The Transmuted Generalized Gamma Distribution: Properties and Application

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Abstract: The generalized gamma model has been used in several applied areas such as engineering, economics and survival analysis. We provide an extension of this model called the transmuted generalized gamma distribution, which includes as special cases some lifetime distributions. The proposed density function can be represented as a mixture of generalized gamma densities. Some mathematical properties of the new model such as the moments, generating function, mean deviations and Bonferroni and Lorenz curves are provided. We estimate the model parameters using maximum likelihood. We prove that the proposed distribution can be a competitive model in lifetime applications by means of a real data set.

Keywords: maximum likelihood, mean deviation, moment generating function, generalized gamma distribution.