TEST FOR EQUALITY OF INDEPENDENT MEANS WITH SKEW-NORMAL ERROR

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- *ABSTRACT: In design studies, the normality of the error terms is the usual assumption when tests for equality of independent means are performed. However, this assumption could be unrealistic and the inferences which come from these tests can not be reliable. In this paper, the normality assumption was encapsulated by the skew normally distributed error assumption. By the way, a new test for mean equality was proposed, based on quadratic forms. It will be used to test the overall equality hypothesis of independent means in the Bayesian approach. A practical application with a real data set was developed and discussed. On the evaluation of the performance of the proposed test, it was presented a Monte Carlo simulation in several experimental conditions. Moreover, the simulation results were compared with the usual F test. The proposed test has presented good performance by being exact or conservative in all simulated designs and, at the same time, has presented close power rates to the usual F test.*

- *KEYWORDS: Testing of hypothesis; skew-normal distribution; Bayesian inference; Monte Carlo simulation.*

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