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Authors:

Dina A. Ramadan, Walaa Magdy A.

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Abstract

A new method for adding parameters to a well-established distribution to obtain more flexible new families of distributions is applied to the inverse Weibull distribution (IWD). This method is known by the Alpha-Power transformation (APT) and introduced by Mahdavi and Kundu [9]. The statistical and reliability properties of the proposed models are studied. The estimation of the model parameters by maximum likelihood and the observed information matrix are also discussed. The extended model is applied on a real data and the results are given and compared to other models.

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Index Terms

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Keywords

Weibull distribution; inverse Weibull distribution; maximum-likelihood estimation; survival function; fisher information matrix; order statistic.