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Semiparametric rank tests: a new perspective on an old class of tests and a gateway to new rank tests

Abstract:

We demonstrate how many classical rank tests, such as the Wilcoxon-Mann-Whitney, Kruskal-Wallis, and Friedman tests, can be embedded in a semiparametric statistical modelling framework and how our method can be used to construct new tests for more complicated designs. In addition to hypothesis testing, the method allows for estimating effect sizes with an informative interpretation, resulting in a better understanding of the data. The method will be illustrated by analysing several data sets using an R-package.