Chen, Y.; Li, X.  
Determining the number of factors in high-dimensional generalized latent factor models.  
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Summary: As a generalization of the classical linear factor model, generalized latent factor models are useful for analysing multivariate data of different types, including binary choices and counts. This paper proposes an information criterion to determine the number of factors in generalized latent factor models. The consistency of the proposed information criterion is established under a high-dimensional setting, where both the sample size and the number of manifest variables grow to infinity, and data may have many missing values. An error bound is established for the parameter estimates, which plays an important role in establishing the consistency of the proposed information criterion. This error bound improves several existing results and may be of independent theoretical interest. We evaluate the proposed method by a simulation study and an application to Eysenck's personality questionnaire.

MSC:  
62-XX Statistics

Keywords:  
generalized latent factor model; high-dimensional data; information criteria; joint maximum likelihood estimator; selection consistency

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