Lecture Notes

# Chapter 2: Quantitative, Qualitative, and Mixed Research

## Learning Objectives

* 1. Describe the characteristics of quantitative research.
  2. List and define Patton’s 12 major characteristics of qualitative research.
  3. List and explain the different types of variables used in quantitative research.
  4. Explain the difference between experimental and nonexperimental quantitative research.
  5. Explain the concept of a correlation coefficient.
  6. Describe the characteristics of qualitative research.
  7. List and explain the differences among the different types of qualitative research introduced in this chapter.
  8. Describe the characteristics of mixed research.
  9. Explain when each of the three major research paradigms (quantitative, qualitative, and mixed) would be appropriate to use.

## Chapter Summary

This chapter presents an introduction to and discussion of the three major research methodology paradigms: quantitative, qualitative, and mixed. The concept of a variable is introduced and the role of variables in quantitative research is discussed. Experimental and nonexperimental quantitative studies are compared. Correlation coefficients are explained both conceptually and practically.

## Annotated Chapter Outline

1. Introduction
   1. Brief overview: This chapter presents an introduction to the three major research methodology paradigms: quantitative, qualitative, and mixed. The characteristics and applications of each paradigm are discussed. The concept of a variable is introduced and the role of variables in quantitative research is discussed. Experimental and nonexperimental quantitative studies are compared. Correlation coefficients are explained both conceptually and practically. Qualitative and mixed research methods are also discussed.
2. Characteristics of the Three Research Paradigms
   1. Quantitative research
      1. **Quantitative research**--Research that relies primarily on the collection of quantitative data.
      2. Follows confirmatory scientific method by focusing on hypothesis and theory testing
      3. Assumption that cognition and behavior are highly predictable and explainable.
      4. **Determinism**: Assumptions that all events have causes.
      5. Operate under assumption of objectivity: There is a reality to be observed and rational observers who observe the same phenomenon will agree on its existence and characteristics.
      6. Reduces measurement to numbers
      7. Discussion Question: What are the main characteristics of quantitative research?
   2. Qualitative research
      1. **Qualitative research**--Research that relies on the collection of qualitative data.
      2. Follows exploratory scientific method when little is known or want to understand people’s experiences and express their perspectives
      3. There are no universal or unerring laws of human behavior. Behavior is fluid.
      4. **Probabilistic causes**:Causes that usually produce an outcome.
      5. Study behavior naturalistically and holistically. Reality is socially construed.
      6. Data are words obtained through observations and in-depth interviews
      7. Discussion Question: What are the main characteristics of qualitative research?
   3. Mixed research
      1. **Mixed research**--Research that involves the mixing of quantitative and qualitative methods or paradigm characteristics. The mixing of quantitative and qualitative research can take many forms. In fact, the possibilities for mixing are almost infinite.
      2. Use exploratory and confirmatory research methods.
      3. Use of only qualitative or quantitative research is limiting and incomplete for many problems.
      4. It is important to understand subjective (individual), intersubjective (language-based, cultural), and objective (material and causal) realities.
      5. Discussion Question: What are the main characteristics of mixed research?
3. Qualitative Research Methods: Experimental and Nonexperimental Research
   1. Variables
      1. **Variables**: A condition or characteristic that can take on different values or categories
      2. **Constant**: A single value or category of a variable
      3. Variables are the opposite of constants (something that cannot vary, such as a single value or category of a variable).
      4. **Quantitative variable:** A variable that varies in degree
      5. **Categorical variable:** A variable that varies by type of kind
      6. **Independent variable**: A variable that is presumed to cause a change in another variable.
      7. **Dependent variable**: A variable that is presumed to be influenced by one or more independent variables.
      8. **Cause-and-effect relationship**: Relationship in which one variable affects another variable.
      9. **Intervening or mediating variable**: A variable that occurs between two other variables in a causal chain.

10.**Moderator variable**: A variable that changes the relationship between other variables.

11.Discussion question: choose two different types of variables and compare and contrast them.

