Summated scales

Summated scales are a collection of related questions that measure underlying constructs. For example, the Work Orientation Scale (VandeWalle, 1997) is a validated scale with 13 questions that measure 3 constructs or work orientations each determined by summing a set of 4 or 5 related questions. A summated scale is different from a response scale, which is an ordered series of response choices to a survey question. [more]

If you use an existing summated scale, you must provide research evidence of its validity and reliability. The summated scale should correlate strongly with established measures of the same characteristic, correlate somewhat with measures of related characteristics, and show no correlation with measures of unrelated characteristics. Responses on the summated scale should also show consistency over time (test-retest reliability) and across questions, which indicates the questions are measuring the same thing (internal consistency).

To develop a new summated scale, there are five major steps (Spector, 1992):

1. Define the concept or characteristic you intend to measure. For example, you may want to create a summated scale that measures academic honesty.
2. Design the summated scale, writing the questions and response choices.
3. Pilot test the summated scale and revise it, using the critiques of a small number of respondents.
4. Administer the summated scale to 100 - 200 people and determine if the questions are highly interrelated. If not, revise the scale and re-administer it.
5. Validate and norm the summated scale. Factor analysis, which groups related questions into factors, can help validate a summated scale by demonstrating that its questions are related. Use factor analysis to select the best questions to include in a summated scale. Norms, which establish the pattern of scores on the scale for your target population, allow you to compare an individual's score with other scores in the population.

Developing a summated scale is complex and difficult and researchers should consult Spector (1992) for an introduction of creating and using them.

Additional information

