Introduction to Statistics in Human Performance - Using SPSS and R 2nd edition Mood Test Bank

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Chapter 2 Review Questions and Practice Problems

Part A (Answers also provided in Appendix C)

1. Which one of the following attributes can be measured most precisely?

   * *A. Reaction time*
   B. Self-confidence
   C. Physical fitness
   D. Muscle soreness

2. John has compared his number correct (25) with Susan's (50) correct answers on a written examination. What is the highest level of measurement involved in this comparison?

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   A. ~~A.~~ Nominal

   B. Ordinal

   C. Interval

   *D. Ratio

3. What kind of evidence is most indicative of a *reliable* measuring instrument?

   A. That it actually measures what it is designed to measure
   * *B. That it measures whatever it does measure consistently*
   C. That the scores it determines are the same no matter who administers it
   D. That the scores are relevant

4. Which of the following is a special condition (i.e., type) of measurement reliability?

   A. Efficiency
   * *B. Objectivity*
   C. Relevance
   D. Validity

5. What is necessary for a measure to be valid?

   A. It must be measured on at least an interval level.
   B. It must be based on a large amount of data.
   C. It must contain little measurement error.

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* *D. It must measure what it is supposed to measure.*

6. What is the possible range for a reliability coefficient?

* *A. 0 to +1.00*
  B. –1.00 to +1.00
  C. –1.00 to 0
  D. > .80
  E. It depends on test length.

Part B

7. Which level of measurement provides the *least* amount of information?

* *A. Nominal*
  B. Ordinal
  C. Interval
  D. Ratio

8. What type of research has as its main purpose the establishment of baselines?

* *A. Descriptive*
  B. Correlational
  C. Inferential
  D. Experimental

9. In human performance studies, what value of the reliability coefficient is usually considered the lower limit for a test to be considered reliable?

* *A. .70*
  B. .75
  C. .80
  D. .85

10. We sometimes rank measurements into categories of nominal, ordinal, interval, and ratio based on the amount of information they provide. What level of measurement does this categorization itself represent?

  A. Nominal
* *B. Ordinal*
  C. Interval
  D. Ratio

11. What type of measurement validity is normally assessed qualitatively?

* *A. Content validity*
  B. Concurrent validity
  C. Predictive validity
  D. Convergent validity

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12. Which of the following is *not* considered research-related validity?

A. Construct validity

* *B. Concurrent validity*

C. Convergent validity

D. Discriminant validity

Chapter 2

Introduction to Measurement and Statistics

Test Questions

Multiple Choice

1. Scores resulting from an assessment of reaction time represent what scale of measurement?

    a. Nominal
    b. Ordinal
    c. Interval
    d. Ratio

2. Your score on an examination is an example of what scale of measurement?

    a. Nominal
    b. Ordinal
    c. Interval
    d. Ratio

3. How is the standard error of measurement related to a test's reliability?

    a. The standard error of measurement provides an estimate of the correlation between true scores and raw scores.
    b. The higher the test's reliability, the smaller the standard error of measurement.
    c. The higher the test's reliability, the greater the standard error of measurement.
    d. About two thirds of all test scores will be above the standard error of measurement.

4. Political party affiliation is an example of which level of measurement?

    a. Nominal
    b. Ordinal
    c. Interval
    d. Ratio

5. The Borg scale for assessing perceived exertion is an example of which level of measurement?

    a. Nominal
    b. Ordinal
    c. Interval
    d. Ratio

6. What is true about a measurement process if two people conduct it under the same conditions and obtain the same results?

    a. It is reliable and objective.
    b. It is objective and valid.
    c. It is valid and reliable.
    d. It is valid and objective.

7. Which of the following is a characteristic of ratio-level measurements?

    a. They indicate only rank order.
    b. They have real zero values.
    c. They have arbitrary zero values.
    d. They indicate only group membership.

8. Which of the following is a characteristic of ordinal-level measurements?

    a. They indicate rank order.
    b. They can be used to express ratios.
    c. They have arbitrary zero values.
    d. They indicate only group membership.

