



Transmuted generalized Gompertz distribution for modelling reliability data

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Abstract

This paper introduces the four parameter transmuted generalized Gompertz distribution which is a generalization of the generalized Gompertz distribution and studies its statistical properties. The proposed model possesses the increasing or decreasing bathtub shape for its instantaneous failure rates. We obtain the analytical shapes of density and hazard functions. Explicit expressions are derived for the quantile, moments and entropy. The model parameters are estimated by the method of maximum likelihood. Finally, an application of the new distribution is illustrated using reliability data.

Keywords: Reliability functions; moment estimation; maximum likelihood estimation.