

Rank tests of symmetry with measurement errors

Radim Navrátil

Charles University, Prague, Czech Republic

Abstract

In many practical applications we often need to test the hypothesis that the new treatment is better than the current, or that older twin has different properties than younger, or for example the left eye can see sharper than the right one. In all these situations we use one-sample test of symmetry. We will consider rank tests for their simplicity, robustness and other profitable properties. In many cases when the values of the random variable of our interest are obtained by measurement can happen that we do not get the accurate value of the random variable, but we get the value affected by measurement error. Application of parametric methods in this case is not very convenient, because we do not know the exact distribution of the errors and their estimation can make the situation more difficult. We will show how easy the rank tests can deal with this situation.

Keywords

Ranks, Tests of symmetry, Measurement errors.

References

- Jurečková, J., Picek, J. (2009). Rank tests in partially linear and measurement errors models. Submitted.
- Jurečková, J., Picek, J., and Saleh, A. K. Md. E. (2009). Rank tests and regression rank score tests in measurement error models. *Comput. Statist. Data Anal.*, doi:10.1016/j.csda.2009.08.020.
- Jurečková, J., Kalina, J., Picek, J., and Saleh, A. K. Md. E. (2009). Rank tests of linear hypothesis with measurement errors both in regressors and responses. *KPMS Preprint 66*, MFF UK, Praha.