How do I use the T.TEST function in Excel?

Authored by

stats writer

July 1, 2024

The T.TEST function in Excel is a statistical tool that allows users to perform a two-sample t-test to determine if there is a significant difference between two sets of data. To use the T.TEST function, users must input the two data sets they wish to compare, as well as specify whether the test is one-tailed or two-tailed, and the desired confidence level. The function then calculates the t-statistic and p-value, which can be used to interpret the results and determine the significance of the difference between the two data sets. The T.TEST function is a useful tool for conducting hypothesis testing and analyzing data in various fields such as business, finance, and science.

Returns the probability associated with a Student's t-Test. Use T.TEST to determine whether two samples are likely to have come from the same two underlying populations that have the same mean.

Syntax

T.TEST(array1,array2,tails,type)

The T.TEST function syntax has the following arguments:

Array1 Required. The first data set.

Array2 Required. The second data set.

Tails Required. Specifies the number of distribution tails. If tails = 1, T.TEST uses the one-tailed distribution. If tails = 2, T.TEST uses the two-tailed distribution.

Type Required. The kind of t-Test to perform.

Parameters

If type equals	This test is performed
1	Paired
2	Two-sample equal variance (homoscedastic)
3	Two-sample unequal variance (heteroscedastic)

Remarks

If array1 and array2 have a different number of data points, and type = 1 (paired), T.TEST returns the #N/A error value.

The tails and type arguments are truncated to integers.

If tails or type is nonnumeric, T.TEST returns the #VALUE! error value.

If tails is any value other than 1 or 2, T.TEST returns the #NUM! error value.

T.TEST uses the data in array1 and array2 to compute a non-negative t-statistic. If tails=1, T.TEST returns the probability of a higher value of the t-statistic under the assumption that array1 and array2 are samples from populations with the same mean. The value returned by T.TEST when tails=2 is double that returned when tails=1 and corresponds to the probability of a higher absolute value of the t-statistic under the "same population means" assumption.