



Comparison of block bootstrap testing methods of mean difference for longitudinal data

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In this paper, we focus on a two-sample problem, and compare three block bootstrap testing methods for detecting the difference of two means in longitudinal data when the data of two groups are not paired. For the detection of mean difference of two groups, we here consider the following four types of test statistics: (i) sum of absolute values of difference between two mean sequences, (ii) sum of squares of difference between two mean sequences, (iii) estimator of area-difference between two mean curves, and (iv) difference of kernel estimators based on two mean sequences. The block resampling techniques considered here include moving block bootstrap, circular block bootstrap and stationary bootstrap. These are used to approximate the null distributions of test statistics. Monte Carlo simulations are carried out in order to examine the sizes and powers of the testing methods.

Keywords: two-sample problem; block resampling; comparison of mean curves; sizes and powers of tests.