

Simultaneous testing hypotheses in models with blocked compound-symmetric covariance structure

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Abstract

In the presentation will be considered simultaneous testing hypotheses about structure of mean vector and covariance matrix in models with some special covariance structure, so-called blocked compound-symmetric (BCS) covariance structure, for m -variate observations over u levels of some factor on each of n individual under the assumption of multivariate normality. Using framework of ratio of positive and negative parts of best unbiased estimators test statistic for simultaneous test is obtained and can be proved that under null hypothesis the statistic has exact F distribution. Simulation study is conducted to show strong and weak sides of considered test which is compared with two other F tests for testing single hypotheses about mean and covariance matrix.

Keywords

Best unbiased estimator, Testing hypotheses, Structure of covariance matrices, Structure of mean vector, Positive and negative part of estimator, Block compound symmetric covariance structure, Double multivariate data.

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