

Illustration: A Unified Validation Plan (see Chatterji & Lin, 2018 study for reference)

Type of Validity Evidence	Validation Question	Empirical Method(s)
A. Content-based validity	To what extent does the evidence show <i>Content Relevance</i> and <i>Content Representativeness</i> of the items and the overall assessment operations vis-à-vis the theory about M-ANX, M-SE and M-SC?	External expert reviews via survey and/or interview methods Content Validity Index (CV; <i>kappa</i> coefficient, reviewer agreement rate) Qualitative data analysis of comment
B. Validity of Theorized Internal Structure	To what extent does the evidence show that the variance in item responses is explained by underlying “latent” constructs, per the theory of M-ANX, M-SE and M-SC	Field-test items/scales with target population (n>200). Analyze data with: Exploratory Factor Analysis (EFA) Confirmatory Factor Analysis (CFA) Other Dimensionality analysis
C. Convergent Validity (a kind of correlational evidence of validity)	To what extent does the evidence show that the measures (total scores) correlate with other variables, as expected per the theory of M-ANX, M-SE and M-SC?	Field-test and obtain scale scores with target population. Test size and direction correlations of scores with each other, and with standardized mathematics achievement test measures
D. Score reliability	To what degree does the evidence show that the total scores and sub-test scores of M-ANX, M-SE and M-SC are internally consistent and replicable ?	Field-test scales with target population. Examine Cronbach’s alpha reliability of all scales and sub-scales