Tests for profile analysis based on two-step monotone missing data

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Abstract

We consider profile analysis when the data has two-step monotone missing observations. For two-sample profile analysis, there are three hypotheses of interest in comparing the profiles of two samples: two profiles are parallel, two profiles are same level, and two profiles are flat. The T^2-type statistics and their asymptotic null distributions for the three hypotheses are given. We propose the approximate upper percentiles of these test statistics. When the data dose not have the missing observations, the test statistics reduce to the usual test statistics given, for example, in Morrison (2005). Further, we consider a parallel profile model for several groups when the data has two-step monotone missing observations. Under the assumption of non-missing data, the likelihood ratio test procedure are derived by Srivastava (1987). We derive the test statistic based on the likelihood ratio. Finally the accuracy of the approximate values are investigated by Monte Carlo simulation for some selected values of parameters.

Keywords

Profile analysis, Two-step monotone missing data.

References

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[2] Srivastava, M.S. (1987). Profile analysis of several groups. *Comm. Statist. Theory Methods 16*, 909–926.