



## About statistical analysis tools

Microsoft Excel provides a set of data analysis tools — called the Analysis ToolPak — that you can use to save steps when you develop complex statistical or engineering analyses. You provide the data and parameters for each analysis; the tool uses the appropriate statistical or engineering macro functions and then displays the results in an output table. Some tools generate charts in addition to output tables.

**Related worksheet functions** Excel provides many other statistical, financial, and engineering worksheet functions. Some of the statistical functions are built-in and others become available when you install the Analysis ToolPak.

**Accessing the data analysis tools** The Analysis ToolPak includes the tools described below. To access these tools, click **Data Analysis** on the **Tools** menu. If the **Data Analysis** command is not available, you need to load the Analysis ToolPak [add-in](#) program.

- ▶ [Anova](#)
- ▶ [Correlation](#)
- ▶ [Covariance](#)
- ▶ [Descriptive Statistics](#)
- ▶ [Exponential Smoothing](#)
- ▶ [F-Test Two-Sample for Variances](#)
- ▶ [Fourier Analysis](#)
- ▶ [Histogram](#)
- ▶ [Moving Average](#)
- ▶ [Random Number Generation](#)
- ▶ [Rank and Percentile](#)
- ▶ [Regression](#)
- ▶ [Sampling](#)

▶ t-Test

▶ z-Test



## Perform a statistical analysis

1. On the **Tools** menu, click **Data Analysis**.

If **Data Analysis** is not available, load the Analysis ToolPak.

▶ [How?](#)

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2. In the **Data Analysis** dialog box, click the name of the analysis tool you want to use, then click **OK**.
3. In the dialog box for the tool you selected, set the analysis options you want.

You can use the **Help** button on the dialog box to get more information about the options.

## **A bibliography of statistical methods and algorithms**

The following book provides detailed information about the algorithms used to create the Microsoft Excel analysis tools and functions.

Strum, Robert D., and Donald E. Kirk. *First Principles of Discrete Systems and Digital Signal Processing*. Reading, Mass.: Addison-Wesley Publishing Company, 1988.

The following books provide detailed information about statistical methods or algorithms used to create the Microsoft Excel statistical tools and functions.

Abramowitz, Milton, and Irene A. Stegun, eds. *Handbook of Mathematical Functions, with Formulas, Graphs, and Mathematical Tables*. Washington, D.C.: U.S. Government Printing Office, 1972.

Box, George E.P., William G. Hunter, and J. Stuart Hunter. *Statistics for Experimenters: An Introduction to Design, Data Analysis, and Model Building*. New York: John Wiley and Sons, 1978.

Devore, Jay L. *Probability and Statistics for Engineering and the Sciences*. 4th ed. Wadsworth Publishing, 1995.

McCall, Robert B. *Fundamental Statistics for the Behavioral Sciences*. 5th ed. New York: Harcourt Brace Jovanovich, 1990.

Press, William H., Saul A. Teukolsky, William T. Vetterling, and Brian P. Flannery. *Numerical Recipes in C: The Art of Scientific Computing*. 2nd ed. New York: Cambridge University Press, 1992.

Sokal, Robert R., and F. James Rohlf. *Biometry: The Principles and Practice of Statistics in Biological Research*. 2<sup>nd</sup> ed. New York: W. H. Freeman, 1995.

## **Troubleshoot data analysis**

Applies to tools in the Analysis ToolPak.

### **Data appears only on the first worksheet**

The data analysis functions can be used on only one worksheet at a time. When you perform data analysis on grouped worksheets, results will appear on the first worksheet and empty formatted tables will appear on the remaining worksheets. To perform data analysis on the remainder of the worksheets, recalculate the analysis tool for each worksheet.