

Chapter 2: Foundational Concepts for Quantitative Research

Test Bank

Multiple Choice

1. What is the definition of the term data?
- A. a numeric value within a specified range
 - B. information collected on characteristics
 - C. a collection of numbers within a set
 - D. positive or negative numeric values

Ans: B

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Easy

2. What distinguishes data from a number or numbers?
- A. Both terms are interchangeable.
 - B. Numbers with unit measures are data.
 - C. Data are numbers with attached meaning.
 - D. A number collected on a topic is data.

Ans: C

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

3. What does the term raw data refer to?

- A. information gathered but not processed
- B. naked numbers without any units
- C. data that are outside of a database
- D. numeric values from multiple sources

Ans: A

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Easy

4. Which of the following is an observational unit?

- A. each row of a data set
- B. a data set within a database
- C. an individual entity
- D. a variable in a data set

Ans: C

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Application

Answer Location: Terminology for Quantitative Research

Difficulty Level: Easy

5. In longitudinal studies, what does the term observation refer to?

- A. data for each time point
- B. value for each study subject
- C. each row in a data set
- D. all rows for a time point

Ans: A

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

6. What is a variable?

- A. a data field or data column
- B. a characteristic that varies
- C. a row in a data set
- D. a level of aggregation

Ans: B

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Easy

7. What does the term “data set” mean?

- A. a table within a database
- B. collection of different data points
- C. case information on set variables

D. rows and columns of data

Ans: C

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

8. What factor differentiates quantitative research from qualitative research?

A. the method for data collection

B. statistical methods for analysis

C. the types of variables used

D. numbers are used as evidence

Ans: D

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: The Research Circle

Difficulty Level: Easy

9. Which of the following best describes inductive research?

A. outlines a theory from observation

B. uses data to develop a theory

C. generates a hypothesis

D. tests a hypothesis using data

Ans: B

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Comprehension

Answer Location: Inductive Research

Difficulty Level: Medium

10. What does the term deductive research refer to?

A. testing a hypothesis using data

B. using data to build a theory

C. build a theory from observation

D. develop a hypothesis

Ans: A

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: Deductive Research

Difficulty Level: Medium

11. In research terminology, what does the word “theory” mean?

A. a hypothetical explanation of some social event

B. an idea about some aspect of the world

C. a hypothesis developed from observation or data

D. an explanation of some phenomena

Ans: C

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: Inductive Research

Difficulty Level: Medium

12. An assumption is made that adults between the ages of 18–25 have more points on their driving record than adults aged 26–60 years. Data are collected from the driving records of a random sample to test this assumption. What type of research does this signify?

- A. descriptive
- B. inductive
- C. empirical
- D. deductive

Ans: D

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Application

Answer Location: Deductive Research

Difficulty Level: Medium

13. Which of the following best describes the term “hypothesis?”

- A. a theory or idea based on empirical evidence
- B. a statement predicting association between two variables
- C. a conclusion made based on data analysis
- D. a conjecture on correlation between several variables

Ans: B

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: Deductive Research

Difficulty Level: Hard

14. A statistical model is developed by a team of researchers who predict the probability of a financial debt going bad after 90 days. The prediction made by the model is based on several variables such as age, education, credit score, and average savings balance of the debtor. Which is the dependent variable in this model?

- A. probability of bad debt
- B. age of debtor
- C. education of debtor
- D. average savings balance

Ans: A

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Application

Answer Location: Deductive Research

Difficulty Level: Medium

15. What are the components of a research circle?

- A. inductive, deductive
- B. descriptive, deductive, inductive
- C. deductive, empirical, descriptive
- D. descriptive, deductive

Ans: B

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Application

Answer Location: The Research Circle

Difficulty Level: Medium

16. A telecommunications company seeks to classify its customers based on their network usage and revenue generated per customer. Which type of goal does this research fall under?

- A. exploratory
- B. evaluation
- C. descriptive
- D. explanatory

Ans: C

Learning Objective: 2-3: Identify the four major goals of social research.

