

dr Lale Khorramdel

Boston College

Anchoring Vignettes as Covariates in the IRT Modeling of Response Styles

Response style (RS) bias in rating or Likert-type scales jeopardizes the validity and equivalence of the measurement of non-cognitive constructs if not accounted for and modeled appropriately. One way to account for RS is the use of anchoring vignettes (AVs), which describe fictitious individuals with known characteristics who are rated by respondents using the same rating or Likert-type scale that is used for the self-rating. Based on the assumption that AVs are invariant across respondents, and responses to them are without error and strictly ordered, AVs are used to adjust self-ratings and correct for RS. However, it was found that these assumptions are not always met. The AV approach leads to higher Cronbach's alpha values and increased correlations among adjusted variables even when the assumptions are violated (von Davier, Shin, Khorramdel & Stankov, 2017).

We examine whether AVs can be utilized to model response behavior despite these problems as covariates in mixture IRT and multiple-group IRT models. Using the PISA 2012 data, we compare models with and without AVs, and account for reading proficiency and different orderings of AVs (including ties and reversals). This approach is then contrasted to IRTree approaches which are based on multiple nested response processes and have been shown to successfully model and correct for RS (Khorramdel & von Davier, 2014; Khorramdel et al, 2017; Khorramdel, von Davier & Pokropek, 2019). Results will be discussed in light of possible improvements of the validity, fairness and comparability of data and test scores.