TRANSMUTED KUMARASWAMY-INVERSE EXPONENTIAL DISTRIBUTION: ITS PROPERTIES AND APPLICATIONS

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ABSTRACT
This article introduces a four-parameter probability distribution obtained by introducing an additional parameter to the Kumaraswamy-Inverse Exponential distribution. The three-parameter Kumaraswamy-Inverse Exponential distribution was generalized to its four-parameter variant entitled Transmuted Kumaraswamy-Inverse Exponential Distribution (TK-IED) using the quadratic rank transmutation map introduced in an earlier study. Mathematical expressions for its moments, moment generating function (mgf), the limiting behavior, Reliability analysis and the quantile function of the proposed model were presented. The parameters of the new distribution were estimated using the method of maximum likelihood. The proposed distribution provides better fits compared to some baseline distributions.

Keywords: Transmutation, moments, estimation, hazard rate, asymptotic behavior, performance metrics

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