# *Statistics Tool for Social Research and Data Analysis (Canadian) 5th edition Healey Test Bank*

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Name:_____ Class:_____ Date:_____

# CHAPTER 1 - Introduction

1. Which sentence describes the role of theory in the research process?
   a. It develops generalizations based on patterns.
   b. It provides a specific, exact relationship among variables.
   c. It attempts to explain the relationship between phenomena.
   d. It measures social reality.

*ANSWER:* c

2. When working within the "wheel of science," what does a researcher do after formulating a hypothesis?
   a. propose a new theory
   b. draw an empirical generalization
   c. make empirical observations
   d. data reduction

*ANSWER:* c

3. On the "wheel of science," at what point are statistics central to the research process?
   a. only between the hypothesis stage and the observation stage
   b. only between the observation stage and the empirical generalization stage
   c. only between the empirical generalization stage and the theory stage
   d. only between the theory stage and the hypothesis stage

*ANSWER:* b

4. A sociological theory maintains that embracing a masculine identity leads to more risk-taking behaviour. What is "risk-taking behaviour" in this explanation?
   a. independent variable
   b. dependent variable
   c. hypothesis
   d. response category

*ANSWER:* b

5. A hypothesis states that being a dog owner makes people empathetic toward animals. What is "dog ownership" in this statement?
   a. independent variable
   b. dependent variable
   c. secondary variable
   d. hypothetical variable

*ANSWER:* a

6. To test a theory about how feeling like an imposter hinders student performance, a researcher makes observations of 35 Grade 6 students. The researcher plans to use "student" as a variable in the analysis. What error is the researcher making?
   a. Being a student does not vary, so it cannot be a variable
   b. Theoretical explanations require interval-ratio level variables, but "student" is only nominal
   c. The theory being proposed does not have an independent and a dependent variable
   d. The researcher forgot to make empirical generalizations, which is the next step after proposing a theory

*ANSWER:* a

7. *Y* is the symbol usually used to indicate what element of a theoretical explanation?
   a. descriptive statistic
   b. bivariate statistic
   c. dependent variable
   d. independent variable

*ANSWER:* c

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8. A researcher finds that funding for girls' education in sub-Saharan Africa lowers mortality rates. From subsequent analysis, she finds that the association is strongest in five neighbouring countries. What part of the research process has this researcher been most directly engaged in?

a. empirical generalization
b. developing a hypothesis
c. generating a theory
d. estimating central tendency

*ANSWER:* a

9. Which of these statements illustrates the limitations of statistics in social scientific inquiry?

a. Statistical analysis cannot help generate empirical generalizations.
b. Theories can be developed only prior to statistical analysis.
c. Sophisticated statistical analyses cannot fix poorly conceived study designs.
d. Statistical analysis is useless if we want to summarize ordinal-level variables.

*ANSWER:* c

10. Which of the following statements does NOT describe the role of statistics in the research process?

a. Statistics makes quantitative research possible.
b. Statistics can compensate for poorly conceived research questions and an inadequate research design.
c. Statistics are applied only at the end of the observation stage.
d. Statistics connects research and theory.

*ANSWER:* b

11. Which of the following illustrates bivariate descriptive statistics?

a. 46% of workers have a pension
b. having a pension varies across economic sectors
c. pension holding was measured with a yes or no response
d. the pension status of a group can be generalized to the whole population

*ANSWER:* b

12. Most bars in a high-rent neighbourhood closed within 3 months of the COVID-19 lockdown period of March 2020. What form of statistical concept does this illustrate?

a. univariate descriptive statistics
b. multivariate descriptive statistics
c. univariate inferential statistics
d. bivariate inferential statistics

*ANSWER:* a

13. A researcher presents 1,000 responses from a survey in a single bar graph. What aspect of descriptive statistics has this researcher illustrated?

a. measures of association
b. data reduction
c. discrete variable measurement
d. hypothesis generation

*ANSWER:* b

14. Which of the following is an example of data reduction?

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a. a graph representing the musical preferences of 500 post-secondary students
b. a list of post-secondary students' grade levels from a 100-student class
c. a sample of 50 residents drawn from a 250-resident neighbourhood
d. a decision to reduce the size of a study from a 100-person sample to a 25-person sample

*ANSWER:* a

15. What are measures of association used for?
a. They provide clues as to whether one variable causes another.
b. They allow us to predict with perfect accuracy how one variable causes another.
c. They tell us whether we can generalize from our sample to the larger population.
d. They tell us which variable should be the dependent variable in our theory.

