

The beta burr type X distribution properties with application

ABSTRACT

We develop a new continuous distribution called the beta-Burr type X distribution that extends the Burr type X distribution. The properties provide a comprehensive mathematical treatment of this distribution. Furthermore, various structural properties of the new distribution are derived, that includes moment generating function and the r th moment thus generalizing some results in the literature. We also obtain expressions for the density, moment generating function and r th moment of the order statistics. We consider the maximum likelihood estimation to estimate the parameters. Additionally, the asymptotic confidence intervals for the parameters are derived from the Fisher information matrix. Finally, simulation study is carried at under varying sample size to assess the performance of this model. Illustration the real dataset indicates that this new distribution can serve as a good alternative model to model positive real data in many areas.

Keyword: Quantile function; Moment; Order statistics; Estimation