

Abstract:

In random censoring, each subject has a censoring time, which is assumed to be independent of actual failure time. This article deals with inverse Maxwell distribution under randomly censored data. The maximum likelihood estimates are obtained by using the Newton-Raphson method. The confidence interval for the parameter is obtained by using the asymptotic normality assumption of maximum likelihood estimate. Bayes estimates were obtained using Markov Chain Monte Carlo and Tierney-Kadane approximation methods under squared error loss function. Bayesian Credible and Highest Posterior Density intervals are also obtained. To compare the different methods, a simulation study is performed. Finally, tumor-free time data of the 30 rats fed with saturated diets are analyzed.

Keywords: Random Censoring; Inverse Maxwell Distribution; Newton-Raphson; Markov Chain Monte Carlo; Tierney-Kadane Approximation