

The power of a binary hypothesis test is the probability that the test correctly rejects the null hypothesis ( $H_0$ ) when a specific alternative hypothesis ( $H_1$ ) is true. The statistical power ranges from 0 to 1, and as statistical power increases, the probability of making a type 2 error decreases. For a type 2 error probability of  $\beta$ , the corresponding statistical power is  $1-\beta$ . For example, if experiment 1 has a statistical power of 0.7, and experiment 2 has a statistical power of 0.95, then there is a stronger probability that experiment 1 had a type 2 error than experiment 2, and experiment 2 is more reliable than experiment 1 due to the reduction in probability of a type 2 error. It can be equivalently thought of as the probability of accepting the alternative hypothesis ( $H_1$ ) when it is true—that is, the ability of a test to detect a specific effect, if that specific effect actually exists.

Usually set as 20%.

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