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KARAM DISTRIBUTION: A NEW LIFETIME DISTRIBUTION WITH REAL DATA APPLICATION

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SUMMARY

A new one parameter continuous distribution called Karam distribution for modeling real lifetime data is proposed. Various features of the proposed distribution are studied such as moments, variance, moment generating function, skewness, kurtosis, Bonferroni and Lorenz curves, stochastic ordering, mean deviations about mean and median, order statistics, and Renyi entropy measure. The reliability analysis including survival, hazard rate, odds, reverse hazard, cumulative hazard and mean residual life functions are obtained. The maximum likelihood method and method of moments are used to estimate the parameter of the distribution. An application to real data set is presented to demonstrate the usefulness and superiority of the proposed distribution in modeling such data compared to some compatible distributions.

Keywords and phrases: Lifetime distribution, Reliability, Mean residual life function, Stochastic ordering, Moments, Generating function, Mean deviations, Maximum likelihood, Renyi entropy, Order statistics, Bonferroni and Lorenz curves, Survival.

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