

## A Study on Goodness of Fit Tests for One Parameter Pareto Distribution under Various Alternatives

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### ABSTRACT

The goodness of fit testing is a diagnostic procedure for testing the assumptions underlying the model we are trying to fit to the data. Measures of goodness of fit typically summarize the discrepancy between observed and expected values under a statistical model. The test shows how well the distribution we selected fits to our data. In this paper, an attempt has made to test the goodness of fit for the Pareto distribution based on Cramer-von Mises, Kolmogorov-Smirnov, Anderson-Darling and Integral type test statistics. The empirical critical values are calculated and the performance (Robustness and Power) of these test statistics for goodness of fit for various alternatives, viz. Gamma, Weibull, Lognormal, Shifted Exponential, and Exponential distributions are carried out by using Monte-Carlo Simulation technique. Finally, conclusions are made on the basis of the results.

**Keywords:** Anderson-Darling statistic, Cramer-von Mises statistic, Integral type statistic, Kolmogorov-Smirnov statistic, Monte Carlo Simulation, Power and Robustness.