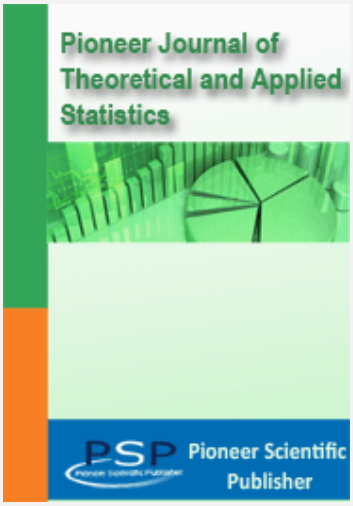
Pioneer Journal of Theoretical and Applied Statistics
Volume 3, Issue 1, Pages 1-20 (January 2012)

ISSN: 2230-9837



BAYESIAN ANALYSIS OF GROWTH CURVE MODELS WITH ERRORS-IN-VARIABLES IN AUXILIARY INFORMATION AND AR(1) COVARIANCE STRUCTURE

Steward Huang, Ashis Sen Gupta and Keh-Shin Lii

Received October 5, 2011

Abstract

We propose to analyze our data using models incorporating errors-in-variables (EIV) in auxiliary information and with autoregressive covariance structure through Bayesian methodology. The incorporation of these components in our growth model is necessary and realistic in the study of many statistical problems. The approach of classical frequentist analysis usually mandates many simplifying assumptions to reduce the complexity of the problems, or else analytic solutions will be impossible. In contrast, a Bayesian approach, with its computational advantages, can be effective in dealing with the complexity of these types of models. Though much research (especially using traditional approach) has been clustered in this area, models similar to the ones proposed here have been non-existent in literature.

Keywords and phrases: Bayesian analysis, growth curve, errors-in-variables, autocorrelation, auxiliary variables.