Structural Equation Modeling: Software Comparative Review

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Abstract

After a long period of stagnancy, Structural Equation Modeling (SEM) has recently attracted renewed interest from applied researchers in Management modeling and engineering analysis. At the same seen, the software availability with different alternatives to SEM packages has considerably increased. To guide scholars to have an informed choice and make a better decision, the existing software programs will be reviewed in this paper; their weaknesses and strengths will be identified. Thus, applied researchers should treat the SEM research objectives and their data with caution to the result of this comparison presents in this paper. Specifically we review details of SPSS addition SEM analysis, Analysis of Moment Structures (AMOS), and compare it with other SEM programs such as EQS, HLM, Mplus, PLS graph, and LSREL. AMOS will be compared to software packages for Latent variable analysis/ modeling of covariance structure/Path analysis/ mediation analysis. To enrich the result of our comparative review, we rank the presented SEM software through a Multi attribute decision making method, Analytic Hierarchy Process (AHP) technique, using opinions of a group of SEM experts in field of business modeling, to rank SEM software packages; this ranking study result shows AMOS above others.

Keywords
Structural equation modeling, AMOS, Latent variable analysis, Mediation analysis