

Data-driven Rank Test for Two-sample Problem

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Classical linear rank tests are known to have low power for a large spectrum of alternatives. During the last thirty years there have been several attempts to extend the range of sensitivity of linear rank tests to larger classes of alternatives. We shall present a solution to this problem proposed by Janic-Wróblewska and Ledwina (2000). A new test statistic is a sum of squares of some linear rank statistics while the number of summands is chosen via a data-based selection rule.

We shall present the procedure along with its basic properties and some simulation results. Moreover, the question of its asymptotic optimality will be briefly addressed. Since the test has been designed to be sensitive for a broad range of alternatives, we aim at showing its efficiency under general nonparametric alternatives. This has led us to propose a modification of Stein's famous postulate, which, in the case of the two-sample problem, has been tailored to contiguous shift families.

The contribution is based on the following two papers.

Ducharme, G. R. and Ledwina, T. (2001). Efficient and adaptive nonparametric test for the two-sample problem. *Submitted*.

Janic-Wróblewska, A. and Ledwina, T. (2000). Data driven rank test for two-sample problem. *Scand. J. Statist.* **27** 281-297.