

THE BURR X FRÉCHET DISTRIBUTION WITH ITS PROPERTIES AND APPLICATIONS

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SUMMARY

In this paper we define and study a new three-parameter lifetime model called the Burr X Fréchet distribution. The new model has the advantage of being capable of modeling various shapes of aging and failure criteria. Various of its properties including ordinary and incomplete moments, quantile and generating functions, Rényi and η -entropies and order statistics are derived. The maximum likelihood method is used to estimate the model parameters. Simulation results to assess the performance of the maximum likelihood estimation are discussed. We prove empirically the importance and flexibility of the new model comparing it with other extensions of the Fréchet distribution in the existing literature.

Keywords and phrases: Burr X G-Family, Fréchet Distribution, Maximum Likelihood, Moment, Order Statistics, Rényi Entropy.

2010 Mathematics Subject Classification: Primary 62H10, secondary 62J12.