Behaviour of Sign Test and One Sample Median Test Against Changes in the Model

Alfonso García-Pérez

Abstract: The sign test and the test based on the sample median are asymptotically equivalent and as a consequence, equivalent from a robustness point of view because the most important robust measures in hypotheses testing are asymptotic. However, as this paper proves, the behaviour of their power functions against changes in the model, inside a class of distributions, is appreciably different for finite samples sizes. A new definition of sensitivity of tests with respect to the type of the alternative is defined and, with it, we see that the one sample median test is less sensitive than the sign test.