Course Learning Outcomes for Unit II

Upon completion of this unit, students should be able to:

5. Outline the major steps in empirical research in criminal justice.
   5.1 Illustrate the problem formulation step in empirical research in criminal justice.
   5.2 Explain the research design step in empirical research in criminal justice.

8. Analyze the phases involved with writing a criminal justice research report.

Reading Assignment

Chapter 3:
Research Design: The Experimental Model and Its Variations

Chapter 4:
The Uniform Crime Reports and Sampling

Unit Lesson

Conducting research requires establishing a design or plan that governs how the research should be conducted. Engaging in research is much like planning to go on a long road trip. You want to think ahead about all of the possible items that you need, the places to go, and the potential outcomes. When you go on a trip, you also want to make note of everything that you encounter along the way so that you can give a report about what you encountered. Thus, while conducting research in many ways can be a very complex process, the general premises of research are very straightforward. We have learned a layman’s understanding of the research process, so let us look at some more technical topics concerning a research design.

Research is the process of trying to determine whether or not some variable causes changes in another variable. For example, someone is trying to determine whether variable A causes variable B to change. For someone to demonstrate that a causal relationship exists, one must be able to demonstrate that no other factors influence the specified causal relationship. If some other factors influence that causal relationship, then understandably, causality does not exist. Internal and external validity are one way in which threats to causal factors can be isolated or eliminated from the research design.

Internal validity has to do with how well the variables in the research study measure what is intended to be measured. In essence, one wants to determine whether or not the treatment (X-independent variable) had an impact on the dependent variable (Y) to which it was applied.

External validity is concerned with determining whether the research study findings, which are based on a sample, can be generalized to the larger population. For example, a researcher is interested in finding out whether or not race/ethnicity influences the types of moving violations a driver receives in a particular state. The internal validity focuses on ensuring that the study’s findings accurately reflect the interaction between race/ethnicity and moving violations. However, if a researcher wants to take the findings from a research study that focused on one state (sample) and make predictions about the influence of race/ethnicity in the United States (population), then the research study's external validity needs to be evaluated. As another example, a researcher found that in the state of Wisconsin (sample), blacks were more likely than members of other race/ethnicity groups to receive moving violations for failing to yield at forks in the road. If the researcher only wants to report those findings, then the primary concern needs to ensure those findings accurately represent the impact of race/ethnicity on moving violations in the state of Wisconsin. However, if the researcher wants to also make claims that similar findings would exist across the entire Midwestern region.
of the United States (population), then those findings and the research also need to be concerned about the external validity of the study’s findings.

There are several threats to internal validity: history, maturation, testing, instrumentation, statistical selection bias, experimental mortality, and selection-maturation interaction (Hagan, 2014). These threats to internal validity need to be mitigated or eliminated to ensure that a study is measuring what it intended to measure. There also threats to external validity: testing effects, selection bias, reactivity or awareness of being studied, and multiple-threat interference (Hagan, 2014, p. 71). These threats to external validity must also be controlled to ensure that any generalizations based on a research study’s findings are not inaccurate. There are other related causal factors that also need to be accounted for when trying to ensure that causality exists: Hawthorne effect, halo effect, post hoc error, and the placebo effect (Hagan, 2014).

There are three types of experimental designs: experimental designs, quasi-experimental designs, and preexperimental designs (Hagan, 2014). Experimental designs include random assignment to treatment and control groups (classical, posttest-only control, and Solomon four-designs). Quasi-experimental designs use matching or obtain equivalents between groups instead of random assignment to groups (such as time-series and counterbalance designs). Preexperimental designs do not include any randomization or equivalent techniques types for selecting (e.g., one-group and two-group ex post facto and one-group before-after designs). There are many derivatives to these three main types of experimental designs. Once you understand this basic design, then you could pretty much create any experimental design.

Conducting experiments is not the only way to gather data. Social surveys, tests and observation, case studies, life histories, and unobtrusive measures are alternative data-gathering strategies that allow for the collection of data without conducting an experiment (Hagan, 2014). One must know that as you progress through the use of alternate data gathering strategies (in the order previously listed), you move from a quantitative to a qualitative methodology. Then, you progress from greater control to lesser control, in which the threats to internal validity decrease and the threats to external validity increase, and you move from an artificial to a natural environment.

The Uniform Crime Reports (UCR) is perhaps one of the most widely known alternative data-gathering procedures. Victim surveys and self-reports are used to collect information about index crimes (violent and property). The information gathered in the UCR is useful in helping to evaluate crime rates across various factors. However, the UCR has several design flaws. For example, the UCR only represents a portion of the actual crime rate and is contingent upon the accurate reporting of the data by policing agencies. Also, the UCR cannot account for multiple crimes committed by one offender as it only records one offense per offender (hierarchy rule), and it does not include victim information.

