Multivariate normality test using Srivastava's skewness and kurtosis

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Abstract

We consider the multivariate normality test based on the sample measures of multivariate skewness and kurtosis defined by Srivastava (1984). Jarque and Bera (1987) proposed the test statistic by using both the univariate sample skewness and kurtosis as the univariate normality test. For the multivariate case, Koizumi, Okamoto and Seo (2009) proposed test statistics by using Srivastava's sample skewness and kurtosis, which are asymptotically distributed as χ^2 -distribution. However, they did not derive variance of their test statistics. We propose a new test statistic using variance of the test statistic derived by Koizumi, Okamoto and Seo (2009). In order to evaluate accuracy of proposed test statistic, the numerical results by Monte Carlo simulation for some selected values of parameters are presented.

Keywords

Multivariate skewness, Multivariate kurtosis, Jarque-Bera test, Test for multivariate normality.

References

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