Elementary Statistics in Social Research, 12th Edition. (ISBN: 0205845487)

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# CHAPTER 1

## Why the Social Researcher Uses Statistics

### Chapter 1: Multiple Choice Questions

1. A hypothesis is a(n):
    a. fundamental unit of scientific observation.
    b. statement of the relationship between two or more variables.
    c. scientific fact of truth.
    d. observable and measurable variable.
Answer: b. statement of the relationship between two or more variables.
Objective: Factual
Page number: 2
Level: Basic

2. In a hypothesis, the presumed cause is called the:
    a. dependent variable.
    b. independent variable
    c. aggregate.
    d. constant.
Answer: b. independent variable.
Objective: Factual
Page number: 2
Level: Basic

3. In a hypothesis, the presumed effect is called the:
    a. dependent variable.
    b. independent variable.
    c. aggregate.
    d. constant.
Answer: a. dependent variable.
Objective: Factual
Page number: 2
Level: Basic

Instructions: Questions 4-7 refer to the following situation:

> A social work student is interested in studying the relationship between an adult's age and their view on off-shore drilling. The student plans to compare adults who consider themselves Extremely anti-drilling, Anti-drilling, Neutral, Pro-drilling, and Extremely pro-drilling.

4. The dependent variable is:
    a. age.
    b. view on off-shore drilling.

c. state in which the person lives.
d. none of the above

Answer: b. view on off-shore drilling.
Objective: Conceptual
Page number: 2
Level: Basic

5. What level of measurement is 'view on off-shore drilling' for this research question?
a. Nominal
b. Ordinal
c. Interval/ratio
d. None of the above

Answer: b. Ordinal
Objective: Conceptual
Page number: 12-14
Level: Basic

6. The researcher chose to measure age as a number between 18 and 110. What level of measurement is age for this research question?
a. Nominal
b. Ordinal
c. Interval/ratio
d. None of the above

Answer: c. Interval/ratio
Objective: Conceptual
Page number: 12-14
Level: Basic

7. The independent variable is:
a. age
b. view on off-shore drilling
c. state in which the person lives
d. none of the above

Answer: a. age
Objective: Conceptual
Page number: 2
Level: Basic

8. The stages of research do NOT always include:
a. data collection.
b. data analysis.
c. algebra.
d. interpretation of results.

Answer: c. algebra
Objective: Factual
Page number: 11

Level: Basic

9. Social researchers can use measurement to:
    a. name or categorize data.
    b. rank order data.
    c. assign a score.
    d. all of the above
Answer: d. all of the above
Objective: Factual
Page number: 11
Level: Basic

10. Nominal measurement is used primarily to:
    a. name or categorize data.
    b. rank order data.
    c. both of the above
    d. none of the above
Answer: a. name or categorize data.
Objective: Factual
Page number: 12
Level: Basic

11. Ordinal measurement is used primarily to:
    a. assign a score.
    b. rank order data.
    c. both of the above
    d. none of the above
Answer: b. rank order data.
Objective: Factual
Page number: 13-14
Level: Basic

12. Interval/ratio measurement is used primarily to:
    a. name or categorize data.
    b. assign a score.
    c. both of the above
    d. none of the above
Answer: b. assign a score.
Objective: Factual
Page number: 13-15
Level: Basic

13. A social researcher is interested in studying the relationship between an abstinence-only program and teen pregnancy. To test her hypothesis, she compares the results of 50 teens participating in an abstinence-only program to 50 teens participating in a more conventional sex-education program. What type of research is this?

a. Experiment
b. Survey
c. Content analysis
d. Secondary analysis

Answer: a. Experiment
Objective: Conceptual
Page number: 3-9
Level: Intermediate

14. A team of researchers is interested in determining how national political figures have been depicted historically on TV. The researchers painstakingly review the content of archival video footage to determine how objective and accurate the depictions are. What type of research is this?

a. Experiment
b. Survey
c. Content analysis
d. Secondary analysis

Answer: c. Content analysis
Objective: Conceptual
Page number: 3-9
Level: Intermediate

15. The United States census occurs every 10 years and aims to have each American household answer a series of questions. What type of research is this?

a. Experiment
b. Survey
c. Content analysis
d. Secondary analysis

Answer: b. Survey
Objective: Conceptual
Page number: 3-9
Level: Intermediate

16. A social researcher is interested in studying patients' sense of spirituality to see if it correlates with how well they respond to treatment. She only reviews archival data previously collected in a scientific manner. What type of research is this?

