Chi-square

Science, Statistics

Chi-square and the Independent t-test Here s Here Chi-square and the Independent t-test The independent t-test is a parametric test that compares scores between two unrelated groups of subjects (sometimes a control group and an experimental group). The measurements must be obtained on a continuous (interval or ratio) scale. This test should be used when it is known or expected that scores from both groups follow a normal distribution, have comparable variances, and have identical sample sizes (there are variations available for other circumstances). This test involves the use of the standardized " t" distribution (or student's t) and is used to determine if there is a significant difference between the mean scores of each tested group (Grimm, 1993).

The chi-square goodness-of-fit test is a nonparametric test that uses the frequency distribution of a set of sample observations to make an inference about the frequency distribution of a hypothesized distribution. The measurements must be obtained on a nominal (categorical) scale. The test should be used only when parametric assumptions cannot be met (power for non-parametric tests is lower than parametric), as it does not require the fulfillment of parametric expectations. This test uses the chi-square distribution and is used to determine if there is a " fit" between the frequency distributions of the samples and the hypothesized distribution. The decision to use either the independent-t or chi-square test should be made based on the type of data collected (continuous or discontinuous) and the status of required assumptions for parametric testing.

Reference

Grimm, L. (1993). Statistical applications for the behavioral sciences. New

York: Wiley.