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A Flexible Pareto Distribution Using α-Power Transformation

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Abstract : In Statistical Distribution Theory, considering an additional parameter to classical distributions is a usual practice. In this study, a new distribution referred to as α-Power Pareto distribution is introduced by including an extra parameter. Several properties of the proposed distribution including explicit expressions for the moment generating function, mode, quantiles, entropies and order statistics are obtained. Unknown parameters have been estimated by using maximum likelihood estimation technique. Two real datasets have been considered to examine the usefulness of the proposed distribution. It has been observed that α-Power Pareto distribution outperforms while compared to different variants of Pareto distribution on the basis of model selection criteria.

Keywords : α-power transformation, maximum likelihood estimation, moment generating function, Pareto distribution
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