BAYESIAN APPROACH OF AR(1) PANEL DATA MODEL: APPLICATION IN MICROARRAY TIME SERIES DATA

Telma Suely da Silva MORAIS[1]
Fabyano Fonseca e SILVA[1]
Carlos Henrique Osório SILVA[1]
Sebastião MARTINS FILHO[1]
Moysés NASCIMENTO[1]
Thelma SÁFADI[2]

- *ABSTRACT: We considered a Bayesian analysis of first order autoregressive, AR(1), panel data model, using exact likelihood function, comparative analysis of prior distributions (sensitivity analysis) and predictive distributions of future observations. The methodology efficiency was evaluated by a simulation study using three prior, which were related to different Generalized Beta distributions: symmetric, asymmetric and uniform prior. We applied the proposed methodology to microarray time series real data of HeLa cells. The forecast of gene expression in one future time showed high efficiency.*

- *KEYWORDS: Panel data; autoregressive model; Bayesian inference; microarray time series.*

[1] Universidade Federal de Viçosa - UFV, Centro de Ciências Exatas e Tecnológicas, Departamento de Estatística, Campus Universitário, CEP:36570-000, Viçosa, MG, Brasil. E-mail: *tel_morais@vicosa.ufv.br* / *fabyanofonseca@ufv.br* / *chos@dpi.ufv.br* / *martinsfilho@ufv.br* / *moysesnascim@gmail.com*

[2] Universidade Federal de Lavras - UFLA, Departamento de Ciências Exatas, Campus Universitário, CEP: 37200-000, Lavras, MG, Brasil. E-mail: *safadi@ufla.br*