Series) Research Design

Perhaps a police agency is interested in following the activities of members from a rookie police class from graduation through their first 5 years of service. They may

FROM THE REAL WORLD

In a study of binge drinking among college students, Wechsler et al. (1994) surveyed a total of 17,592 students at 140 colleges in the United States regarding binge drinking and the consequences of the reported drinking behavior at one point in time, such as being hungover, doing something that you regretted, missing classes, forgetting what happened, getting behind in school work, arguing with friends, engaging in unplanned sexual activity, not using protection during sex, getting injured, damaging property, getting into legal trouble, and needing medical treatment for an alcohol overdose. Binge drinking was defined as having four or more drinks in a row for women and five or more drinks in a row for men. According to students (44 percent) reported at least one instance

be primarily interested in the turnover rate, promotions, occurrence of injuries, accommodations and complaints, and levels of job satisfaction. The best research design for this type of study is longitudinal, or time series. This type of research design allows for the investigation of specifically identified patterns and events, growth, or change by collecting data at two or more distinctive time periods. It also allows for determining the time order of the independent and dependent variable, which the cross-sectional research design struggles to accomplish, and is therefore particularly suited for explanatory research as well as exploratory and descriptive research. This type of research can be costly and time-consuming; thus cross-sectional research design is used more often. Examples of longitudinal research designs include trend studies, cohort studies, and panel studies.

Trend Research Design

Trend research design examines changes in a general population over time. For example, data is collected for the census every 10 years from all individuals residing in the United States. One might compare results from several census studies to determine what demographic changes have occurred in that population, such as employment or income changes. Another example is the General Social Survey, which annually surveys a sample representative of the adult population in the United States. Surveys might indicate that opinions on the death penalty fluctuate over time depending on social conditions not related to crime or changes in the incidences of murder or the occasional occurrences of sensational murders.

Cohort Research Design

Cohort research design involves studies that focus on the changes occurring in specific subpopulations over time, such as age groupings. This research design is highly flexible and could be used to examine social, political, or economic changes or have a more specific focus. For example, a cohort research design may be used to examine the one-year recidivism rates of inmates released from a state facility during 2010.

In a famous criminological study, Wolfgang, Figlio, and Sellin (1972) examined delinquency among a cohort of juveniles, specifically males born in 1945, who were living in Philadelphia, Pennsylvania, on their 10th birthday. The researchers were particularly interested in the age that delinquent behavior began as well as when delinquent behavior stopped for this cohort. The findings from this study significantly impacted future research and practice in juvenile justice. In addition to primary data, many cohort studies use secondary data, making it cost effective.

Panel Research Design

Panel research design studies the same set of people at two or more distinct points in time. Unlike the cohort studies, these subjects may not have a single

FROM THE REAL WORLD

Hunter and Wood (1994) were interested in the relationship between severity of sanction and unarmed assaults on police officers. They obtained assault data on officers for all 50 states. They compared these data with the sanctions applied for unarmed assaults on police officers within each respective state during 1991. They then compared the rates in states that had felony sanctions for weaponless assault on police officers to their neighboring states from 1977 through 1991. This strategy resulted in the longitudinal analysis of four groups of states. Analysis of results in these groupings did not reveal support for the hypothesis that more sanctions would decrease the incidence of weaponless assaults on police officers.

unifying characteristic, such as an age cohort. By using the same individuals, couples, groups, and so forth, researchers are able to more precisely examine the extent of changes and the events that influenced them. However, due to attrition because of the effects of deaths, movements from the area, refusal to continue as subjects, and other factors that cause the sample to lose members, these studies are logistically difficult to continue over an extended period of time. For example, the National Crime Victimization Survey interviews a member of a selected household every six months.

Case Study Research Design

The case study research design allows for the intensive study of a given issue, policy, or community in its social context at one point in time even though that period may span months or even years (Adler & Clark, 2007). It also may be used to study specific individuals or groups. The case study research design includes close scrutiny of the background, current status, and relationships or

FROM THE REAL WORLD

The National Longitudinal Survey of Youth 1997 (NLSY97) is a panel study of a nationally representative sample of youth who were 12 to 16 years old as of December 31, 1996. The first NLSY97 survey of the youth and the youth's parent took place in 1997, and the panel members continue to be surveyed on an annual basis, with the most recent survey occurring in 2013. The study is focused on entry into the workplace but contains a considerable number of criminal justice variables.

interactions of the topic under study. Case study research design often focuses on a specific phenomenon, such as community policing.

Case studies may be longitudinal in that they sometimes observe a case or cases over a certain length of time. These observations are closely linked with the observing of potential independent variables that may be associated with changes in the dependent variables. There are three basic features to this design (Dunn, 2009; Hagan, 2006; Maxfield & Babbie, 2009): (1) qualitative or quantitative descriptions of a variable over the extended period of time, (2) a context wherein the researcher can observe changes in the variables, and (3) the potential for developing measurement instruments and the testing of their reliability over time.

Case study research designs are not limited as to what can be studied and are particularly useful in exploratory research. However, they can be costly and time prohibitive and may not provide an explanation for the results. If one wants to know why something is or has occurred and possible correlating factors, then a correlational design may be more appropriate.

