Chapter Ten

The Concept of Measurement

LEARNING OBJECTIVES
1. Analyze the concept of measurement.
2. Define what is a concept.
3. Learn the nature of a construct.
4. Write a concept constitutively.
5. Define a concept operationally.
6. Create a measurement scale.
7. Evaluate the reliability and validity of a measurement.

Question

Give an example of a scale that would be reliable but not valid. Also give an example of a scale that would be reliable but not valid. Also give an example of a scale that would be valid but not reliable.

Answer

- If we were trying to measure customer satisfaction, but the questionnaire consistently measured customer loyalty, the scale would be reliable in that it measured the construct consistently.
- However, it would not be valid, because it did not measure what was intended. If a questionnaire measures customer service accurately, but the results are significantly different when the survey is repeated a week later, it is not reliable.

Question

What are three methods of assessing reliability?

Answer

- **Test-retest reliability** – Repeat the same survey two weeks later with the same sample of people.
- **Equivalent form** – Use similar questionnaires, and then compare the correlations of similar test items.
- **Internal consistency** – use same instrument with two different samples, or sometimes split the sample into halves.

Question

What are three methods of assessing validity?

Answer

- **Face validity** - The researcher has to make a judgment as to whether the measure “looks like” it measures what it is supposed to.
- **Content validity** - Does the scale provide adequate coverage of the topic under study? For example, research has identified five sexes. (That’s true.) If accurate measurement of the respondents’ sex is important to the research, then only offering two choices, Male and Female, is inadequate to provide content validity.
- **Criterion-related validity** - How well can the measurement instrument predict a variable?

Question

If a restaurant customer satisfaction questionnaire lacked a question concerning the quality of the food being served, we'd say the questionnaire lacked_____ validity.

a. content

b. face

c. construct

d. criterion-related

e. none of these

Answer

Ans: A

Question

When a researcher wants to show the differences separating two objects, the ideal type of scale to use is _____.

- a. nominal
- b. ordinal
- c. interval
- d. none of these

Answer

- Ans: C

Question

Which of the following is not a way to assess reliability?

a)test-retest reliability
b)equivalent form reliability
c)internal consistency reliability
d)spilt-half technique
e)criterion- related reliability

Answer

Ans: E

Question

Revise the following assessment of customer satisfaction for Jim Dandy's Hamburger Joint so that content validity is achieved.

Please indicate your satisfaction with Jim Dandy's Hamburger Joint using a scale of 1=very satisfied, 2=somewhat satisfied, and 3=not satisfied.

____a. location of the restaurant
____b. cleanliness of restrooms
____c. friendliness of staff
____d. speed of service
____e. restaurant cleanliness
____f. availability of condiments
____g. efficiency of drive-up window
____h. hours of operation

Answer

Ans: All of the attributes above are important to the assessment of satisfaction at Jim Dandy's. However, there is one serious violation of content validity: there is no assessment of food quality.

Question

- Define Validity. Then provide an example of Face Validity and an example of a question that has a Face Validity problem.

Answer

- Validity is the degree to which what the researcher is trying to measure is actually measured, such as the extent to which a question or series of questions in a questionnaire actually measure a concept. Face Validity is the degree to which a measure seems to measure what it is supposed to measure. An example would be as follows:

  A question asking college students to respond to an age category question when the target market is defined as traditional college age students.

Question: Please indicate your age by marketing the appropriate blank below:

_____0-18 _____19-34 _____35-54 ____55 and over

The categories above would not be appropriate for traditional college ages students and therefore would not adequately measure a population consisting of college students. A better scale would be as follows:

_____0-18 _____19-21 _____22-25 ____26 and over

Question

- The local Ford dealership is interested in collecting data to answer the following information research question: How likely are young adults to purchase a new automobile within a year after graduating from college? Design a nominal, ordinal, interval, and ratio scale measurement that will enable the dealership to collect the required data. In your opinion, which one of your designs would be most useful to the dealership and why?

Answer

- Nominal Scale Design:

How likely are you to purchase a new automobile within one year after graduating from college?

[ ] Do intend to purchase

[ ] Do not intend to purchase

Answer

Ordinal Scale Design:

Please check the one response that best expresses how likely you are to purchase a new automobile within one year after graduating from college?

[ ] Definitely will purchase

[ ] Unlikely will purchase

[ ] Probably will purchase

[ ] Definitely will not purchase

Answer

Interval Scale:

Which one of the following percentages ranges best approximates the likelihood of you purchasing a new automobile within one year after graduating from college?

[ ] less than 10% chance
[ ] 11% - 49% chance
[ ] 50 – 79% chance
[ ] 90 – 100% chance

Answer

Ratio Scale:

In the space provided below, please write the percentage value that best approximates the likelihood [chance] of you purchasing a new automobile within one year after graduating from college.

_____