ABSTRACT

The present study is conducted to examine the estimation problem in Log-Normal regression model for censored data in the presence of many predictors when some prior subspace information is available. Some of these predictors may active and have inflectional effect.

We have studied some improved estimation strategies based on pretest and shrinkage techniques. On the basis of these strategies we define five estimators i.e. unrestricted ML estimator, restricted ML estimator, linear shrinkage ML estimator, preliminary test estimator and shrinkage pretest estimator.

We have developed some asymptotic distributional results to study the asymptotic properties of these estimators in term of asymptotic distributional bias along with asymptotic distributional quadratic risk. We have compared the performance of these estimators with usual classical unrestricted estimator. We have also compared pair-wise performance of the estimators under considerations.

In terms of simulated relative efficiency, in the support of analytical results we have conducted Monte Carlo simulation study. The results are in agreement to the theoretical results. A real data example is also provided in the last.

Keywords: Asymptotic distributional bias and risk, AFT models, Log-Normal regression,

Uncertain prior information, likelihood ratio test, Monte Carlo simulation.