



Mixture of exponentiated Pareto model through Beta type generator

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Abstract

The beta distribution has been widely used to model a variety of uncertainties as well as probability distributions of variables. The Pareto distribution is known in the modelling and analysis of lifetimes. We propose a flexible model called the generalised beta type III-Pareto distribution, to extend the Kumaraswamy-Pareto distribution, the beta type I-Pareto distribution and several other models. Taking the Pareto as the parent distribution and the beta as the generator, new contributions through weighted cumulative distribution functions can be investigated. The statistical properties of this new model such as the hazard function and moments are derived. The method of maximum likelihood is used to estimate the model parameters and the potential of this newly proposed model is investigated through an application of a real data set.

Keywords: Kumaraswamy; maximum likelihood estimation; parent distribution; Pareto distribution.