

Factor Analysis of Ordinal Variables: Further Comparisons of UBN, NOR and POM

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Abstract

We consider factor analysis of a set of ordinal items, not just for one factor. In a previous paper (Jöreskog, K.G. & Moustaki, M. Factor Analysis of Ordinal Variables: A Comparison of Three Approaches, *Multivariate Behavioral Research*, 2001,36(3), 347—387) we compared three models and methods for doing this: UBN, NOR and POM.

Assuming underlying bivariate normality, UBN maximizes the sum of all univariate and bivariate marginal likelihoods. It is of interest to compare this approach to the two full information maximum likelihood methods NOR and POM.

NOR and POM are similar in the sense that they assume conditional independence. They differ only in terms of different cumulative response functions which is the normal for NOR and the logistic for POM.

In this paper we make further comparisons of the three models based on several examples and consider the issue of assessment of fit. How can fit be measured in a meaningful way? Which model fits the data best? We also discuss computational issues.