a. Experiment
b. Survey
c. Content analysis
d. Secondary analysis

Answer: d. Secondary analysis
Objective: Conceptual
Page number: 3-9
Level: Intermediate

17. Statistics may be used for:

a. description
b. decision making
c. both of the above
d. none of the above

Answer: c. both of the above
Objective: Factual
Page number: 18-23
Level: Basic

18. Which of the following is *not* true of the survey method?
a. Surveys often seek to reconstruct influences after they have occurred.
b. Surveys tend to be more representative than experiments.
c. Surveys establish cause and effect better than experiments.
d. Surveys usually measure but do not manipulate variables.

Answer: c. Surveys establish cause and effect better than experiments
Objective: Factual
Page number: 4-5
Level: Basic

19. Which of the following is *not* a research strategy?
a. An experiment
b. A survey
c. Participant observation
d. Interval data

Answer: d. Interval data
Objective: Factual
Page number: 3-9
Level: Basic

20. Joining a radical environmentalist group to understand group dynamics and gather data over time is an example of which research strategy?
a. An experiment
b. Meta-analysis
c. Participant observation
d. A survey

Answer: c. Participant observation
Objective: Conceptual
Page number: 3-9
Level: Basic

21. In which of the following research strategies is the independent variable manipulated?
a. An experiment
b. A survey
c. Participant observation
d. All of the above

Answer: a. An experiment

Objective: Factual
Page number: 3-4
Level: Basic

22. In an experiment, the group not subject to experimental manipulation is called the _____ group.
a. treatment
b. independent
c. random
d. control
Answer: d. control
Objective: Factual
Page number: 3-4
Level: Basic

23. The concept of "mutually exclusive" means that:
a. there is a category for every case that arises.
b. there is an order to every set of numbers.
c. there is one, and only one, category for every case.
d. None of the above
Answer: c. there is one, and only one, category for every case
Objective: Factual
Page number: 12
Level: Basic

24. "Exhaustive" means that:
a. there is a category for every case which arises.
b. there is an order to every set of numbers.
c. there is one, and only one, category for every case.
d. None of the above
Answer: a. there is a category for every case that arises
Objective: Factual
Page number: 12
Level: Basic

25. Which of the following is *not* a requirement of the nominal scale of measurement?
a. The cases are mutually exclusive
b. The cases are mutually exhaustive
c. There are equal intervals between the cases
d. None of the above
Answer: c. There are equal intervals between the cases
Objective: Factual
Page number: 12
Level: Basic

**Chapter 1: True-False Questions**

1. The survey method is used to manipulate the independent variable.
    a. True
    b. False
Answer: b. False
Objective: Factual
Page number: 4-5
Level: Basic

2. The dependent variable affects the independent variable.
    a. True
    b. False
Answer: b. False
Objective: Factual
Page number: 2
Level: Basic

3. Variables measured at the nominal level only categorize or classify data.
    a. True
    b. False
Answer: a. True
Objective: Factual
Page number: 12
Level: Basic

4. In the experimental method, the independent variable(s) can be manipulated.
    a. True
    b. False
Answer: a. True
Objective: Factual
Page number: 3-4
Level: Basic

5. Variables measured at the interval level are assigned a score.
    a. True
    b. False
Answer: a. True
Objective: Factual
Page number: 13-15
Level: Basic

6. Variables measured at the interval level cannot be used to classify, categorize, or rank order data.
    a. True
    b. False
Answer: b. False

Objective: Factual
Page number: 13-15
Level: Basic

7. Variables measured at the ordinal level cannot be used to classify or categorize data.
a. True
b. False
Answer: b. False
Objective: Factual
Page number: 12-13
Level: Basic

8. Statistics cannot be used to describe.
a. True
b. False
Answer: b. False
Objective: Factual
Page number: 18-21
Level: Basic

9. Statistics are often used to make inferences about a population.
a. True
b. False
Answer: a. True
Objective: Factual
Page number: 21-24
Level: Basic

10. Meta-analysis is the process of combining the results obtained in a number of previous studies and subjecting them all to a single significance test.
a. True
b. False
Answer: a. True
Objective: Factual
Page number: 8-9
Level: Basic

11. Ordinal level data may be treated as interval if the ordered categories are evenly spaced.
a. True
b. False
Answer: a. True
Objective: Factual
Page number: 15-17
Level: Basic