* 1. Experimental Research
     1. **Experimental research**: Research in which the researcher manipulates the independent variable and is interested in showing cause and effect.
     2. **Manipulation**: An intervention studied by an experimenter.
     3. Yields strongest evidence of all research methods about cause-and-effect relationships.
     4. Simple experiment: systematically vary an independent variable and measure its effects on the dependent variable. However, you have to worry about extraneous variables.
     5. **Extraneous variables**: A variable that may compete with the independent variable in explaining the outcome.
     6. **Confounding variable**: A variable that was not controlled for and is the reason a particular “confounded” result is observed.
     7. Attempt to control extraneous variables by random assignment to ensure that groups are similar before the intervention.
     8. Steps: random assignment to make groups similar, experimenter does something different to the groups, if the groups are then different conclude that the difference was due to what the experimenter did.
     9. Discussion question: Give an example of an experimental research study and see whether students can identify the manipulation and any extraneous and/or confounding variables.
  2. Nonexperimental Research
     1. **Nonexperimental research**: Research in which the independent variable is not manipulated and there is no random assignment to groups.
     2. As a result of no manipulation in the IV and no random assignment to groups, it is harder to look at causality.
     3. **Causal-comparative research**: A form of nonexperimental research in which the primary independent variable of interest is a categorical variable.
     4. The word “causal” is misleading. Because there is no manipulation of the IV and because it is more difficult to control for extraneous variables in nonexperimental research, cause and effect are more difficult to determine in causal-comparative research
     5. **Correlational research**: A form of nonexperimental research in which the primary independent variable of interest is a quantitative variable.
     6. **Correlation coefficient**: A numerical index that indicates the strength and direction of the relationship between two variables.
     7. **Positive correlation**: The situation when scores on two variables tend to move in the same direction.
     8. **Negative correlation**: The situation when scores on two variables tend to move in opposite directions.
     9. Positive or negative nature of the correlation is one piece of information. The other information we look at is the strength of the relationship. The size of a correlation ranges from –1.00 (strong negative relationship) to 0.00 (no relationship) to +1.00 (strong positive relationship)

10.Problems with correlational and causal-comparative research

* + - 1. No manipulation of the independent variable by the researcher
      2. Difficult to determine the temporal order of variables
      3. Usually there are too many extraneous unexplained variables

11. Discussion question: explain the problems with nonexperimental research designs

1. Qualitative Research Methods
   1. **Phenomenology**: A form of qualitative research in which the researcher attempts to understand how one or more individuals experience a phenomenon.
      1. Understand how people experience a phenomenon from each person’s own perspective.
   2. **Ethnography**: A form of qualitative research that focuses on describing the culture of a group of people.
      1. Focus on culture and holistic descriptions of participants
      2. **Culture**: The shared attitudes, values, norms, practices, patterns of interaction, perspectives, and language of a group of people.
      3. **Holistic description**: The description of how members of a group interact and how they come together to make up the group as a whole.
   3. **Narrative Inquiry**: The study of life experiences as a storied phenomenon.
      1. The goal is for the researcher to develop a narrative account of the participant’s storied experience.
   4. **Case Study Research**: A form of qualitative research that focuses on providing a detailed account of one or more cases.
      1. **Case**: a bounded system
      2. Used for exploratory, descriptive, and explanatory research questions.
   5. **Grounded Theory**: A qualitative approach to generating and developing a theory from the data that the researcher collects.
      1. Inductive approach.
   6. Discussion question: compare and contrast the different qualitative research methods described in this section.
2. Mixed Research (or Mixed Methods Research)
   1. The Advantages of Mixed Research
      1. **Fundamental principle of mixed research**: advises researchers to thoughtfully and strategically mix quantitative and qualitative research methods, approaches, procedures, concepts, and other paradigm characteristics in a way that produces an overall design with multiple (convergent and divergent) complementary (broadly viewed) strengths and nonoverlapping weaknesses.
      2. **Complementary strengths**: The idea that the whole is greater than the sum of its parts
      3. **Discussion question**:explain how mixed methods research addresses the shortcomings of quantitative and qualitative research.
3. Our Research Typology
   1. All of the types of research covered in the chapter have value.
   2. Most research involves a combination of the different methods.
   3. Figure 2.4 summarizes the chapter.