Prediction of Survival Times of Censored Items in a Simple Step-Stress Model with Progressive Type II Censoring

Indrani Basak*
Penn State Altoona, Altoona, USA - i8b@psu.edu

N. Balakrishnan
McMaster University, Hamilton, Canada - bala@univmail.cis.mcmaster.ca

In this article, we consider the problem of predicting survival times of units from the Exponential distribution which are censored under a simple step-stress model. Progressive Type II censoring are considered. Two kinds of predictors - the maximum likelihood predictors (MLP) and the conditional median predictors (CMP) are derived. Some numerical examples are presented to illustrate the prediction methods discussed here. Using simulation studies, prediction intervals are generated for these examples. Then we compare the MLP and the CMP with respect to mean squared prediction error (MSPE) and the prediction interval.

Keywords: Conditional median predictor; Maximum likelihood predictor; Mean squared prediction error; Prediction Interval.