BAYESIAN AND NON-BAYESIAN ESTIMATION OF WEIGHTED NEW WEIBULL PARETO DISTRIBUTION USING REAL LIFE DATA

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Abstract—In this article, we proposed a weighted model based on new Weibull Pareto (NWP) distribution known as weighted new Weibull Pareto (NWP) distribution and study its different statistical properties. The technique of AIC and BIC is used for model comparison. The parameter α of the proposed model is estimated through Bayesian and non-Bayesian methods of estimation. Bayes estimators are obtained under different loss functions using different types of priors. The purpose is to find out the combination of a loss function and a prior having the minimum value of posterior risk and thus producing the best results. For the application of the proposed model, two real life data sets are used and the results are obtained through R-software. The study depicts that in order to estimate the said parameter use of quadratic loss function under extension of Jeffrey's prior can be preferred.

Keywords: Distribution model, Bayes estimators, Data sets and R-software.