*ANSWER:* a

16. Suppose a researcher wants to understand public attitudes about drug legalization in Canada, but it is not feasible for her to interview every person living in the country. Which of the following should she do?
a. find and interview a large number of drug users
b. use discrete measurement techniques to find the ideal number of Canadians to interview
c. carefully employ bivariate descriptive statistics to show how drug users' attitudes differ from those of non-users
d. devise a representative sample from the population and use inferential statistics to make generalizations about the Canadian public

*ANSWER:* d

17. Which of these factors is a discrete variable?
a. cars owned b. blood pressure
c. home square footage d. currency exchange rate

*ANSWER:* a

18. Which of the following is NOT a continuous variable?
a. calories consumed
b. height of a building
c. distance between two people in a subway car
d. students in a class

*ANSWER:* d

19. Which of these factors is NOT a nominal-level variable?
a. religious denomination b. political affiliation
c. frequency of yoga or mediation practice d. sexual preference

*ANSWER:* c

20. What do interval-ratio and ordinal variables have in common?
a. Scores can be ranked from least to greatest.
b. They have the ability to precisely quantify the difference between two scores.
c. They cannot be used for descriptive statistics.

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d. They do not use discrete forms of measurement.

*ANSWER:* a

21. Which of the following is the one mathematical operation to which variables measured at the ordinal level are limited?
    a. multiplication
    b. addition
    c. ranking cases as higher or lower, more or less
    d. counting the number of cases per category

*ANSWER:* c

22. A political survey asked how people voted in the last federal election, asking them to check a box for "Liberal," "Conservative," "NDP," or "Other." What is "Liberal" in this example?
    a. a nominal variable  b. an interval-ratio variable
    c. a response category  d. an inferential statistic

*ANSWER:* c

23. What should a researcher do if they fear that a nominal variable's categories are not sufficiently homogeneous?
    a. convert the variable to interval-ratio form
    b. revert to descriptive analysis
    c. delete some of the categories for the variable
    d. generate extra categories so that cases are classified with enough specificity for the researcher's purposes

*ANSWER:* d

24. A researcher asks students to indicate what genre of films they have watched in the past year. Options include "horror," "comedy," "action," "drama," and "other." What would be a problem with using this measurement strategy?
    a. The categories are not exhaustive.
    b. The categories are not mutually exclusive.
    c. The categories are listed in the wrong order.
    d. The variable is ordinal, but it should be nominal.

*ANSWER:* b

25. Which of these variables can be measured at the interval-ratio level?
    a. number of children in a family  b. emotional stability
    c. different types of crimes  d. attractiveness of a person

*ANSWER:* a

26. Which of the following is among the functions of the ordinal level of measurement?
    a. to allow distances between categories to be exactly defined
    b. to allow distance to be measured between high and low
    c. to allow analysts to say that one case is twice as large as another
    d. to allow categories to be ordered from high to low

*ANSWER:* d

27. Which type of variable permits the broadest range of mathematical operations?

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a. interval-ratio b. nominal
c. inferential d. discrete

*ANSWER:* a

28. Which statement describes the distance between scores when using interval-ratio data?
a. It is two units. b. It is not always clear.
c. It is unequal. d. It is exactly defined.

*ANSWER:* d

29. Which of the following can be treated as an interval-ratio variable?
a. a social insurance number b. a postal code
c. age d. gender

*ANSWER:* c

30. A researcher claims that low-income neighbourhoods have twice as much crime as rich neighbourhoods. What assumption is necessary for the researcher to make this statement?
a. crime is measured on the interval-ratio scale b. crime is measured continuously
c. both variables are measured on the ordinal scale d. neither variable is discrete

*ANSWER:* a

31. Which of the following series *best* demonstrates the level of sophistication for levels of measurement from *least to greatest*?
a. interval-ratio → nominal → ordinal b. nominal → ordinal → interval-ratio
c. interval-ratio → ordinal → nominal d. ordinal → nominal → interval-ratio

*ANSWER:* b

32. Briefly describe how a theory differs from a hypothesis in social science research.

*ANSWER:* Answers will vary. A theory explains how phenomena are related. It uses the terminology of "variables," specifying that an independent variable has an effect on a dependent variable. Scientific theories are general and abstract explanations, so hypotheses must be devised. A hypothesis is a statement about the relationship between variables, and while logically derived from the theory, it is much more specific and exact.

33. Some research situations are summarized below. For each situation, which variable is the independent variable and which is the dependent variable? Indicate what level of measurement is being used for each variable.
a. A university's office of academic excellence examines whether high-school grade point averages predict university grade point averages.
b. A manufacturing company explores whether temperature affects orders of its products by retail stores.
c. A professor of a large writing composition class assesses whether students' academic field (engineering, science, humanities, social sciences) predicts how many times they miss class during the semester.

*ANSWER:* a. The independent variable is high-school grade point average, and the dependent variable is university grade point average. Both variables are interval-ratio.
b. The independent variable is temperature, and the dependent variable is product orders. Both variables are interval-ratio.
c. The independent variable is academic field, and the dependent variable is absences. Academic field is nominal, and absence is interval-ratio.

34. Describe the difference between a sample and a population.

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*ANSWER:* A population refers to the full collection of cases.
A sample refers to a subset of cases that should ideally allow us to generalize to the population.

35. Why are statistics necessary for social science research? Identify at least two reasons.

*ANSWER:* Answers will vary.
Statistical techniques allow us to test and refine theories.
Statistics allow us to examine trends and relationship in data.
Statistics allow us to develop generalizations.
Statistical analysis can motivate future research.

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