DARUNEE LORMANEENOPARAT : A COMPARISON ON POWER OF TESTS FOR HOMOGENEITY OF MEANS FOR ONE-WAY CLASSIFICATION UNDER ORDER RESTRICTIONS
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The objective of this study was to compare the power of tests for homogeneity of means for one-way classification under order restrictions using F test statistic, Likelihood ratio test statistic and Test based on scores statistic. The comparison was made under normal population. Population was equal 3, 4, 5 and 6 and each population had equal sample size 5, 10 and 15. The Monte Carlo Simulation Technique was used by a computer program to calculate type I error and power of three tests 1,000 replications for each case.

Results and Conclusions: 1.Likelihood ratio test statistic and Test based on scores statistic were more powerful than F test statistic no matter the level of significance was determined either at 0.01 or 0.05 for all alternative hypothesis form and sample sizes in this study 2. Likelihood ratio test statistic was the most powerful test for simple order and simple tree order(decreasing) alternative hypothesis with known variance value. 3. Test based on scores was the most powerful test for simple tree order (increasing) alternative hypothesis with known variance value. 4. Test based on score was more powerful than Likelihood ratio test statistic for simple order(increasing) alternative hypothesis with unknown variance value but large population(k=6) Likelihood ratio test statistic was more powerful than one. 5. The power of Test based on scores and Likelihood ratio test were approximately close to each other for simple order(decreasing) alternative hypothesis with unknown variance value but large population(k=6) Likelihood ratio test statistic was more powerful than one. 6. Test based on scores was more powerful than Likelihood ratio test for simple tree order (increasing) alternative hypopulation with small population(k=3) and for simple tree order(decreasing) alternative hypothesis with large population (k=4, 5 and 6) when unknown variance value.