Some properties of Gamma Burr type X distribution with application

ABSTRACT

We develop a new continuous distribution called the Gamma-Burr type X (GBX) distribution that extends the Burr type X distribution that has increasing, decreasing and bathtub shapes for the hazard function. Various structural properties of this new distribution are provide, that includes the limit behavior, Quantile function and sub-models. From the generalization of the probability density function and cumulative distribution function of this distribution, the expression for the rth moment, moment generating function, Rényi entropy, and the order statistics can be established. We considered the maximum likelihood estimation to estimate the parameters. A real data set is applied to illustrate the usefulness of the GBX distribution. This new distribution will serve as an alternative model to other models available in the literature for modeling positive real data in many areas.

Keyword: Burr type X; GBX distribution; Quantile function; Application