Tukeys confidence intervals
stats545.4 545.4 Multivariate confidence intervals

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October 14, 2022

Pairwise multiple comparisons

Tukey's method for pairwise comparisons works!

Tukeys confidence intervals

The Tukey test is used in the one-way layout, when there is an interest in all pairwise comparisons.

For equal sample sizes J in each cell, the simultaneous confidence intervals using Tukey's method in the one-way layout are as follows:

$$\bar{y}_{i.} - \bar{y}_{j.} \pm q_{1-\alpha,g,N-g} \times \sqrt{MSE/J}$$

where $q^* = q_{1-\alpha,g,N-g}$ is the appropriate quantile from Tukey's studentized range distribution.

Tukey's confidence intervals are appropriate for the one-way layout, when there is an interest in all pairwise comparisons.

For equal sample sizes J in each cell, the simultaneous confidence intervals using Tukey's method in the one-way layout are as follows:

$$\bar{y}_{i.} - \bar{y}_{j.} \pm q_{1-\alpha,g,N-g} \times s/\sqrt{J}$$

where $s^2 = MSE$ and $q^* = q_{1-\alpha,g,N-g}$ is the appropriate quantile from Tukey's studentized range distribution.

For unequal sample sizes one can use

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