

An Applied Case of Longitudinal Factorial Invariance: data imputation, limitations and suggestions

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Poster

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Author

Vanessa E. Da Silva Larez, Daniel Ondé

Affiliation

Universidad Autónoma de Madrid, Universidad Complutense de Madrid

Abstract

This study focuses on longitudinal factorial invariance analysis, emphasizing the need to study equivalence between repeated measurements. The aim is to illustrate the analysis process in R using the Hedonic and Arousal Affect Scale (HAAS) with longitudinal real ordered-categorical data, following this step: (1) the identification of a catalyst and the formulation of hypotheses related to the Response Shift Theory, (2) the treatment of missing values, (3) consideration of prerequisites for longitudinal invariance analysis, and (4) model evaluation. Five levels of factorial invariance (configural, thresholds, metric, scalar, and strict) are established, and it is observed that, although invariance is maintained in the early weeks, potential Response Shift effects begin to emerge. Results indicate recalibration in specific items belonging to both high and low arousal negative affect factors. It is recommended to include the invariance longitudinal analysis in the planning phase from the design stage of longitudinal studies to obtain robust inferences, and reflections are made on the inherent limitations of the procedure.

Keywords

measurement invariance, response shift, ordered-categorical

Primary authors: Mr ONDÉ, Daniel (Complutense University of Madrid); DA SILVA LAREZ, Vanessa Elizabeth (Universidad Autónoma de Madrid)

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