BAYESIAN AND NON-BAYESIAN ESTIMATION IN LOG-LOGISTIC LIFETIME MODEL USING ADAPTIVE PROGRESSIVELY CENSORED DATA

Anita Kumari and Kapil Kumar*
Department of Statistics, Central University of Haryana, Mahendergarh - 123 031, India.
E-mail: kapilstats@gmail.com

Abstract: This article includes the problem of Bayesian and non-Bayesian estimation of parameters of the log-logistic lifetime model under adaptive progressive type-II censoring. The classical and Bayesian estimation techniques are used to estimate the unknown parameters of the log-logistic lifetime model. The maximum product spacing and maximum likelihood estimation techniques are used to obtain the point estimates of the unknown parameters with their corresponding asymptotic confidence interval as the interval estimates of the parameter. The Bayes estimates of the parameter are calculated using MCMC techniques with their corresponding highest posterior density credible intervals. The comparison of various estimates obtained in the study is made by carrying out a simulation study. The illustration of the study is shown by analyzing a real-life problem. Finally, conclusions are made based on the above study.

Key words: Adaptive progressive censoring, Log-logistic lifetime model, Maximum likelihood estimation, Maximum product spacing estimation, Bayesian estimation.


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