Statistics > Methodology

Testing Exponentiality Based on Rényi Entropy With Progressively Type-II Censored Data

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We express the joint R\'enyi entropy of progressively censored order statistics in terms of an incomplete integral of the hazard function, and provide a simple estimate of the joint R\'enyi entropy of progressively Type-II censored data. Then we establish a goodness of fit test statistic based on the R\'enyi Kullback-Leibler information with the progressively Type-II censored data, and compare its performance with the leading test statistic. A Monte Carlo simulation study shows that the proposed test statistic shows better powers than the leading test statistic against the alternatives with monotone increasing, monotone decreasing and nonmonotone hazard functions.

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