BAYESIAN INFERENCE OF THREE-PARAMETER BURR XII BASED ON PROGRESSIVELY TYPE II CENSORED OBSERVATIONS

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SUMMARY

We consider the Bayesian inference of the three-parameter Burr XII distribution based on the progressively type II censored data. We derive the Bayesian estimators of the three parameters, the survival function and the hazard function; under three different loss functions. We use Chain Monte Carlo method (MCMC) as the Metropolis-Hastings sampling for the estimation part. Then we compare the Bayesian estimators with the maximum likelihood obtained ones using Pitman closeness criterion and the integrated mean squared error. Furthermore, we study the prediction problem in the two-samples case in order to predict future independent order statistics. Finally, we use a real life data set to illustrate the proposed methods.

Keywords and phrases:Three parameters Burr XII distribution, progressive type II censored data, Maximum likelihood estimation, Bayesian estimations, MCMC methods, Posterior predictive density.

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