Review of: "Detection and Correction of Likert Scale Multiplicative Response-Style Bias"

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Potential competing interests: No potential competing interests to declare.

The article makes important new contributions to the growing and large literature on the analysis (and correction for) response style bias(es) on Likert scale items, as it clearly describes. For this analytical purpose, the article describes a nonlinear confirmatory factor analysis model which seems to work according to its applications for the analysis of real Likert item response data, and through a simulation study.

Main Comments

- Since your proposed nonlinear confirmatory factor analysis model aims to describe response-style bias from (Likert) item response data, it can be reasoned that some response style biases can also bias the parameter estimates of this model (see the next point, below, for an example). Therefore, you may consider strategies for robust estimation for your model parameters, using ideas from the literature on robust estimation methods for factor models.

- Under equation (1), the assumption of uncorrelated errors may be questionable in some data scenarios. Correlated errors can occur for some (Likert) item response datasets, for example, in computer adaptive testing. The assumption of uncorrelated errors among items can be evaluated using Yen's (1993) Q3 test (of the null hypothesis of zero pairwise correlations of error residuals for all items). For more details, see, for example:
  https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1745-3984.1993.tb00423.x
  https://www.jstor.org/stable/1165285
  https://pmc.ncbi.nlm.nih.gov/articles/PMC5978551/
  and the references therein.
  Alternatively, can the proposed model for Likert response styles be expanded to account for correlated errors?

- Fujimoto and Karabatsos (2014, Applied Psychological Measurement) introduced a Dirichlet process (infinite) mixture of rating scale IRT models, where the response thresholds can vary (and cluster) across respondents and items. In principle, this model can also flexibly account for different response styles across persons and across questionnaire items.

Details

- At the beginning of the section 'The model', the terms 'Likert scales' and 'Likert items' and 'x_{i,k}^(j), etc., need to be clearly defined upfront, in order to enhance understanding and enable better reading flow in the rest of the article.
- Notation such as i=1..n and j=1..l can be changed into more standard notation: i=1,...,n, and j=1,...,l, etc.