9. Which reliability coefficient indicates the greatest measurement reliability?

    a. 0.0
    b. –0.5
    c. 1.0
    d. 1.5

10. What value would a reliability coefficient have if no measurement error were present?

    a. 0.0
    b. –1.0
    c. 1.0
    d. 10

11. Four newscasters (from ABC, CBS, ESPN, and NBC) are arguing over paired-skating scoring at the upcoming Olympic Games. What measurement issue are the commentators probably discussing?

    a. Standard error
    b. The fact that longer tests are more reliable than shorter tests
    c. Relevance
    d. Reliability
    e. Objectivity

12. The following excerpt is from the *Fit Youth Today Test* manual: “Skinfolds have been shown to be very reliable when testers have been trained, but slightly less reliable with novice testers. Reliability coefficients with trained testers exceed 0.90. *Reliability*

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coefficients between multiple novice testers are only slightly lower." Which measurement concept is being described in the italicized sentence in the excerpt?

a. body composition
b. Content validity
c. Performance standards
d. Physical fitness
e. Objectivity

13. The following excerpt is from the *Fit Youth Today Test* manual: "Skinfolds have been shown to be very reliable when testers have been trained, but slightly less reliable with novice testers. Reliability coefficients with trained testers exceed 0.90. *Reliability coefficients between multiple novice testers are only slightly lower.*" What general conclusion could be arrived at, based on the excerpt?

a. Skinfolds could be valid.
b. Skinfolds work better with males than females.
c. The test is valid.
d. Reliability is increased with increased trials.
e. Skinfolds are based on the PPM.

14. The following excerpt is from the *Fit Youth Today Test* manual: "Skinfolds have been shown to be very reliable when testers have been trained, but slightly less reliable with novice testers. Reliability coefficients with trained testers exceed 0.90. *Reliability coefficients between multiple novice testers are only slightly lower.*" The next paragraph in the manual discusses validity. What type of validity is probably described for skinfold assessment?

a. Concurrent
b. Logical
c. Relevant
d. Content
e. Face

15. What happens to the standard error of measurement (SEM) as the test reliability goes up?

a. It goes up.
b. It goes down.
c. It depends upon the reliability.
d. It depends upon the type of test.

16. All things considered, what is the most important characteristic of a test?

a. Its objectivity
b. Its relevance
c. Its reliability
d. Its validity

e. Its variance

17. In scoring students' tests, why is measurement reliability so important?

a. It is necessary for comparison of student results to norms.
b. If a measurement is reliable, then it is also valid.
c. It indicates the reproducibility of a student's ability in an area.
d. It is necessary for comparison among students.

18. Which of the following represents the nominal scale of measurement?

a. A state driver's license number
b. VO_2max assessed via treadmill
c. BMI used to define national levels of adult obesity
d. Achievement on the ACT test

19. Which of the following is NOT considered empirical validity?

a. Criterion validity
b. Predictive validity
c. Construct validity
d. Content validity

20. What is the main concern of inferential statistics?

a. Generalizing to large groups
b. Defining the points about which a distribution centers
c. Quantifying the way in which the scores in a distribution vary
d. Proving or disproving a hypothesis

21. Which characteristic is applicable to the use of skinfold measures to estimate percent fat in athletes?

a. Concurrent validity
b. Relevance
c. Hydrostatic validity
d. Generalizability (from skinfolds to percent fat)
e. Construct validity

Short Answer

For the next six questions, mark each one:

(A) if the level of measurement is nominal.

(B) if the level of measurement is ordinal.

(C) if the level of measurement is interval.

(D) if the level of measurement is ratio.

1. Temperature (in degrees Fahrenheit)

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2. Military rank
3. Names of professional sports teams
4. Height
5. Scores on examinations like this one
6. Ranks established in a round robin tournament (everyone plays everyone else)

Answer Key

Multiple Choice

1. d
2. d
3. b
4. a
5. b
6. a
7. b
8. a
9. c
10. c
11. e
12. e
13. a
14. a
15. b
16. d
17. c
18. a
19. d
20. a
21. a

Short Answer

1. C
2. B
3. A
4. D
5. D
6. B