

# Statistical inference based on progressively type II censored data from Weibull model

by

Mohammad Z. Raqab<sup>a</sup>, Raed R. Abu Awwad<sup>b</sup>, Intesar Al-Mudahakha<sup>c</sup>

<sup>a,c</sup>Department of Statistics and Operations Research, Kuwait University, Safat 13060, Kuwait

<sup>b</sup>Department of Mathematics, University of Jordan, Amman 11942, Jordan

In this paper, we consider the problem of estimating the shape and scale parameters and predicting the unobserved removed data based on a progressive type II censored sample from the Weibull distribution. Maximum likelihood and Bayesian approaches are used to estimate the scale and shape parameters. The sampling-based method is used to draw Monte Carlo (MC) samples and it has been used to estimate the model parameters and also to predict the removed units in multiple stages of the censored sample. A real data set is presented and analyzed for illustrative purposes and Monte carlo simulations are performed to study the behavior of the proposed methods.

Keywords: Maximum likelihood estimation, Bayes estimation, Bayes prediction, Monte Carlo simulation.

\* Email: [mraqab@ju.edu.jo](mailto:mraqab@ju.edu.jo) (M. Raqab), [raed\\_abuawwad@yahoo.com](mailto:raed_abuawwad@yahoo.com) (R. Abu Awwad), [intesarm@stat.kuniv.edu](mailto:intesarm@stat.kuniv.edu) (I. Al-Mudahakha)