



ON THE ESTIMATION OF THE SHAPE PARAMETER OF GENERALIZED RAYLEIGH DISTRIBUTION UNDER SYMMETRIC AND ASYMMETRIC LOSS FUNCTIONS

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ABSTRACT

Generalized Rayleigh Distribution (GRD) was introduced by Surles and Padgett for about one and half decade ago. This skewed distribution is used quite effectively in modelling life time data. In this research, Bayesian estimation of the shape parameter of Generalized Rayleigh Distribution under the assumption of uniform prior is considered. The Bayes estimates were obtained under three different loss functions, namely: Squared Error, Entropy and Precautionary loss functions. After extensive Monte Carlo simulations, the performances of these Bayes estimates and that of Maximum Likelihood Estimates (MLEs) were compared in which it was observed that the estimates under the entropy loss function is adjudged to be more reliable than the corresponding estimates under the squared error loss function, precautionary loss function and MLEs.

Keywords: Bayes estimators, loss functions, maximum likelihood estimation, uniform prior.

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