

## **Weibull Burr X distribution properties and application**

### **ABSTRACT**

In this paper, we developed a new continuous distribution called the Weibull-Burr type X distribution which extends the Burr type X distribution. We obtained expressions for the density and the cumulative function. We also derived various structural properties of the new distribution are included Quantile function, the moment, moment generating function, Renyi entropy and Order statistics. We estimate parameters by using Least Square, Weighted Least Square and Maximum Likelihood methods. additionally, the asymptotic confidence intervals for the parameters are derived from the Fisher information matrix. Finally, the obtained results are validated using a real data set and is shown that the new family provides a better fit than some other known distributions. This new distribution will serve as an alternative model to other models available in the literature for modelling positive real data in many areas.

**Keyword:** Quantile function; Moment; Order statistics; Estimation