Abstract

The proposed model has been a sweeping statement of the classical Gumbel model. In this paper, the Markov chain Monte Carlo (MCMC) system has been used to estimate the parameters of Exponentiated Gumbel(EG) model based on a complete sample. A procedure is developed to obtain Bayes estimates of the parameters of the Exponentiated Gumbel model using MCMC simulation method in OpenBUGS, an established software for Bayesian analysis using Markov Chain Monte Carlo (MCMC) system. The MCMC methods have been shown to be easy to implement computationally, the estimates always exist and are statistically consistent, and their probability intervals are convenient to construct. The R functions are developed to study the statistical properties, model validation and comparison tools of the proposed model and the output analysis of MCMC samples generated from OpenBUGS. The proposed methodology is suitable for empirical modeling. A simulated data set is considered for illustration under uniform and gamma sets of priors.


**Index Terms**

Computer Science                        Software Engineering

**Keywords**

Exponentiated Gumbel(EG) model          Parameter estimation          Maximum likelihood
Parameter estimation                  Bayes estimates

Markov Chain Monte Carlo (MCMC)

OpenBUGS