In the 1980s, the national incident-based reporting system (NIBRS) was established as a major redesign of the UCR. Some changes included replacing summary counts with multiple variables to describe victims, offenders, arrestees, and other prime factors. This increases the focus from eight index crimes to 22 Group A offenses (such as robbery, kidnapping, and non-forceible sex offenses) (Federal Bureau of Investigation, n.d.).

In spite of the various techniques used by social scientists to collect data, most social science researchers are not capable of getting information from every person in a population that they wish to study. As a result, sampling strategies are used to help select a subset of the population to study. Sampling strategies can be broken into probability and nonprobability. Probability sampling refers to sampling techniques that allow for an estimation of the likelihood that every person in the population is eligible to be selected for participation in the study. Probability sampling techniques include simple random, stratified random, cluster, and systematic (multistage). Nonprobability sampling does not ensure that there is a way to estimate the chance of everyone in the population being selected for inclusion in the sample. Nonprobability sampling techniques include quota accidental, purposes, and snowball. Regardless of sampling strategies used, sampling sizes are influenced by multiple factors such as representativeness of the population, available funding, the rarity of the observed characteristics, and the sub-categorization of the variables used in the study.
References


Suggested Reading

The following websites contain valuable information that will assist you in further exploring the key concepts discussed in this unit’s assigned readings. You are encouraged to view this information.

Organizations often change or update their websites; therefore, if a link provided below does not work try searching for the name of the organization as listed below using a search engine available in your Internet browser. You are encouraged to view them.


The following website allows you to view useful information and details a brief description of how data in the criminal justice sourcebook is collected. This is relevant information that correlates to Chapter 4 in the textbook that talks about the Uniform Crime Reports and how it is an alternative data gathering technique. You are encouraged to view this information to give yourself information about another alternative data gathering technique and how the data that is used is collected.


Learning Activities (Non-Graded)

You may complete one, two, or all of the non-graded learning activities. Hopefully, these activities will not only help you to review the research methods key concepts utilized in this unit, but they will also demonstrate how research methods are applicable to our day-to-day activities (personal and professional).

There are several key concepts associated with research methods that most people do not use on a daily basis. However, understanding these concepts is integral to understanding how research methods relate to what we do on a day-to-day basis and the correct use of research methodologies. Therefore, the following activity is designed to assist you in further exploring the research methods key concepts in this unit.

1. Briefly define the following concepts in one to two sentences. Remember, there are several key concepts across multiple chapters, so it is important to ensure that the definitions are brief. The goal of this part of the activity is for you to quickly recall what the key concepts represent and not spend a significant amount of time thoroughly researching the concepts. You have already read the textbook and obtained the detailed information during your reading.

   - Accidental sampling
   - Alternative data-gathering strategies
   - Casual factors
   - Cluster sampling
   - Control group
   - Crime rate
• Criminal profiling
• Double-blind experiment
• Experimental group
• Experimental mortality
• Focus groups
• Halo effect
• Hawthorne effect
• Hierarchy rule
• History
• Instrumentation
• Maturation
• Placebo effect
• Probability samples
• Purposive sample
• Randomization
• Research designs
• Sampling
• Selection bias
• Self-fulfilling prophecy
• Simple random sampling
• Snowball sampling
• Stratified sampling
• Systematic sample
• The National Incident-Based Reporting System (NIBRS)
• Uniform Crime Reports (UCR)
• Validity

2. Take a few minutes to identify the key concepts that you recognize as being applicable to activities that you do on a daily basis. Next to each of those key concepts, quickly jot down those activities and/or contexts in which the key concepts are related.

3. Spend a little more time focusing on the key concepts that you were not able to associate with daily activities. Try to determine whether or not these are concepts that are solely related to research methods or whether the concepts are related to unique activities that one might not do on a daily basis, but might engage in outside of the research process. Jot down your conclusion next to those key concepts. For example, you would write either only related to research methods or occasional activity and the name of the activity and/or contexts in which the key concept can be associated.

4. Now that you are able to identify the research methods key concepts for this unit and how they are related to day-to-day activities as well as to the research methods process, pick a few key concepts and challenge yourself to use those key concepts in casual conversation throughout the week. Make note of the number of times you are able to correctly utilize the key concepts and, if applicable, the response you received from others regarding the use of the key concepts.

Non-graded Learning Activities are provided to aid students in their course of study. You do not have to submit them. If you have questions, contact your instructor for further guidance and information.