How do I use the T.INV.2T function in Excel?

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The T.INV.2T function in Excel is used to calculate the inverse of the Student's t-distribution for a given probability and degrees of freedom. This function can be useful in statistical analysis and hypothesis testing. To use this function, simply enter the desired probability and degrees of freedom as arguments within the function syntax. The function will then return the corresponding t-value. This can help users make more accurate and informed decisions based on their data.

Returns the two-tailed inverse of the Student's t-distribution.

Syntax

T.INV.2T(probability,deg_freedom)

The T.INV.2T function syntax has the following arguments:

Probability Required. The probability associated with the Student's t-distribution.

Deg_freedom Required. The number of degrees of freedom with which to characterize the distribution.

Remarks

If either argument is nonnumeric, T.INV.2T returns the #VALUE! error value.

If probability <= 0 or if probability > 1, T.INV.2T returns the #NUM! error value.

If deg_freedom is not an integer, it is truncated.

If deg_freedom < 1, T.INV.2T returns the #NUM! error value.

T.INV.2T returns that value t, such that P(|X| > t) = probability where X is a random variable that follows the t-distribution and P(|X| > t) = P(X < -t or X > t).

A one-tailed t-value can be returned by replacing probability with 2*probability. For a probability of 0.05 and degrees of freedom of 10, the two-tailed value is calculated with T.INV.2T(0.05,10), which returns 2.28139. The one-tailed value for the same probability and degrees of freedom can be calculated with T.INV.2T(2*0.05,10), which returns 1.812462.

Given a value for probability, T.INV.2T seeks that value x such that T.DIST.2T(x, deg_freedom, 2) = probability. Thus, precision of T.INV.2T depends on precision of T.DIST.2T.

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.

Data	**Description**	
0.546449	Probability associated with the two-tailed Student's t-distribution	
60	Degrees of freedom	
Formula	**Description (Result)**	**Result**
=T.INV.2T(A2,A3)	T-value of the Student's t-distribution for the terms above (0.606533076)	0.606533