BAYES ESTIMATION OF PARAMETERS FOR THE BURR XII
DISTRIBUTION UNDER SEVERAL SAMPLING PLANS

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ABSTRACT

In the first part of the thesis, we consider $n$ identical items having life times $X_1, \ldots, X_n$ from Burr type XII distribution with parameter $\theta$. Assuming conjugate prior for $\theta$ (Gamma prior) and squared error loss, we computed Bayes estimates of the scale parameter $\theta$ using the following sampling plans: complete sample, type I censoring, partial ordering I, type II censoring, partial ordering II.

In the second part, we consider $n$ identical items from two parameter Burr type XII distribution with parameters $c$ and $\theta$. Assuming prior pdf of $\theta$ to be Gamma and the prior of $c$ to be noninformative and independent of the first, we derived, under squared error, the Bayes estimates in the five cases mentioned earlier. Then we take prior of $\theta$ and $c$ are noninformative and we derived, under squared error loss, the Bayes estimates of $\theta$ and $c$ in the first four cases.

We derived the reliability for every cases that we derived it.

By using simulation methods, we compare between the sampling plans mentioned above.