Optimal and Efficient Designs for Comparing a Set of Test Treatments with a Set of Controls in a Heteroscedastic One-Way Layout with Covariates

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Aims and scope

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Abstract

In the present article, we consider a heteroscedastic one-way layout model incorporating a set of controllable covariates. With the focus on the joint estimation of the elementary contrasts of a set of test treatments with a set of controls and the effects of covariates, we identify sufficient conditions for the existence of an A-optimal design. When these sufficient conditions are not satisfied, we propose highly A-efficient designs. The methods of construction of A-optimal and highly A-efficient designs are discussed. For

different values of the parameters of the design, A-efficiency of the proposed designs is tabulated and relevant plots are presented for a comparative study.

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Additional information

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