

## ABSTRACT

The improved MLE estimators of two parameters generalized Pareto distribution using uncertain prior information when one of the parameters was known. Some of the improved estimation strategies preliminary test and shrinkage preliminary test principles and two large sample test statistic was proposed. The performance of these estimators was compared by asymptotic distributional bias and mean square error. Using the notion of simulated relative efficiency, detailed Monte-Carlo simulation experiments were conducted to appraise the performance of the estimators numerically and couple of real-data examples are also furnished at the end.

**Keywords:** Uncertain prior information, Pretest estimation, Asymptotic distributional bias, Asymptotic distributional quadratic risk.