

STATISTICAL INFERENCE TO THE PARAMETERS OF THE MODIFIED EXTENDED EXPONENTIAL DISTRIBUTION UNDER THE TYPE-II HYBRID CENSORING SCHEME

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SUMMARY

In this paper, the statistical inference procedures have been discussed to the parameters of the modified extended exponential distribution under the Type-II hybrid censoring scheme. These procedures have been implemented using the maximum likelihood and Bayesian approaches. Failure real data related to a mechanical model is fitted well to the proposed distribution. Hence the survival and hazard functions have been estimated to extrapolate results that contribute to study failure analysis of the mechanical model under the study. The performance of the Bayesian estimators of the model parameters has been compared with the maximum likelihood approaches through a simulation study. Also, two-sample Bayesian prediction intervals are explored based on the failure real data set as an illustrative example. Finally, concluding remarks have been given followed by proposed recommendations that contribute to making good decisions regarding the failure analysis in the light of the type-II hybrid censoring scheme.

Keywords and phrases: Statistical inference; reliability theory; censored data; MCMC approach; failure analysis to mechanical components.

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