International Journal of Soft Computing 7 (6): 281-282, 2012
ISSN: 1816-9503

Develops in Latent Variable Methods of Analysis

[1]Shahryar Sorooshian, [1]Tan Seng Teck, [2]Meysam Salimi and [3]Liau Chee How
[1]Business School, Taylor's University, Subang Jaya, Selangor, Malaysia
[2]Graduate School of Management, Management and Science University, Selangor, Malaysia
[3]Business School, Monash University, Selangor Darul Ehsan, Malaysia

Abstract: This study is a note on latest developments in latent variable analysis. Text starts with theoretically review of the latent variable analysis follows by an introduction to Structural Equation Modeling (SEM), advantages and structures of SEM as an essential method of latent variable studies. Researchers suggest Medwell Journals special issues and researchers to adopt their studies with recent develops in latent variable analysis methods, especially SEM.

Key words: Latent variable, modeling, structural equation modeling, scholars, structure

INTRODUCTION

Literature review shows the constructs in most of the models of recent studies with Medwell Journals and other high ranked journals which are to be viewed as latent constructs which are not directly observable. To perform a test of theory, variables that can be observed must be used as indicators of the unobservable constructs. Latent Variable Methods of analysis recognize that theoretical constructs of interest often are not directly measurable but must instead be estimated from multiple indicator measures (Hughes *et al*., 1986; Von der Heidt, 2008). According to Hughes *et al*. (1986), there are two strengths in Latent Variable Methods of analysis one technical, one conceptual. Technically, these models provide researchers with a method for estimating structural relationships among unobservable constructs and for assessing the adequacy with which those constructs have been measured. Conceptually, the use of these models entails a mode of thinking about theory construction, measurement problems and data analysis that is helpful in stating theory more exactly, testing theory more precisely and yielding a more thorough understanding of the data (Von der Heidt, 2008).

DEVELOPS AND HIGHLIGHTS

According to references (Hair *et al*., 1995, 2006), the research model construct has been linked with a number of interdependent variables that are usually represented in a structural equation modeling. Structural equation modeling can be defined as a statistical technique that is used for testing a structural model that is represented as a hypothesis that has a relationship among latent variables measured by multiple items, usually where at least one construct is both a dependent and an independent variable (Hair *et al*., 2006; Sorooshian *et al*., 2011). It is an extension of General Linear Model (GLM) that combines different aspect of multiple regression/path analysis as well as factor analysis to estimate a series of interrelated variables simultaneously (Hair *et al*., 1995). SEM is considered an appropriate analytical technique for researches due to the following reasons; its ability to estimate a series of separate but interdependent, multiple regression equations simultaneously by specifying a structural model that allows the modeling of relationships among independent and dependent variables even when a dependent variable changes to an independent variable in other relationships (Von der Heidt, 2008). This makes SEM an attractive method of estimation techniques to researchers who can only estimate construct values by using observable or manifest variables (Von der Heidt, 2008; Sorooshian and Afshari, 2012).

According to Von der Heidt (2008) and Norzima *et al*. (2012) the decision on how to access the series of relationship uncovered in the examination of theory depends on the objectives of the research. For example, in a situation where the relationships are strictly specified, the objective will be a confirmation of the relationships. On the other hand, if the relationships are loosely recognized and the objective is on discovering the relationships, three different approaches or modeling strategies which include, confirmatory modeling strategy; usually used for the specification of a single model and SEM to access the significance of the relationship, competing model strategy; it involves identifying and

Corresponding Author: Shahryar Sorooshian, Business School, Taylor's University, Subang Jaya, Selangor, Malaysia

testing the competing models that represents different structural relationships (here the research comcloser to the competing test) and finally, the model development strategy which involves the modifications of structural and/or measurement model in order to improve the model can be used. Having a generalized or best model for other samples and population involves specifying the original model with theoretical support rather than using just an empirical support (Sorooshian and Salimi, 2012). Since, the relationships between constructs are firmly grounded in qualitative research, the adoption of confirmatory modeling or the model development strategy becomes important as a modeling method in research (Sorooshian *et al*., 2012). The distinction between a model development strategy and the other two strategies enumerated earlier is that in the model development strategy, a model is proposed and empirically tested while gaining insight into its re-specifications. By improving the model through aggregations and modifications of the structural and/or the measurement models the stringency of the test becomes stronger.

CONCLUSION

To conclude, this letter tried to attract the attention of researchers trying to publish with Medwell Journals, specially International Journal of Soft Computing and reviewers and editors to the develops in Latent Variable Methods of modeling. Also researchers of this study use this tribune to invite Medwell Journals and also other international scientific journals to contribute to this area of research methodology by offering special issues to attract studies to use develops in Latent Variable Methods of analysis in studies.

REFERENCES

Hair, J.F., B. Black, B. Babin, R.E. Anderson and R.L. Tatham, 2006. Multivariate Data Analysis. 6 Edn., Prentice Hall, New York, ISBN-13: 9780130329295.

Hair, J.F., R.E. Anderson, R.L. Tatham and W.C. Black, 1995. Multivariate Data Analysis with Reading. Prentice Hall, Englewood Cliffs, New Jersey.

Hughes, M.A., R.L. Price and D.W. Marrs, 1986. Linking theory construction and theory testing: Models with multiple indicators of latent variables. Acad. Manage. Rev., 11: 128-144.

Sorooshian, S, Z. Norzima, I. Yusof and M.Y. Rosnah, 2011. Bias of structural equation modeling. J. Comput. Model., 1: 157-160.

Sorooshian, S. and A. Afshari, 2012. Structural equation modeling: Software comparative review. Proceedings of the International Conference on Industrial Engineering and Operations Management, July 3-6, 2012, Istanbul, Turkey.

Sorooshian, S. and M. Salimi, 2012. Structural equation modeling: Sample size approach. Proceedings of the International Conference on Industrial Engineering and Operations Management, July 3-6, 2012, Istanbul, Turkey.

Sorooshian, S., A. Anvari and Z. Norzima, 2012. Modeling for regressing variables. J. Statist. Economet. Methods, 1: 1-8.

Von der Heidt, T., 2008. Developing and testing a model of cooperative interorganisational relationships (IORs) in product innovation in an Australian manufacturing context: A multi-stakeholder perspective. Ph.D. Thesis, Southern Cross University, School of Commerce and Management, Lismore, NSW.