WIKIPEDIA

Size (statistics)

In statistics, the **size** of a test is the probability of falsely rejecting the null hypothesis. That is, it is the probability of making a Type I error. It is denoted by the Greek letter α (alpha). For a simple hypothesis,

$$\alpha = P(\text{test rejects } H_0 | H_0).$$

In the case of a composite null hypothesis, the size is the supremum over all data generating processes that satisfy the null hypotheses.[1]

$$\alpha = \sup_{h \in H_0} P(\text{test rejects } H_0 | h).$$

A test is said to have significance level α if its size is less than or equal to α. In many cases the size and level of a test are equal.

References

1. Davidson, Russell; MakKinnon, James G. (2004). *Econometric theory and methods*. New York, NY [u.a.]: Oxford Univ. Press. ISBN 978-0-19-512372-2.