(Still) Testing for fixed effects in general linear models

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Abstract

Seemingly, testing for fixed effects in linear models with variance-covariance components has been solved for decades. However, even in simple situations such as in fixed one-way model with heteroscedastic variances (a multiple means case of the Behrens-Fisher problem) the questions of statistical properties of various approximations of test statistics are still alive. Here we present a brief overview of approaches suggested in the literature as well as those available in statistical software, accompanied by a simulation study in which the accuracy of p-values is studied.

Keywords

Mixed linear model, Fixed effects, Heterogeneous variance

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