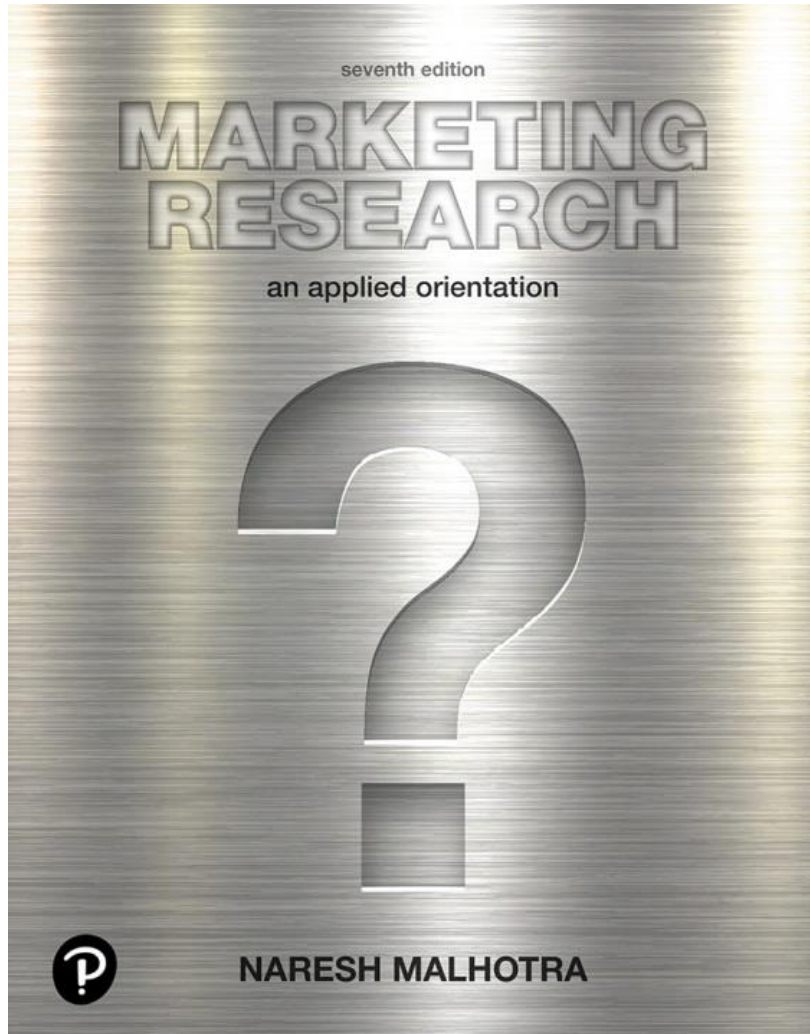# Marketing Research: An Applied Orientation

Seventh Edition

Chapter 9

Measurement and Scaling: Noncomparative Scaling Techniques

Validity

- The **validity** of a scale may be defined as the extent to which differences in observed scale scores reflect true differences among objects on the characteristic being measured, rather than systematic or random error. Perfect validity requires that there be no measurement error ($X_O = X_T$, $X_R = 0$, $X_S = 0$).

- **Content validity** is a subjective but systematic evaluation of how well the content of a scale represents the measurement task at hand.

- **Criterion validity** reflects whether a scale performs as expected in relation to other variables selected (criterion variables) as meaningful criteria.

  – It requires theory of the nature of the construct being measured.

Validity (2 of 2)

- **Criterion-related validity**

  - **Convergent validity** is the extent to which the scale correlates positively with other measures of the same construct.

  - **Discriminant validity** is the extent to which a measure does not correlate with other constructs from which it is supposed to differ.

  - **Nomological validity** is the extent to which the scale correlates in theoretically predicted ways with measures of different but related constructs.

Threats to Construct Validity

Before we launch into a discussion of the most common threats to construct validity, let's recall what a threat to validity is. In a research study you are likely to reach a conclusion that your program was a good operationalization of what you wanted and that your measures reflected what you wanted them to reflect. Would you be correct? How will you be criticized if you make these types of claims? How might you strengthen your claims. The kinds of questions and issues your critics will raise are what I mean by threats to construct validity.

I take the list of threats from the discussion in Cook and Campbell (Cook, T.D. and Campbell, D.T. Quasi-Experimentation: Design and Analysis Issues for Field Settings. Houghton Mifflin, Boston, 1979). While I love their discussion, I do find some of their terminology less than straightforward – a lot of what I'll do here is try to explain this stuff in terms that the rest of us might hope to understand.

Inadequate Preoperational Explication of Constructs

This one isn't nearly as ponderous as it sounds. Here, **preoperational** means *before translating constructs into measures or treatments*, and **explication** means *explanation* – in other words, you didn't do a good enough job of *defining* (operationally) what you mean by the construct. How is this a threat? Imagine that your program consisted of a new type of approach to rehabilitation. Your critic comes along and claims that, in fact, your program is neither *new* nor a true *rehabilitation* program. You are being accused of doing a poor job of thinking through your constructs. Some possible solutions:

- think through your concepts better
- use methods (e.g., concept mapping) to articulate your concepts
- get experts to critique your operationalizations

Mono-Operation Bias

Mono-operation bias pertains to the independent variable, cause, program or treatment in your study – it does not pertain to measures or outcomes (see Mono-method Bias below). If you only use a single version of a program in a single place at a single point in time, you may not be capturing the full breadth of the concept of the program. Every operationalization is flawed relative to the construct on which it is based. If you conclude that your program reflects the construct of the program, your critics are likely to argue that the results of your study only reflect the peculiar

Construct Validity

- Three items for each, (a) self esteem, and (b) locus of control

- Source: https://conjointly.com/kb/convergent-and-discriminant-validity/

Relationship Between Reliability and Validity

- If a measure is perfectly valid, it is also perfectly reliable. In this case $X_O = X_T$, $X_R = 0$, and $X_S = 0$.

- If a measure is unreliable, it cannot be perfectly valid, since at a minimum $X_O = X_T + X_R$.

- Furthermore, systematic error may also be present, i.e., $X_S \neq 0$. Thus, unreliability implies invalidity.

- If a measure is perfectly reliable, it may or may not be perfectly valid, because systematic error may still be present ($X_O = X_T + X_S$).

- Reliability is a necessary, but not sufficient, condition for validity.