

On a new approach to the ANOVA for experiments with orthogonal block structure. Experiments in row-column designs

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Abstract

The main estimation and hypothesis testing procedures are presented for experiments conducted in row-column designs of a certain desirable type. It is shown that, under appropriate randomization, these experiments have the convenient orthogonal block structure. Due to this property, the analysis of experimental data can be performed in a comparatively simple way. Relevant simplifying procedures are indicated.

The main advantage of the presented methodology concerns the analysis of variance and related hypothesis testing procedures. Under the adopted approach one can perform these analytical methods directly, not by combining results from analyses based on some stratum submodels.

Practical application of the presented theory is illustrated by examples of real experiments in the relevant row-column designs.

Keywords

Analysis of variance, Estimation, Hypothesis testing, Orthogonal block structure, Randomization-derived model, Row-column designs.

References

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