Wolters Kluwer
When you have to be right

Chapter 2
Understanding Key Concepts and Steps in Quantitative and Qualitative Research

1

Selected Key Research Terms

TABLE 2.1 Key Terms in Quantitative and Qualitative Research

Concept	Quantitative Term	Qualitative Term
Person contributing information	Subject Study participant —	— Study participant Informant, key informant
Person undertaking the study	Researcher Investigator	Researcher Investigator
That which is being investigated	— Concepts Constructs Variables	Phenomena Concepts — —
Information gathered	Data (numerical values)	Data (narrative descriptions)
Connections between concepts	Relationships (cause-and-effect, associative)	Patterns of association
Logical reasoning processes	Deductive reasoning	Inductive reasoning

2

Faces and Places of Research

- **Study (investigation):** addressing a research question
- **Study subject or participant:** people being studied or cooperating in quantitative study
- **Informants:** people cooperating in qualitative study
- **Researchers or investigators**: persons who conducts the research
- **Study site:** the overall location for a study (e.g., Portland)
  - **Multisite studies:** tend to yield more diverse group of study participants, potentially enhancing generalizability of findings

3

Question #1

A nurse researcher is conducting a quantitative study to determine protocols for triaging patients in the emergency department. Which term is generally associated with this type of research?

a. Phenomena

b. Subject

c. Pattern of association

d. Inductive reasoning

4

Answer to Question #1

b. Subject

Rationale. The person contributing information in a quantitative study is called the subject. In the qualitative study, this person is called the study participant, informant, or key informant. That which is investigated is called a concept in quantitative studies and concept or phenomena in qualitative studies. Pattern of association and inductive reasoning are qualitative terms. Relationships and deductive reasoning are quantitative terms.

5

Question #2

Tell whether the following statement is True or False.

Researchers involved in quantitative research commonly engage in fieldwork.

a. True

b. False

6

Answer to Question #2

b. False

Rationale: Researchers engage in fieldwork when performing qualitative studies.

7

Concepts and Constructs

- **Concepts:** abstractions of particular aspects of human behavior or characteristics (e.g., pain, weight) in quantitative studies
- **Phenomena:** abstracts in qualitative studies
- **Constructs:** slightly more complex abstractions (e.g., self-care)
  - For example, *self-care* in Orem's model of health maintenance is a construct.
- **Theories:** knit concepts into a coherent system that purports to explain phenomena

8

Variable

- A characteristic or quality that takes on different values, that is, that varies from one person to the next associated with quantitative studies
- **Examples**
  - Blood type
  - Weight
  - Length of stay in hospital
- The term "**variable**" is used almost exclusively in quantitative research.

9

Types/Characteristics of Variables

- **Inherent vs. created**
- **Independent variable**—the presumed cause (of a dependent variable)
- **Dependent variable**—the presumed effect (of an independent variable)
  - Often referred to as the **outcome variable** or **outcome**: Example: smoking (IV) → lung cancer (DV)
  - IV and DV terms can be used to indicate *direction of influence* rather than cause and effect.

10

Conceptual and Operational Definition

- **Conceptual**: the abstract or theoretical meaning of a concept being studied
- **Operational**: the operations (measurements) a researcher must perform to measure the concept and collect the desired information

11

Question #3

What is the best description of a dependent variable?

a. Outcome being measured
b. A person's gender
c. Presumed cause
d. Measurements performed

12

Answer to Question #3

a. Outcome being measured

Rationale: The dependent variable is the presumed effect or outcome of an independent variable (the presumed cause). Gender typically is a categorical variable. The operations (measurements) to be performed for data collection refer to the operational definition of a variable.

13

Data #1

- **Data** (singular = datum): the pieces of information researchers collect in a study
  - Quantitative researchers collect numeric (quantitative) data. See Box 2.1.
  - Qualitative researchers collect narrative (verbal) data. See Box 2.2.

14

Data #2

Box 2.1 Example of Quantitative Data

Question: Thinking about the past week, how depressed would you say you have been on a scale from 0 to 10, where 0 means "not at all" and 10 means "the most possible"?

Data:
9 (Subject 1)
0 (Subject 2)
4 (Subject 3)

15

Data #3

Box 2.2 Example of Qualitative Data

Question: Tell me about how you've been feeling lately—have you felt sad or depressed at all, or have you generally been in good spirits?

Data:
"Well, actually, I've been pretty depressed lately, to tell you the truth. I wake up each morning and I can't seem to think of anything to look forward to. I mope around the house all day, kind of in despair. I just can't seem to shake the blues and I've begun to think I need to go see a shrink." (Participant 1)

"I can't remember ever feeling better in my life. I just got promoted to a new job that makes me feel like I can really get ahead in my company. And I've just gotten engaged to a really great guy who is very special." (Participant 2)

"I've had a few ups and downs the past week but basically things are on a pretty even keel. I don't have too many complaints." (Participant 3)

16

Relationships

- A relationship is a bond or connection between phenomena.
  - **Cause-and-effect** (causal) relationship (e.g., cigarette smoking and lung cancer)
  - **Associative** (functional) relationship (e.g., gender and life expectancy)
  - **Qualitative** study of pattern: Qualitative researchers may seek patterns of association as a way of illuminating the underlying meaning and dimensionality of phenomena of interest.

