

Phi-divergence test statistics for loglinear models subject to constraints of likelihood ratio order

Nirian Martin¹, Raquel Mata², Leandro Pardo²

SUMMARY

In the analysis of loglinear models the assessment of the goodness-of-fit of an estimated loglinear model involves determining the discordance between observed and estimated frequencies using a phi-divergence test statistic (see Pardo 2006, Martin and Pardo (2008)). In this paper we present some results in relation to the phi-divergence test statistics in loglinear models when we have models with inequality constraints. Some theoretical as well simulated results are presented.

Keywords: Phi-divergence measures, Loglinear modes, Likelihood Ratio Order

AMS Classification: 62F12, 62F05

References

- [1] MARTIN, N. AND L. PARDO (2008) New families of estimators and test statistics in log-linear models. *Journal of Multivariate Analysis*, **99**(8), 1590-1609.
- [2] PARDO, L. (2006). *Statistical Inference Based on Divergence Measures*. Statistics: series of Textbooks and Monographs. Chapman & Hall / CRC.
- [3] SILVAPULLE, M. AND SEN. (2005). *Constrained statistical inference. Inequality, order, and shape restrictions*. Wiley Series in Probability and Statistics. Wiley-Interscience (John Wiley & Sons)

¹Department of Statistics,
Carlos III University of Madrid,
Calle Madrid, 126 - 28903 Getafe (Madrid), Spain
nirian.martin@uc3m.es

²Department of Statistics and O.R. I,
Complutense University of Madrid,
Plaza De Ciencias, 3 - 28040, Madrid, Spain.
raquel.mata@pdi.ucm.es
lpardo@mat.ucm.es