## Statistical power of goodness of fit tests based on the empirical distribution function for Type I censored data

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## Abstract

In this study the power of common goodness of fit statistics based on the empirical distribution function (EDF) was simulated for single Type I censored data. The relative power of the Kolmogorov-Smirnov (D), Cramer-Von-Mises  $(W^2)$  and Anderson-Darling  $(A^2)$  statistics was investigated varying the null and the alternative distributions, the sample size, the degree of censoring and the significance level.

The exponential, Weibull, log-logistic and log-normal lifetime distributions are considered as they are among the most frequently used when modeling censored data.

We conclude giving some general recommendations for testing the distributional assumption of parametric survival models in homogeneous populations when using EDF goodness of fit statistics.

## Keywords

Censored data, Exponential distribution, Goodness of fit, Log-logistic distribution, Log-normal distribution, Power, Simulation, Weibull distribution.

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