

## MODIFIED NEW EXTENDED WEIBULL DISTRIBUTION

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### ABSTRACT

This article is devoted to study a new four-parameter model, called Modified New Extended Weibull distribution, that exhibits either increasing, unimodal or modified unimodal shaped failure rates. Some of its statistical properties such as moments, quantile, generating functions and densities of the order statistics are obtained. The method of maximum likelihood will be used, for estimating the model parameters. The proposed model will be illustrated, by analyzing a real data set, and goodness of fit result of the proposed model will be compared with Weibull and four of its foremost modifications, including new extended Weibull (NEx-W), Flexible Weibull extension (FWEx), generalized power Weibull (GPW) and Kumaraswamy generalized power Weibull (Ku-GPW) distributions.

**KEYWORDS:** Flexible Weibull Extension, Unimodal and Modified Unimodal Failure Rates, Moment Generating Function, Order Statistics, Maximum Likelihood Estimates