ONE-SAMPLE PREDICTION USING GENERALIZED ORDER STATISTICS FROM THE INVERSE WEIBULL MODEL

Abdullah Y. Al-Hossain

Abstract

Based on a one-sample scheme, Bayesian and maximum likelihood predictions (MLP) for future generalized order statistics (GOS) from the inverse Weibull distribution (IWD) are obtained and discussed. First we consider Bayesian prediction intervals (BPI) and Bayesian point prediction, and we have examined point predictions under symmetric and asymmetric loss functions. The prior belief of the experimenter is measured by discrete-continuous prior. The maximum likelihood prediction interval (MLPI) using "plug-in" procedure for the future GOS's are also derived. Bayesian and ML predictions both point and interval prediction of the future lower record values (LRVs) are obtained as a special case of GOS. A practical example using real data set is used to illustrate the results developed here. Finally, some numerical results using simulation study were reported. A study of 1000 randomly generated samples of future lower record values from the same distribution shows that the actual prediction levels are satisfactory.