Testing independence by step-down multiple comparison procedure

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Abstract

We consider testing independence among components of the random vector in multivariate normal populations. The likelihood ratio test statistic and the chi-square distribution which is the asymptotic distribution are used for this test. In addition, the modified likelihood ratio test statistic which makes the chi-square approximation better is known (see, e.g., Muirhead (1982)). In this study, we consider the case to test which components there is a correlation among of the random vector. Also, we propose a step-down multiple comparison procedure based on the closed testing procedure (Marcus, Peritz and Gabriel (1976)) to perform simultaneous test for independence among components of the random vector.

Keywords

Closed testing procedure, Modified likelihood ratio, Step-down multiple comparison procedure, Testing independence.

References

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