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Statistical inferences based on INID progressively type II censored order statistics

M. Razmkhah[1] · S. Simriz[1]

Abstract Suppose that the failure times of the units placed on a life-testing experiment are independent but nonidentically distributed random variables. Under progressively type II censoring scheme, distributional properties of the proposed random variables are presented and some inferences are made. Assuming that the random variables come from a proportional hazard rate model, the formulas are simplified and also the amount of Fisher information about the common parameters of this family is calculated. The results are also extended to a fixed covariates model. The performance of the proposed procedure is investigated via a real data set. Some numerical computations are also presented to study the effect of the proportionality rates in view of the Fisher information criterion. Finally, some concluding remarks are stated.

Keywords Fisher information · Maximum likelihood estimator · Cramer–Rao lower bound · Proportional hazard rate family · Exponential family · Weibull distribution · Fixed covariates model

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✉ M. Razmkhah
  razmkhah_m@um.ac.ir

[1] Department of Statistics, Faculty of Mathematical Sciences, Ferdowsi University of Mashhad, P. O. Box 1159, Mashhad 91775, Iran