

Statistical Inference for the Kumaraswamy Parameters Using Progressively Censored Data

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Abstract

In this paper, we delve into the process of making inferences about the parameters of the Kumaraswamy distribution using progressively type-II censored data. Our approach involves employing the method of maximum likelihood to derive point estimates for the model parameters. We establish the existence and uniqueness of these maximum likelihood estimators. Additionally, we present pivotal quantities that enable the construction of exact confidence intervals and joint confidence regions for the model parameters. To assess the performances of our proposed estimation techniques, we conduct comprehensive simulation studies. In conclusion, we apply the introduced estimation methods to analyze and discuss the results obtained from a real dataset, providing practical insights into their performance.