Group Invariance Assessment in Latent Class Analysis

Latent class analysis (LCA) is widely statistical technique for identifying subgroups in the population based upon multiple indicator variables. It has a number of advantages over other unsupervised grouping procedures such as cluster analysis, including its stronger theoretical underpinnings, more clearly defined measures of model data fit, and the ability to conduct confirmatory analyses. In addition, it is possible to ascertain whether an LCA solution is equally applicable to multiple groups through invariance assessment techniques. This study describes multiple statistics for detecting group invariance in the conduct of LCA, including a chi-square difference test and several information indices. In addition, the effectiveness of these methods is compared with a simulation study, and they are demonstrated in an application with the Youth Risk Behavior Survey (YRBS).

Biography

Dr. Holmes Finch is in the Department of Educational Psychology at Ball State University. He is the 2009 recipient of the APA Anne Anastasi Early Career Award as well as the Outstanding Junior Faculty and Outstanding Teaching awards. He received his PhD from the University of South Carolina where he worked as a consultant in the Statistics Department. Dr. Finch teaches statistical and research methodology as well as psychometrics. His research interests involve issues in psychometrics (e.g., invariance, dimensionality assessment, differential item functioning, generalizability theory, unfolding models) as well as multivariate statistics. His research has appeared in *Applied Psychological Measurement, Applied Measurement in Education*, the *Journal of Educational Measurement*, Structural Equation Modeling, the *Journal of Modern Applied Statistical Methods*, *Educational and Psychological Measurement*, among others.