

## **Exponentiated Kumaraswamy Exponentiated Weibull distribution with application**

### **ABSTRACT**

In this article, a new distribution called the Exponentiated Kumaraswamy Exponentiated Weibull (EKEW) that extends the exponentiated Weibull distribution is derived and studied. The distribution has six parameters that can be expressed as a mixture of Exponentiated Weibull (EW) distribution. We obtain general explicit expression for the quantile function which can be used to find some essential measures, such as Bowleys skewness and Moors kurtosis. Furthermore, the quantile function can be used to generate data for simulation study. Several sub models are determined. The parameters are estimated by using the maximum likelihood method. The finite sample properties are assessed by using simulation study. A real dataset is used to demonstrate the potentiality and flexibility of EKEW distribution.

**Keyword:** Quantile function; Sub models; Maximum likelihood estimation; Simulation