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Estimation in a model of sequential order statistics with ordered hazard rates. (English)

Zbl 1341.62074

Choudhary, Pankaj K. (ed.) et al., Ordered data analysis, modeling and health research methods. In honor of H. N. Nagaraja's 60th birthday. Selected papers based on the presentations at the international conference, Austin, TX, USA, March 7–9, 2014. Cham: Springer (ISBN 978-3-319-25431-9/hbk; 978-3-319-25433-3/ebook). Springer Proceedings in Mathematics & Statistics 149, 105-119 (2015).

Summary: As a generalization of order statistics from independent and identically distributed random variables, sequential order statistics (SOSs) may be applied as a model for ordered data, when assuming changes of underlying distributions immediately after the occurrences of ordered observations. For example, in the case of a model for k -out-of- n -systems, where the $n - k + 1$ failures of components in a system of n components occur successively, a change of the respective underlying distribution after a failure is motivated by an increased load put on the remaining components. The corresponding cumulative distribution functions are assumed to have possibly different ordered hazard rates, which are further multiplied by factors, in order to build the hazard rates of the SOSs. These factors are the parameters of interest. Estimation of the parameters is considered by means of maximum likelihood under order restriction, by means of link functions, and in a Bayesian set-up with an order statistics prior.

For the entire collection see [[Zbl 1337.92005](#)].

MSC:

62F10 Point estimation
60E15 Inequalities; stochastic orderings
62F15 Bayesian inference
62L10 Sequential statistical analysis

Cited in 1 Document

Keywords:

order statistics; increasing hazard rate; proportional hazard rate; maximum likelihood estimation; link function; Bayesian estimation

Full Text: [DOI](#)

References:

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