17

Quantitative Research: Experimental and Nonexperimental Studies

- **Experimental research**
  - Researchers actively introduce an intervention or treatment most often to address Therapy questions.
  - Called **clinical trials** in medical research
  - Test causal relationships
- **Nonexperimental research**
  - Researchers collect data without intervening or introducing treatments
  - Called **observational studies** in medical research

18

Question #4

Tell whether the following statement is True or False.

Clinical trials are an example of observational research in medicine.

a. True

b. False

19

Answer to Question #4

b. False

Rationale: Clinical trials are a form of experimental research in medicine. Observational research is nonexperimental research in medicine.

20

Qualitative Research: Disciplinary Traditions

- **Grounded theory research**
  - Seeks to understand key social psychological processes that are grounded in reality
- **Phenomenological research**
  - Focuses on the lived experiences of humans
- **Ethnographic research**
  - Focuses on the patterns and lifeways of a cultural group and strives to learn from members of a cultural group to understand their worldview and to describe their customs and norms

21

Question #5

What is an example of a question that researchers ask when using phenomenology during qualitative research?

a. What is the meaning of the phenomenon experienced by the people?

b. What are the psychological phases that characterize a particular event?

c. What are the patterns and lifeways of a defined cultural group?

d. What is the core variable that explains what is happening in the social scene?

22

Answer to Question #5

a. What is the meaning of the phenomenon experienced by the people?

Rationale: The phenomenological researcher asks the questions What is the essence of this phenomenon as experienced by these people? or What is the meaning of the phenomenon to those who experience it? The focus of most grounded theory studies is on a developing social experience—the social and psychological phases that characterize a particular event or episode. Ethnography provides a framework for studying the patterns and lifeways of a defined cultural group in a holistic fashion.

23

Phases in a Quantitative Study

- Phase 1: Conceptual Phase
- Phase 2: Design and Planning Phase
- Phase 3: Empirical Phase
- Phase 4: Analytic Phase
- Phase 5: Dissemination Phase

24

Major Steps in a Quantitative Study: Phase 1: Conceptual Phase

- Step 1: Formulating/delimiting the problem
- Step 2: Reviewing related literature
- Step 3: Undertaking **clinical fieldwork**
- Step 4: Defining the framework and developing conceptual definitions
- Step 5: Formulating **hypotheses**

25

Major Steps in a Quantitative Study: Phase 2: Design and Planning Phase

- Step 6: Selecting a **research design**
- Step 7: Developing **intervention protocols**
- Step 8: Identifying the **population**
- Step 9: Designing the **sampling plan**
- Step 10: Specifying methods to measure variables and collect data
- Step 11: Developing methods to protect human/animal rights
- Step 12: Reviewing and finalizing the research plan

26

Major Steps in a Quantitative Study: Phase 3: Empirical Phase

- Step 13: Collecting the data
- Step 14: Preparing data for analysis (e.g., **coding** the data)

27

Major Steps in a Quantitative Study: Phase 4: Analytic Phase

- Step 15: Analyzing the data (through **statistical analysis**)
- Step 16: Interpreting results

28

Major Steps in a Quantitative Study: Phase 5: Dissemination Phase

- Step 17: Communicating the findings in a **research report** (e.g., in a journal article)
- Step 18: Putting the evidence into practice

29

Question #6

Which action would be performed first when designing and planning a quantitative study?

a. Developing intervention protocols
b. Identifying the population
c. Designing the sampling plan
d. Formulating a research design

30

Answer to Question #6

d. Formulating a research design

Rationale: The first step in designing and planning a quantitative study is formulating a research design. This is followed by developing intervention protocols, identifying the population, and designing the sampling plan.

Activities in a Qualitative Study #1

- Qualitative researchers continually:
  - Examine and interpret data
  - Make decisions about how to proceed based on what has been discovered

Activities in a Qualitative Study #2

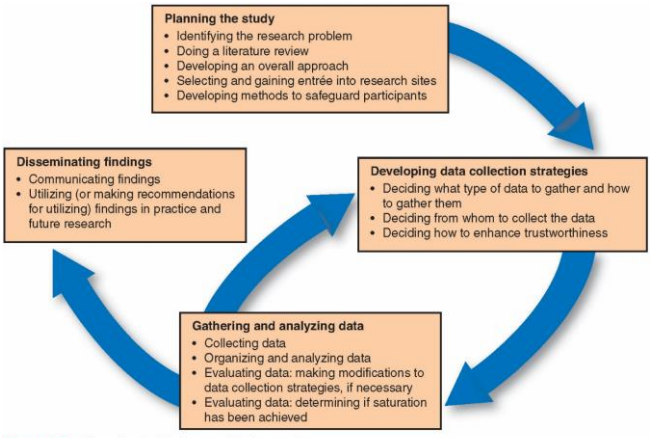

Figure 2.2 Flow of activities in a qualitative study.

33

Activities in a Qualitative Study #3

- Conceptualizing and planning the study
  - Identifying the research problem
  - Doing a literature review
  - Selecting sites and **gaining entrée**
  - Developing an overall approach
  - Addressing ethical issues (safeguard participants)
  - Deciding what type of data to gather and how to gather them
  - Deciding from whom to collect the data
  - Deciding how to enhance trustworthiness

34

Activities in a Qualitative Study #4

- Conducting the study: undertaking iterative activities through **emergent design**
  - Making sampling decisions
  - Deciding what questions to ask
  - Collecting data
  - Evaluating integrity and quality
  - Analyzing and interpreting data
  - Making new decisions
  - Communicating findings
  - Utilizing findings in practice and future research

35