The definition of measurement
Levels of measurement scales and their statistical implications
Weber’s constant
Fechner’s law
Stevens’ law
Thurstone’s law of comparative judgment
Thurstonian methods of scaling stimuli
Variance and covariance of random variables and their composites
Classical test theory
The definition of reliability
Reliability estimation methods
Factors that affect alternative reliability estimates
Alternative notions of error
Introduction to generalizability theory
The definition of validity
Alternative types of validity evidence
The multi-trait multi-method approach to validity
Factorial validity
The unitary view of validity
Basic achievement test construction
Summated rating scale construction
Item analysis
Thurstone questionnaire construction and scoring
Setting standards and developing test score cutoffs
Criterion referenced testing
Classical item response models (e.g., Guttman, Coombs)
Introduction to modern item response theory
Overview of item response theory applications
Item response theory compared to classical test theory
Developing and using test norms
Introduction to test equating
Overview of test equating methods
Introduction to test bias and differential item functioning (DIF)
Overview of methods to detect DIF
The Joint Standards for Educational and Psychological Testing