Structural Equation Models for Ordinal Data: new estimation and testing developments

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Abstract:

Structural equation models and latent variables models are widely used in social sciences for measuring unobserved constructs such as intelligence, fear of crime, psychological states etc. In the last two decades, latent variable models have been extended to account for categorical responses, multidimensional latent variables, effects of explanatory variables, non-linear relationships, longitudinal data, missing values, outliers and complex survey data. Those extensions have led to complex models with many parameters in which estimation methods such as full maximum likelihood is difficult if not intractable. In this talk, we discuss composite likelihood estimation methods and goodness-of-fit test statistics for dealing with the complexities of the models. Simulations and real applications will be used to illustrate the performance of the proposed methods and compare them with existing limited information methods such as the three-stage least squares.