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Efficiency of maximum likelihood estimators under different censored sampling schemes for rayleigh distribution.

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The objective of this article is to study the effect of different types of censored sampling schemes on the estimation of the unknown parameter for Rayleigh distribution. The censored sampling schemes namely: type-I, type-II and progressive type-II censored sampling are to be considered. The comparisons made between the samples are based on the Fisher information, expected duration of the life test and the mean squared error of the maximum likelihood estimators. A numerical study is carried out to assess these effects. The results indicate that, if the experimenter would reduce the required time to conclude the test, then he should prefer type II censored sampling than type-I. Consequently, type II is more efficient than type I and type II in multistage is more efficient than type II in one stage. (orig.)

Classification: K90

Keywords: type-I, type-II and progressive type-II censored sampling; maximum likelihood estimator; mean square error; Fisher information; expected duration