

Alpha power transformed family of distribution: Properties, estimation and applications

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Abstract

In this talk We introduce several new lifetime distributions, called the alpha-power transformed family of distributions. Various properties of the proposed distributions, including explicit expressions for the quantiles, moments, conditional moments, stochastic ordering, Bonferroni and Lorenz curve, stress–strength reliability and order statistics are derived. The maximum likelihood estimators of the unknown parameters of alpha-power transformed family of distributions and the associated confidence intervals are obtained. A simulation study is carried out to examine the performances of the maximum likelihood estimates in terms of their bias and mean squared error using simulated samples. Finally, the potentiality of the distribution is analyzed by means of real data sets.