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**ROBUSTNESS AND EFFICIENCY OF SOME TESTS FOR
TESTING MAIN EFFECTS IN A RANDOMISED BLOCK
DESIGN**

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This study deals with the small sample empirical powers of five tests for testing the main effects in a randomized block design. The tests considered here are the parametric F test, Aligned rank test, Mack-Skillings test, test due to Silva and Quade and Rinaman normal score test respectively. The power comparison is carried out via Monte Carlo simulation and conclusions are drawn on the performance of the tests under different experimental situations. It is found that the parametric F test is the best in case of normal distribution and for few cases of double exponential and uniform distribution. In case of right-tailed skewed distribution like lognormal and exponential, Rinaman normal score test is more powerful than the other tests considered. Mack-Skillings test is uniformly more powerful than the other tests when data are drawn from logistic population.

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