

Salinee Khuankham 2012: Test Statistic for Multiple Comparison of Nonnormal Distribution. Master of Science (Statistics), Major Field: Statistics, Department of Statistics. Thesis Advisor: Assistant Professor Winai Bodhisuwan, Ph.D. 107 pages.

The purpose of this study was to investigate of the multiple comparison among three different methods: Tukey-Karmer, Baumgartner-Weiß-Schindler and Dwass-Steel and Critchlow-Fligner when data are taken from a nonnormal distribution. Data were simulated by using programming language R 2.13.1 and then data analysis has done by SAS 9.1 program. Each situation under specified conditions was repeated 500 times.

The result show that when sample size are equal and not equal, Baumgartner-Weiß-Schindler has per-comparison error rate (PCER) near 0.05 than another methods and Dwass-Steel and Critchlow-Fligner has familywise-comparison error rate (FWER) near 0.05 than another methods except when data are normal distribution and sample size are not equal Tukey-Karmer has FWER rate near 0.05 than another methods and this study was found that the FWER are direct variation with number of comparisons. When data has different means this study was found that PCER and FWER of Tukey-Karmer are reverse with number of pairs with different means, but Baumgartner-Weiß-Schindler and Dwass-Steel and Critchlow-Fligner are direct variation with number of pairs with different means except when data are exponential distribution PCER and FWER of Baumgartner-Weiß-Schindler and Dwass-Steel and Critchlow-Fligner are reverse. Power of test of all methods are roughly high.

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