Cognitive Domain: Application

Answer Location: Descriptive Research

Difficulty Level: Medium

17. Which of the following statements best describes the goal of exploratory research?

- A. understand how a phenomenon works
- B. identify cause and effect relationship
- C. describe a pattern in the data
- D. explore several variables in data

Ans: A

Learning Objective: 2-3: Identify the four major goals of social research.

Cognitive Domain: Knowledge

Answer Location: Exploratory Research

Difficulty Level: Easy

18. What is primary goal of evaluation research?

- A. approve a government policy

B. gauge impact of social programs

C. assess the impact of programs

D. identify the effect of public policy

Ans: C

Learning Objective: 2-3: Identify the four major goals of social research.

Cognitive Domain: Knowledge

Answer Location: Evaluation Research

Difficulty Level: Hard

19. What does the term “reporting” refer to?

A. graph numeric variables

B. create tables of numbers

C. create a summary of the data

D. present numbers for analysis

Ans: D

Learning Objective: 2-5: Understand the reasons for both reporting and interpreting numbers.

Cognitive Domain: Knowledge

Answer Location: Report and Interpret Numbers

Difficulty Level: Medium

20. Which of the following defines the expression “interpret numbers?”

A. explain how numbers answer a question

B. present numbers in a chart or table

C. identify how variables are associated

D. make a decision with numbers

Ans: A

Learning Objective: 2-5: Understand the reasons for both reporting and interpreting numbers.

Cognitive Domain: Comprehension

Answer Location: Report and Interpret Numbers

Difficulty Level: Medium

21. When comparing two or more values, what does direction of association refer to?

A. the trend in the values

B. Which value is higher

C. negative or positive change

D. difference between numbers

Ans: B

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Comprehension

Answer Location: Direction of Association

Difficulty Level: Easy

22. A newspaper publishes a chart showing the frequency of residents of the local city by six age groups. Which of the following best describes this chart?

A. a bar chart

B. a bivariate pattern

C. a univariate distribution

D. a histogram

Ans: C

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Application

Answer Location: Direction of Association

Difficulty Level: Hard

23. What is magnitude of an association?

- A. highest value among set of numbers
- B. ratio of values among two numbers
- C. cumulative number of a set of values
- D. size of the difference between values

Ans: D

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Knowledge

Answer Location: Magnitude of Association

Difficulty Level: Easy

24. What is the requirement of a good hypothesis?

- A. state the predicted direction of association
- B. give the predicted magnitude of association
- C. specify both direction and magnitude of association
- D. define the outcome and independent variables

Ans: A

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Knowledge

Answer Location: Magnitude of Association

Difficulty Level: Medium

25. The quarterly registration of students for the undergraduate Calculus 101 class was found to fluctuate significantly during the last 2 years. How would you term the number of students registered?

- A. respondent
- B. variable
- C. observation
- D. unit measure

Ans: B

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Application

Answer Location: Highlights

Difficulty Level: Easy

True/False

1. The term “datum” is the singular form of the term “data.”

Ans: T

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Easy

2. The term “raw data” refers to data that has been transformed.

Ans: F

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Comprehension

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

3. Data collected on a case across time are called observation units.

Ans: F

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Knowledge

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

4. A study seeks to compare GDP growth of countries in Asia from 1990 to 2010.
Country is a variable in the study.

Ans: T

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Application

Answer Location: Terminology for Quantitative Research

Difficulty Level: Easy

5. Missing values occur when a particular question in a survey is not relevant for the respondent.

Ans: T

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Comprehension

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

6. There are two types of research strategies, Descriptive and Deductive.

Ans: F

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: The Research Circle

Difficulty Level: Medium

7. The goal of exploratory research is to understand how a phenomenon works and its causes.

Ans: F

Learning Objective: 2-3: Identify the four major goals of social research.

Cognitive Domain: Knowledge

Answer Location: Exploratory Research

Difficulty Level: Medium

8. The W's refer to who, what, when, where, and, how of a study.

Ans: T

Learning Objective: 2-4: Write a checklist of the W's.

