

Encyclopedia of Survey Research Methods

Ordinal Measure

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Within the context of survey research, *measurement* refers to the process of assigning values to characteristics of individuals to indicate their position on an underlying construct, such as their level of satisfaction with the government or their political party affiliations. Ordinal measures are used to produce ordered rankings among values. For example, measurements or responses to the question, *In general, would you say your health is: excellent, very good, good, fair, or poor?* can be sorted and ordered from healthiest ("excellent") to least healthy ("poor"). Ordinal measures convey information about the relationship between values—that one value is greater than another—but they do not indicate how much greater a value is. Although "excellent" is greater in value than "very good," one cannot say with certainty that the distance between those two values is the same, less, or more than the distance between "very good" and "good."

Of the four levels of measurement, ordinal measures are more sophisticated than nominal measures but less statistically powerful than interval or ratio measures. With nominal measures (e.g. political party identification), numbers may be assigned arbitrarily to categories to distinguish among them, as the numbers themselves do not have an inherent value. With interval measures (e.g. IQ scores), the distance between values is equivalent, but unlike ratio-level measures (e.g. age), they do not include a true zero as a value. Characteristics of scales generally determine the appropriate statistics. Ordinal scales are best suited for nonparametric statistics such as modes and chi-square, but they often also are used for correlations, analyses of variance, and in mathematical models. Technically, means are not meaningful measures because of the categorical nature of ordinal data; that is, medians should be used as central measures of tendency. However, means and other statistics appropriate for interval data are used by many researchers willing to accept the uncertain differences between ordinal ranks. Ordinal scales with fewer than 5 points should probably not be treated as interval level, because the small number of data points may mask large differences between scale values.

Ordinal measures are typically obtained with ordinal scales that include closed-ended response categories in which the categories are labeled using words, numbers, or some combination of both. Key decisions in obtaining ordinal measures include how many categories or scale points to administer and how to label the points. Ordinal scales typically range from 3 to 11 points (e.g. 0-10 scale). In general, data quality is

higher when measured using 5 to 7 points. A guiding principle in constructing ordinal scales is to [p. 556 ↓] develop categories that are balanced and approximately equal distance from one another. Likert scales, a popular type of ordinal scale, demonstrate this balance well. Likert scales are bipolar and include categories with both positive and negative values. A typical example is one in which respondents are asked their level of agreement with a particular statement, with response options ranging from "strongly disagree," "somewhat disagree," "neither," "somewhat agree," to "strongly agree." With regard to labeling, decisions include whether to label all of the categories or just the end points with verbal descriptions, or whether to label the categories with a combination of verbal descriptions and numbers. Overall, data quality is optimized when every scale point is represented by a verbal description.

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See also

Further Readings

Babbie, E. (2006). *The practice of social research* (11th ed.) . Belmont, CA: Wadsworth/Thomson Learning.

Krosnick, J. A., & Fabrigar, L. R. (in press). *The handbook of questionnaire design* . New York: Oxford University Press.