ESTIMATION OF THE PARAMETERS OF THE PARETO DISTRIBUTION OF THE SECOND KIND USING RANKED SET SAMPLING

By

Jalal Abdul Qader Ahmad Al - Ashary

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Thesis Defense Committee:

Prof. Muhammad S. Abu-Salih
Dr. Ayman Baklizi
Dr. Khaleefah AL-Zubaidi
Dr. Maher Taka

Chairman:
Member:
Member:
Member:
ABSTRACT

We studied the estimation of the parameters of the Pareto distribution of the Second kind using the Ranked Set sampling (RSS) and we compared it with the simple Random sampling (SRS). The scale parameter ($\beta$) was estimated when the location parameter ($\alpha$) and the Shape parameter ($\gamma$) were known, using RSS, minimum RSS and SRS by the methods: MLE, BLUE and unbiased estimator.

Also the location parameter ($\alpha$) was estimated when the scale parameter ($\beta$) and the shape parameter ($\gamma$) were known and the shape parameter ($\gamma$) was estimated when the scale parameter ($\beta$) and the location parameter ($\alpha$) were known using the methods mentioned above.

Relative efficiency of RSS and minimum RSS were computed in each case by simulation. Relative efficiency was found to be $> 1$ each estimator.

Finally, we estimated the scale parameter ($\beta$) and The location parameter ($\alpha$) when the Shape parameter ($\gamma$) is known.