

Using Modification Indices to Detect Turning Points in Longitudinal Data: A Monte Carlo Study

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Some nonlinear developmental phenomena such as nonverbal intelligence can be represented by using a simple piecewise procedure in which two linear growth models are joined at a single knot. The major problem of using this piecewise approach is that researchers have to optimally locate the knot (or turning point) where the change in the growth rate occurs beforehand. A relatively simple way to detect the knot/turning point is to freely estimate the time-specific factor loadings under the linear latent growth model framework. The major goal of this study is to examine the effectiveness of using modification indices (MI) to detect potential turning points in longitudinal data. The simulation results showed that when using the restricted search strategy, MI performed well on detecting a medium change in the growth rate between two jointed linear models (i.e., the knot) given that the numbers of both observations and measurement waves were adequately large.

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