

A New Modified Weibull Distribution

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Abstract

In this paper we introduce a four-parameter generalized Weibull distribution. This new distribution has a more general form of failure rate function. It is able to model six ageing classes of life distributions with appropriate choice of parameter values so that it is displayed decreasing, increasing, bathtub shaped, unimodal, increasing-decreasing increasing and decreasing-increasing-decreasing failure rates. The new distribution has also a bimodal density function. The moments are obtained and the method of maximum likelihood is used to estimate the model parameters. Also, the observed information matrix is obtained. Two applications are presented to illustrate the advantage of the proposed distribution.

Figure 1:

Figure 2:

in fig: 1

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