



Progressive Type–II Censoring Power Function Distribution Under Binomial Removals

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Abstract: Recently, progressive censoring received significant attention in many applications in engineering system reliability and survival analysis. Different lifetime models are used in the literature for progressive censoring, such as the Pareto, exponential, generalized exponential, Gompertz, Burr Type–XII, Rayleigh, generalized logistic, and exponentiated gamma distributions. A power function model is characterized by its simple mathematical structure and is easily implemented to determine failure rates and reliability values. The model is found to be useful in modeling electrical components. This work considers the estimation problem for a power function model based on progressive Type–II censoring using binomial removals. A simulation study was performed to investigate the behavior of the estimators using different sample sizes, parameter values and censored proportions. As an illustration, an application to failure time data set is presented.

Keywords: *censoring; estimation; power function distribution; reliability; simulation; survival analysis.*

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