**Chapter 1: Work Questions**

Instructions: classify the measurement type in each of the following examples as:

a. Nominal
b. Ordinal
c. Interval/ratio

1. An individual's religious affiliation

Answer: a. Nominal
Objective: Conceptual
Page number: 12-15
Level: Intermediate

2. A person's occupation

Answer: a. Nominal
Objective: Conceptual
Page number: 12-15
Level: Intermediate

3. A person's IQ score

Answer: c. Interval/ratio
Objective: Conceptual
Page number: 12-15
Level: Intermediate

4. A person's age in years

Answer: c. Interval/ratio
Objective: Conceptual
Page number: 12-15
Level: Intermediate

5. A person's hair shade (very light, light, medium, dark, very dark)

Answer: b. Ordinal
Objective: Conceptual
Page number: 12-15
Level: Intermediate

6. An individual's racial background

Answer: a. Nominal
Objective: Conceptual
Page number: 12-15

Level: Intermediate

7. A person's hair color (red, brown, blonde, etc.)

Answer: a. Nominal
Objective: Conceptual
Page number: 12-15
Level: Intermediate

8. Someone's comprehension of another language (illiterate, read/speak somewhat, fluent)

Answer: b. Ordinal
Objective: Conceptual
Page number: 12-15
Level: Intermediate

9. A person's highest degree earned (lee than high-school, completed high-school, some college, etc.)

Answer: b. Ordinal
Objective: Conceptual
Page number: 12-15
Level: Intermediate

10. The number of children a person has

Answer: c. Interval/ratio
Objective: Conceptual
Page number: 12-15
Level: Intermediate

# CHAPTER 2

## Organizing the Data

### Chapter 2: Multiple Choice Questions

1 When organizing a frequency table for a variable measured at the nominal level:
a. it matters how the categories are organized.
b. the table should have a title.
c. the categories do not have to be listed in any particular order.
d. b & c
Answer: d. b & c
Objective: Factual
Page number: 41
Level: Basic

2. When organizing a frequency table for a variable measured at the ordinal level:
a. categories may be arranged from lowest to highest
b. categories may be arranged from highest to lowest
c. the categories do not have to be listed in any particular order
d. a & b
Answer: d. a & b
Objective: Factual
Page number: 41
Level: Basic

3. When constructing class intervals, it is important to take into consideration:
a. the measurement level of the data one has.
b. the pattern within the data that one wants to reveal.
c. the number of variables one uses.
d. none of the above
Answer: b. the pattern within the data that one wants to reveal.
Objective: Conceptual
Page number: 45
Level: Basic

4. The _____ and the _____ are two of the most popular and useful methods of standardizing for size and comparing distributions.
a. proportion, median
b. percentage, midpoint
c. proportion, percentage
d. median, midpoint
Answer: c. proportion, percentage
Objective: Factual
Page number: 37-38
Level: Basic

5. In a frequency distribution, the cumulative percentage may be obtained by summing the _____ distribution.

a. percentage
b. proportion
c. rate
d. ratio

Answer: a. percentage
Objective: Conceptual
Page number: 46
Level: Basic

6. A comparison of the actual number of people who violate the speed limit to the total number of drivers is an example of _____.

a. a percentage
b. a proportion
c. a rate
d. a ratio

Answer: c. rate
Objective: Conceptual
Page number: 38-40
Level: Intermediate

7. The categories of _____-level distributions do not have to be listed in any particular order

a. nominal
b. ordinal
c. interval
d. none of the above

Answer: a. nominal
Objective: conceptual
Page number: 41
Level: Intermediate

8. The cumulative frequency is defined as the:

a. number of scores at any given value.
b. number of scores below any given value.
c. number of scores at or below any given score.
d. number of scores at or above any given value.

Answer: c. number of scores at or below any given score.
Objective: Factual
Page number: 45
Level: Basic

9. The cumulative percentage is defined as the:

a. percentage of scores at a given value.

b. percentage of scores above a given value.
c. proportion of scores at or below a given value.
d. percentage of scores at or below a given value.