Cognitive Domain: Knowledge

Answer Location: The W's

Difficulty Level: Easy

9. An analyst gave a presentation of his exploratory research to the marketing department of his company. He showed them charts and tables of distributions of each variable in the data, their quantile spread, and their moments. This is an example of interpretation of numbers.

Ans: F

Learning Objective: 2-5: Understand the reasons for both reporting and interpreting numbers.

Cognitive Domain: Application

Answer Location: Report and Interpret Numbers

Difficulty Level: Medium

10. The net profit of a fertilizer company fell by 4% from 2018 to 2019. This statement enumerates the magnitude of association between net profit and time.

Ans: T

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Application

Answer Location: Magnitude of an Association

Difficulty Level: Easy

Short Answer

1. With the help of an example, illustrate the difference between data and numbers.

Ans: Varies.

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Application

Answer Location: Terminology for Quantitative Research.

Difficulty Level: Medium

2. How would you distinguish an observation from an observation unit? Explain with a real-world example.

Ans: Varies.

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Comprehension

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

3. A research study is conducted on the profitability, that is, net quarterly profit, of small businesses (less than 20 employees) in the township of East Brunswick, NJ, for the year 2019. Identify the variables and constants of the study. Explain your answer.

Ans: Varies.

Learning Objective: 2-1: Define basic terms for quantitative research.

Cognitive Domain: Application

Answer Location: Terminology for Quantitative Research

Difficulty Level: Medium

4. In your own words, explain a mixed methods research study. Provide an example of this type of study.

Ans: Varies.

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: The Research Circle

Difficulty Level: Hard

5. Explain the components of the research circle. In which direction of the circle do the components need to be executed?

Ans: Varies.

Learning Objective: 2-2: Describe the research circle.

Cognitive Domain: Knowledge

Answer Location: The Research Circle

Difficulty Level: Medium

6. Give a real-world example of inductive research. List the steps generally taken in this type of research.

Ans: Varies.

Learning Objective: 2-2: Describe the Research Circle.

Cognitive Domain: Application

Answer Location: Inductive Research

Difficulty Level: Medium

7. Describe the goal of evaluation research in a study, with an example.

Ans: Varies.

Learning Objective: 2-3: Identify the four major goals of social research.

Cognitive Domain: Knowledge

Answer Location: Evaluation Research

Difficulty Level: Medium

8. Explain why it is important to both report and interpret numbers when presenting the results of a research study.

Ans: Varies.

Learning Objective: 2-5: Understand the reasons for both reporting and interpreting numbers.

Cognitive Domain: Comprehension

Answer Location: Report and Interpret Numbers

Difficulty Level: Medium

9. Describe the difference between direction and magnitude of an association.

Ans: Varies.

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Knowledge

Answer Location: Specify Direction and Magnitude

Difficulty Level: Medium

10. Provide an example of a bivariate association found in a research study.

Learning Objective: 2-6: State the importance of specifying the direction and magnitude of a pattern.

Cognitive Domain: Application

Answer Location: Direction of Association

Difficulty Level: Medium

Essay

1. Construct a real-world study of explanatory research to be conducted by you. Describe the steps you would take, including defining the hypothesis, to complete the study. Use research terminology to explain your steps.

Ans: Varies.

Learning Objective: 2-3: Identify the four major goals of social research.

Cognitive Domain: Application

Answer Location: Explanatory Research

Difficulty Level: Hard

2. Identify and expand on the W's for the research study you described in Question 1. Include the "how" attribute of the W's for data collection and analysis.

Ans: Varies.

Learning Objective: 2-4: Write a checklist of the W's.

Cognitive Domain: Application

Answer Location: The W's

Difficulty Level: Medium

3. For the research study you outlined in Question 1, describe the types of reports you would create to present the numbers and analysis results of the study.

Ans: Varies.

Learning Objective: 2-5: Understand the reasons for both reporting and interpreting numbers.

Cognitive Domain: Application

Answer Location: Report and Interpret Numbers

Difficulty Level: Hard