

Multivariate nonparametric tests in a randomized complete block design

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Abstract

Multivariate extensions of the Friedman and Page tests for the comparison of several treatments are introduced. Related unadjusted and adjusted treatment effect estimates for the multivariate response variable are also found and their properties discussed. The test statistics and estimates are analogous to the traditional univariate methods. In test constructions, the univariate ranks are replaced by multivariate spatial ranks. Asymptotic theory is developed to provide approximations for the limiting distributions of the test statistics and estimates. Limiting efficiencies of the tests and treatment effect estimates are found in the multivariate normal and t distribution cases. The theory is illustrated by an example.

Keywords

Multivariate Friedman Test, Multivariate Page Test.

References

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