In [statistics](http://en.wikipedia.org/wiki/Statistics), **Levene's test**[[1]](http://en.wikipedia.org/wiki/Levene's_test#cite_note-Levene1960-1) is an inferential statistic used to assess the equality of [variances](http://en.wikipedia.org/wiki/Variance) for a variable calculated for two or more groups. Some common statistical procedures assume that variances of the populations from which different samples are drawn are equal. Levene's test assesses this assumption. It tests the [null hypothesis](http://en.wikipedia.org/wiki/Null_hypothesis) that the population variances are equal (called *homogeneity of variance* or [*homoscedasticity*](http://en.wikipedia.org/wiki/Homoscedasticity)). If the resulting *P*-value of Levene's test is less than some critical value (typically 0.05), the obtained differences in sample variances are unlikely to have occurred based on random sampling from a population with equal variances. Thus, the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population.

Some of the procedures typically assuming homoscedasticity, for which one can use Levene's tests, include [analysis of variance](http://en.wikipedia.org/wiki/Analysis_of_variance) and [t-tests](http://en.wikipedia.org/wiki/Student%27s_t-test).

Levene's test is often used before a comparison of means. When Levene's test shows significance, one should switch to generalized tests, free from homoscedasticity assumptions.

Levene's test may also be used as a main test, for answering a stand-alone question whether two sub-samples in a given population have equal or different variances.