

Ranking Procedures for Repeated Measures Designs with Missing Data - a Further Approach

Bianca Materne

September 23, 2021

Abstract

Purely non-parametric methods for the analysis of repeated measure designs with missing values are developed further. We investigate the behavior of the ANOVA-type (ATS) statistic and multiple contrast test (MCT) procedures especially in case of small sample sizes. Since former research showed liberal behavior for these test procedures, we present three approaches to improve the test statistics. We investigate new estimators as well as a new approximation for the distribution of the ATS by using the method by Box (1954). A wild bootstrap is performed for the ATS and the MCT. Simulation studies verify the influence of parameters such as sample sizes or number of repeated measurements. Finally, the developed techniques are applied to a real data set serving as a working example.