A New Goodness of Fit Test for the Logistic Distribution

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Abstract

The logistic distribution is often used in survival analysis and biological studies to model growth curves. In this paper we present a method to test if the available data come from a logistic distribution. The proposed test is a modification of the Greenwood statistic based on higher order spacings as proposed by Rao and Kuo (1984). Parameters of the distribution are estimated by the method of moments and the method of maximum likelihood in order to compute the test statistic. Power comparisons of the test for both methods of estimation are carried out via simulations. It is concluded that the test statistic based on the method of moments has higher power.

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Key Words: Goodness of fit Testing; Greenwood's statistic; higher order spacings.