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Model comparison of linear and nonlinear Bayesian structural equation models with dichotomous data. (English) [Zbl 1377.62094](#)

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Summary: In this article, dichotomous variables are used to compare between linear and nonlinear Bayesian structural equation models. Gibbs sampling method is applied for estimation and model comparison. Statistical inferences that involve estimation of parameters and their standard deviations and residuals analysis for testing the selected model are discussed. Hidden continuous normal distribution (censored normal distribution) is used to solve the problem of dichotomous variables. The proposed procedure is illustrated by a simulation data obtained from R program. Analyses are done by using R2WinBUGS package in R-program.

MSC:

[62F15](#) Bayesian inference

[62M05](#) Markov processes: estimation; hidden Markov models

Keywords:

Bayesian analysis; dichotomous data; Gibbs sampling; latent variables; structural equation models

Software:

WinBUGS; R; BUGS; Amos; R2WinBUGS

Full Text: [DOI](#)