Determining Correlations and Causations

Research often has the goal of determining that there is a causal relationship between two variables (causal-comparative research) or at the very least an

FROM THE REAL WORLD

Chappell's (2009) abstract states the following:

Community policing is the operating philosophy of the majority of American police departments in the new millennium. Though most departments claim to engage in community policing, research has shown that implementation of the strategy is uneven. One way to investigate the implementation of community policing is to study patrol officer attitudes toward community policing because prior research has shown that attitudes are related to behavior. The present study used qualitative data in a case study research design to explore the extent to which patrol officers have endorsed and implemented community policing in one medium-sized agency in Florida. Furthermore, the research sought to gain insight into the organizational barriers that prevented officers from adopting community policing in their daily work. Results indicated that although most officers agreed with the philosophy of community policing, significant barriers, such as lack of resources, prevented its full implementation in this agency. Implications of the findings and directions for future research are discussed. (p. 5)

association (correlational research). The selected research design will determine the ability to determine causation or correlation. Most studies are trying to determine correlation between two variables.

Correlational Research

A popular research design is one that allows researchers to investigate how one factor may affect or influence another factor, or how the one factor correlates with another—the correlational design. In particular, this type of design focuses on how variations of one variable correspond with variations of other variables. An example is a study of the level of education of police officers and promotion rates, arrest rates, or job satisfaction. The goal of this research design is to obtain correlational coefficients that are statistically significant (discussed in a later chapter). For example, a cross-sectional study examining the association between drug use and academic performance is a correlational research design, but its design does not allow for the determination of a causal relationship.

Causal-Comparative Research

Why do men rape? Why do teenagers turn to gangs? Why do individuals become serial killers? To answer these types of questions, a causal-comparative (or *ex post facto*) design is useful. This design allows the researcher to examine relationships from a cause-and-effect perspective, which is done through the observation of an existing outcome or consequence and searching back through the data for plausible causal factors. The criteria to determine causality is often not met outside of the experimental research designs. Of the previously discussed causal criteria, being able to account for the impact of an external variable is particularly problematic. Thus, causal-comparative research is less common than correlational research.

FROM THE REAL WORLD

Adding to the literature on whether gang membership is uniquely related to victimization experiences for females compared to males, Gover, Jennings, and Tewksbury (2009) produced a correlational study in which they examined the relationship between gender, gang membership, and three types of victimization. They used data from the 1999 South Carolina Youth Risk Behavior Survey, an ongoing state and national survey conducted by state contracts for the Centers for Disease Control and Prevention, Division on Adolescent and School Health. Their results indicate gang membership is significantly related to the risk of victimization regardless of gender.

FROM THE REAL WORLD

Stevens's (1999) study of the relationship between drug addiction and criminal activity among incarcerated women who were in a prison drug rehabilitation program could be viewed as a causal-comparative design. This study addressed the belief that drug addiction gave rise to criminality among females. Yet the results of the data did not support this belief. One implication of this finding was that drug addiction in itself is not necessarily a causal factor for producing crimes of violence, especially among females.

Evaluation Research

To this point, almost all the research designs discussed are used after an event, situation, or other unexplained phenomenon occurs and one wants to understand it better. These designs are quite useful to academic researchers as well as practitioners. A practitioner may want to know how something will work or what might occur when something not previously done is attempted. Evaluation research is particularly important if managers or administrators want to make sweeping policy implications. To gain support for these types of changes, the managers or administrators would have to demonstrate that the changes would have the desired impact.

Evaluation research can assist in the development of new skills or approaches. It also aids in the solving of problems with direct implications for the "real world." This type of research typically has a quasi-experimental research design. For example, a police agency is debating whether to add a nonlethal weapon, a stun gun, to what is available to its officers. To see how stun guns might be used and what outcomes might result from their use, an evaluation research design would use a select group of officers who are issued stun guns for a set period of time. Each time the weapon is used, a report explaining the reason and results must be filed. At the end of the data collection period, the reports are analyzed; depending on the results, stun guns would be issued to all officers or certain officers, or the recommendation might be not to issue these weapons at all.

Evaluation research is important for the criminal justice practitioner-researcher because it assesses the merits of programs or policies being used (or under consideration for use) in the field. Whereas more basic research seeks to develop theoretical insights and much applied research seeks to determine if a theory can actually be applied in the field, evaluation research allows practitioners to determine the costs and effectiveness of the program

FROM THE REAL WORLD

To investigate the effectiveness of Thinking for a Change, a widely used cognitive behavioral curriculum for offenders, Lowenkamp, Hubbard, Makarios, and Latessa (2009) evaluated the impact of the program using a group of felony offenders placed on probation. The experimental group consisted of probationers who were referred directly to the program from court, and the comparison group included probationers who were not referred to the program. The results of the study found that the offenders who participated in the program had a significantly lower recidivism rate than similar offenders who had not been in the program.

or project that is being or has been implemented. For this reason, evaluation research that studies existing programs is frequently referred to as *program evaluation*.

Summary

Selecting a topic and creating the research question are just the beginning of conducting research. One of the most important steps is choosing an appropriate research design. Although one of the most popular designs is survey research, which is also a means of collecting data in the other designs, other possible methods include:

Descriptive—describing the facts and characteristics of a given population, issue, policy, or any given area of interest in a systematic and accurate manner.

Historical—studying actions, events, and phenomena that have already occurred to systematically and objectively reconstruct the past to test a hypothesis.

Cross-sectional—studying the issue of phenomenon at one point in time.

Longitudinal—investigating patterns and sequences of growth or change as a function of time, including trend, cohort, and panel studies.

Case study—studying intensively the background, current status, and environmental interactions of a given social unit, such as individual, group, institution, or community.

The researcher must clearly understand what compromises exist in the internal and external validity of his or her design and proceed within these limitations. The chosen design should best meet the needs of the research goals.