Answer: d. percentage of scores at or below a given value.
Objective: Factual
Page number: 46
Level: Basic

10. If the independent variable is in the rows of a cross-tabulation and the dependent variable is in the columns, which percents do we use for comparisons?
a. Column
b. Row
c. Total
d. All of the above

Answer: a. Row
Objective: Conceptual
Page number: 57-58
Level: Basic

11. Which of the following is not a commonly used form of graphic representation?
a. Pie chart
b. Map
c. Line chart
d. Grouped frequency distribution

Answer: d. Grouped frequency distribution
Objective: Factual
Page number: 61-70
Level: Basic

12. _____ typically are used to display continuous measures.
a. Pie charts
b. Bar graphs
c. Histograms
d. All of the above

Answer: c. Histograms
Objective: Factual
Page number: 61-70
Level: Basic

13. Pie charts are particularly useful for what type of data?
a. Nominal level data
b. Ordinal level data
c. Interval level data
d. None of the above

Answer: a. Nominal level data
Objective: Factual

Page number: 61
Level: Basic

14. Kurtosis refers to:
    a. the peakedness of a distribution.
    b. the skewness of distribution.
    c. the cumulative frequency of a distribution.
    d. the symmetry of a distribution.
Answer: a. the peakedness of a distribution
Objective: Factual
Page number: 67-69
Level: Intermediate

15. Skewness refers to:
    a. the normal distribution of extreme scores.
    b. the unequal distribution of extreme scores.
    c. the central limit theorem.
    d. None of the above.
Answer: b. the unequal distribution of extreme scores
Objective: Factual
Page number: 67-69
Level: Intermediate

16. A symmetrical distribution that is extremely tall is
    a. leptokurtic.
    b. platykurtic.
    c. mesokurtic.
    d. skewed.
Answer: a. leptokurtic.
Objective: Conceptual
Page number: 67-69
Level: Intermediate

17. A distribution with a tail situated to the right is
    a. negatively skewed.
    b. positively skewed.
    c. symmetrical.
    d. a normal curve.
Answer: b. positively skewed.
Objective: Conceptual
Page number: 67-69
Level: Intermediate

18. What is the upper limit of the class interval 80-89?
    a. 80.5
    b. 79.5

c. 88.5
d. 89.5
Answer: d. 89.5
Objective: Application
Page number: 43-44
Level: Intermediate

19. What is the midpoint of the class interval 80-89?
a. 83
b. 84
c. 84.5
d. 83.5
Answer: c. 84.5
Objective: Application
Page number: 44-45
Level: Intermediate

**Chapter 2: True-False Questions**

1. Nominal variables cannot logically be presented in a grouped frequency distribution.
a. True
b. False
Answer: a. True
Objective: Factual
Page number: 41
Level: Basic

2. Cumulative frequencies can only be used with variables measured at the ordinal or interval levels.
a. True
b. False
Answer: a. True
Objective: Factual
Page number: 45
Level: Basic

3. Class intervals are always equal in size.
a. True
b. False
Answer: b. False
Objective: Conceptual
Page number: 53-54
Level: Basic

4. A positively skewed distribution has extreme scores on the left.
a. True

b. False
Answer: b. False
Objective: Conceptual
Page number: 67-69
Level: Basic

5. The upper limit of a class interval is equal to its highest score.
a. True
b. False
Answer: b. False
Objective: Conceptual
Page number: 43-44
Level: Basic

**Chapter 2: Short Answer**

1. Rates compare the number of _____ cases to the number of potential cases.

Answer: actual
Objective: Factual
Page number: 38-40
Level: Basic

2. A proportion compares the _____ of a variable to the total number of cases.

Answer: frequency
Objective: Factual
Page number: 37-38
Level: Basic

3. A percentage is based on a scale of _____.

Answer: 100
Objective: Factual
Page number: 37-38
Level: Basic

4. A cross-tabulation generally compares the outcomes of at least _____ variables at the same time.

Answer: two
Objective: Conceptual
Page number: 54-55
Level: Basic

5. _____variables cannot logically be presented in a grouped frequency distribution.

Answer: Nominal
Objective: Conceptual
Page number: 41
Level: Basic

6. We call a normal curve _____ because folding it at the center creates two identical halves.

Answer: symmetrical
Objective: Conceptual
Page number: 67-69
Level: Intermediate

7. _____ scores on one side of a distribution will cause skewness.

Answer: Extreme
Objective: Conceptual
Page number: 67-69
Level: Intermediate

8. A _____ skewed distribution has its tail on the left.

Answer: negatively
Objective: Conceptual
Page number: 67-69
Level: Intermediate

9. A positively skewed distribution has its tail on the _____.

Answer: right
Objective: Conceptual
Page number: 67-69
Level: Intermediate

10. The terms bar graph and _____ are often used interchangeably though the latter has its bars joined to emphasize continuity.

