

# The Effect of Missing Data Imputation on Mokken Scale Analysis

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## **Abstract:**

Tests and questionnaires can be constructed roughly in two ways. Either the set of items is considered to be the basis of the test from which an item subset is selected so as to optimize psychometric criteria (exploratory analysis), or the set of items is considered to be fixed and the psychometric properties of this set are determined under a particular model (confirmatory analysis). The stand-alone software package for Mokken scale analysis, MSP (Molenaar & Sijtsma, 2000), allows both possibilities for test construction. A well-known problem in data collection for test and questionnaire construction is that some of the respondents do not supply an answer to some of the items, so that the data are incomplete. MSP only offers list-wise or case-wise deletion to handle the missing data problem. In this presentation we consider list-wise deletion as a lower bound benchmark, and discuss the effect of listwise deletion and four single and multiple imputation methods (Sijtsma & Van der Ark, in press) on the outcomes of exploratory and confirmatory test construction as implemented in MSP.

## **References:**

Molenaar, I. W., & Sijtsma, K. (2000). User's manual MSP5 for Windows. Groningen, the Netherlands: iecProGAMMA.

Sijtsma, K., & Van der Ark, L. A. (in press). Investigation and treatment of missing item scores in test and questionnaire data. *Multivariate Behavioral Research*.