THE GENERALIZED ODD LOG-LOGISTIC NADARAJAH HAGHIGHI DISTRIBUTION: STATISTICAL PROPERTIES AND DIFFERENT METHODS OF ESTIMATION

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SUMMARY

In this work, a new four-parameter version of the Nadarajah Haghighi distribution is introduced and studied. The new density function can be expressed as a straightforward linear mixture of exponentiated Nadarajah Haghighi density. The failure rate of the new distribution can be constant or bathtub or **J** shape or increasing-constant-increasing or upside-down or decreasing or upside down-bathtub or increasing or increasing-constant. The density function of the new model can be unimodal and bimodal with many important shapes. Some of its statistical properties are derived. We describe different frequentist approaches, namely, the maximum likelihood, L-Moments, percentile based estimators and Bayesian estimation and compare them using extensive numerical Monte Carlo simulations and an application to real data set. The flexibility of the new model is illustrated using a real data application.

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