Answer: histogram
Objective: Factual
Page number: 63
Level: Intermediate

11. A platykurtic distribution tends to be very _____.

Answer: flat

Objective: Conceptual
Page number: 67-69
Level: Intermediate

**Chapter 2: Work Questions**

Instructions: Questions 1-3 refer to the following situation:

> A national pollster prior to a presidential election determines that 16 states can be classified as Blue (democratic), 19 states as Red (republican), and 15 states as Purple (undecided).

1. What proportion of states are Blue?

Answer: 0.32
Objective: Computation
Page number: 37-38
Level: Basic

2. What percentage of the states are Red?

Answer: 38%
Objective: Computation
Page number: 37-38
Level: Basic

3. What percentage of the states are Blue and Purple?

Answer: 62%
Objective: Computation
Page number: 37-38
Level: Basic

Instructions: Questions 4-5 refer to the following situation:

> Given the following frequency distribution:

| Score | *f* |
|---|---|
| 20 | 1 |
| 19 | 2 |
| 18 | 4 |
| 17 | 1 |
| 15 | 1 |
| 12 | 3 |
| 8 | 2 |
| 4 | 1 |

4. What is the cumulative frequency of score 18?

Answer: 12
Objective: Computation
Page number: 44-47
Level: Intermediate

5. What is the cumulative percentage of score 18?

Answer: 80%
Objective: Computation
Page number: 44-47
Level: Intermediate

Instructions: Questions 6-8 refer to the following situation:

Given the following raw data:

| | | |
|---|---|---|
| 1 | 5 | 9 |
| 3 | 1 | 5 |
| 7 | 4 | 5 |
| 2 | 6 | 6 |

6. Construct a frequency distribution.

Answer:

| Score | *F* |
|---|---|
| 9 | 1 |
| 7 | 1 |
| 6 | 2 |
| 5 | 3 |
| 4 | 1 |
| 3 | 1 |
| 2 | 1 |
| 1 | 2 |

Objective: Application
Page number: 44-47
Level: Intermediate

7. Calculate the cumulative frequency for each score value.

Answer: 12, 11, 10, 8, 5, 4, 3, 2
Objective: Computation
Page number: 44-47

Level: Intermediate

8. Calculate the cumulative percentage of each score value

Answer: 100.0%, 91.6%, 83.3%, 66.7%, 41.7%, 33.3%, 25.0%, 16.7%
Objective: Computation
Page number: 44-47
Level: Intermediate

Instructions: Questions 9-11 refer to the following situation:

> The incoming cohort of juveniles in a new diversion program consists of 80 males and 120 females. Of this cohort, 140 graduate early.

9. What is the proportion of male participation in the program?

Answer: 0.40
Objective: Computation
Page number: 38-40
Level: Intermediate

10. What is the early release rate?

Answer: 0.70
Objective: Computation
Page number: 38-40
Level: Intermediate

11. If the early release rate of the previous cohort was 60%, what is the early release rate of change?

Answer: 0.17
Objective: Computation
Page number: 38-40
Level: Difficult

Instructions: Questions 12-14 refer to the following situation:

> Students majoring in political science and sociology are asked to report the average number of hours per week spent studying. The data are presented in the following cross-tabulation.

| | Police Science major | Sociology major |
|---|---|---|
| Freshmen year | 20 | 20 |
| Sophomore year | 15 | 30 |
| Junior year | 25 | 30 |

| | | |
|---|---|---|
| Senior year | 30 | 15 |

12. Calculate the total percents for each cell.

Answer: 10.8%, 10.8%, 21.6%, 8.1%, 16.2%, 24.3%, 13.5%, 16.2%, 29.7%, 16.2%, 8.1%, 24.3%, 48.6%, 51.4%, 100%
Objective: Computation
Page number: 56-59
Level: Intermediate

13. Calculate the row percents.

Answer: 50%, 50%, 100%, 33.3%, 66.7%, 100%, 45.5%, 54.5%, 100%, 66.7%, 33.3%, 100%, 48.6%, 51.4%, 100%
Objective: Computation
Page number: 56-59
Level: Intermediate

14. Calculate the column percents.

Answer: 22.2%, 21.1%, 21.6%, 16.7%, 31.6%, 24.3%, 27.8%, 31.6%, 29.7%, 33.3%, 15.8%, 24.3%, 100%, 100%, 100%
Objective: Computation
Page number: 56-59
Level: Intermediate