

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

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The CONFIDENCE.T function in Excel is a statistical tool used to calculate the confidence interval for a data set with a Student's t-distribution. To use this function, the user must input the significance level, the standard deviation of the data, and the size of the sample. The function then returns the margin of error for the mean of the data, which can be used to estimate the range in which the true population mean is likely to fall. This can be useful in making decisions based on sample data and determining the reliability of the results. Overall, the CONFIDENCE.T function is a valuable tool for conducting statistical analysis and making informed decisions in Excel.

This article describes the formula syntax and usage of the **CONFIDENCE.T** function in Microsoft Excel.

Returns the confidence interval for a population mean, using a Student's t distribution.

Syntax

CONFIDENCE.T(alpha,standard_dev,size)

The CONFIDENCE.T function syntax has the following arguments:

Alpha Required. The significance level used to compute the confidence level. The confidence level equals $100 \times (1 - \text{alpha})\%$, or in other words, an alpha of 0.05 indicates a 95 percent confidence level.

Standard_dev Required. The population standard deviation for the data range and is assumed to be known.

Size Required. The sample size.

Remarks

If any argument is nonnumeric, CONFIDENCE.T returns the #VALUE! error value.

If $\text{alpha} \leq 0$ or $\text{alpha} \geq 1$, CONFIDENCE.T returns the #NUM! error value.

If $\text{standard_dev} \leq 0$, CONFIDENCE.T returns the #NUM! error value.

If size is not an integer, it is truncated.

If size equals 1, CONFIDENCE.T returns #DIV/0! error value.

Example

Copy the example data in the following table, and paste it in cell A1 of a new Excel worksheet. For formulas to show results, select them, press F2, and then press Enter. If you need to, you can adjust the column widths to see all the data.

| Formula | Description | Result |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| =CONFIDENCE.T(0.05,1,50) | Confidence interval for the mean of a population based on a sample size of 50, with a 5% significance level and a standard deviation of 1. This is based on a Student's t-distribution. | 0.284196855 |

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