

Pajjayakarn Promdan 2009: Some Goodness of Fit Tests for Generalized Exponential Distribution. Master of Science (Statistics), Major Field: Statistics, Department of Statistics. Thesis Advisor: Assistant Professor Winai Bodhisuwan, Ph.D. 133 pages.

Goodness of fit tests for the generalized exponential distribution in this research are Kolmogorov-Smirnov test, Anderson-Darling test, Cramer-von Mises test and Jarque-Bera test. Parameter estimation in this study using maximum likelihood method, some investigations on the probability of Type I error and comparison of power of the test. The studied data are consisting of Weibull distribution and log-normal distribution. The sample sizes are 10, 20, 30, 40 and 50. The specified significance levels are 0.10, 0.05 and 0.01. Random variate generation is using inverse transform technique, then simulation study based on some situations is done with 1,000 replications of each situation.

The results of these studies can be summarized as following: Anderson-Darling test is the best in controlling the probability of type I error, while Cramer-von Mises test and Kolmogorov-Smirnov test can control the probability of type I error in moderate manner, but Jarque-Bera test can not control the probability of type I error at all significant levels. Most cases of Anderson-Darling test are giving high power of the test and the highest sensitivity when tested under the alternative hypothesis is log-normal distribution. The Cramer-von Mises test and Kolmogorov-Smirnov test give a moderate power of test. The power of test can be improved when large sample sizes.

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