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Statistics: Likert Scale

This short paper is about the Likert scale. Measuring are ways of assigning values to variables based on scales. For example, one may measure the length, the width, and the thickness of a book (i.e., three variables) using a ruler (i.e., a scale). Figure 1 shows a sample variable (i.e., the length of a book) and a sample scale (i.e., a ruler).



A widely used scale of measurement is the Likert scale, which was developed by psychologist Rensis Likert in 1932. ^{[1][2]} The Likert scale is used for measuring people's attitudes. Here's an example of a Likert-type scale:

Question: For a healthy diet, how important is eating fruits?

Responses: Not important Of average importance Very important

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Likert Scale

A typical Likert scale is made up of a statement and five possible responses. Here's an example:

Statement:	Debt reduction ought to be Government	a top priority of the U.S
Responses:	Strongly disagree	1
	Disagree	2
	Neither agree nor disagree	3
	Agree	4
	Strongly agree	5

As shown above, for measurement and analysis, responses are assigned an integer value.

In addition to the five-point scale shown above, there are Likert-type scales ranging from 2 points to 9 points. And, in addition to the responses shown above, there are other types of responses. Examples by Sorrel Brown ^[4], Wade M. Vagias ^[5], and W. Paul Vogt ^[6] can be found at <u>http://www.ZeteticLibrary.com/HELP/LikertExamples.pdf</u>

Types of Scales

According to psychologist Stanley Smith Stevens, there are four types of scales of measurement: nominal, ordinal, interval, and ratio. ^[3] For more information about the scales of measurements, see Chapter 4 of "How to 'Ace' Statistics 101: Textbook" by Dr. Anthony Rodriguez, published by the Zetetic Library in 2016. URL: <u>http://www.ZeteticLibrary.com/bookstore.htm</u>

Ordinal or Interval?

The Likert scale has been called an interval-appearing scale. Whether the Likert scale is an ordinal scale or an interval scale is the subject of debate. For example, James Carifio and Rocco Perla^[7] pointed out that Susan Jamieson^[8] stated that Likert scales are ordinal scales whereas Godfrey Pell^[9] stated that Likert scales are interval scales.

Endnotes

[1] Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, *22*, 5-55.

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[2] Likert, R., Roslow, S. and Murphy, G. (1934). A simple and reliable method of scoring the Thurstone attitude scales. *Journal of Social Psychology* 5 (1934): 228-238.

[3] Stevens, S.S. (1946). On the theory of scales of measurement. *Science, 103*(2684), 677-680.

[4] Brown, S. (2010). *Likert scale examples for surveys*. URL: <u>http://www.extension.iastate.edu/ag/staff/info/likertscaleexamples.pdf</u>

[5] Vagias, W.M. (2006). *Likert-type scale response anchors*. URL: <u>http://www.clemson.edu/centers-institutes/tourism/documents/sample-scales.pdf</u>

[6] Vogt, W.P. (1999). *Dictionary of statistics and methodology*. Thousand Oaks, CA: Sage.

[7] Carifio, J. & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education, 42*(12), 1150-1152.

[8] Jamieson, S. (2004). Likert scales: how to (ab)use them. *Medical Education, 38*(12), 1217-1218.

[9] Pell, G. (2005). Use and misuse of Likert scales. *Medical Education, 39*(9), 970.