Excel Charts

*Images and information consolidated from Microsoft Office's support website, with some additional information added.

How to create an Excel chart from the Excel_charts GUI

You can easily create Excel charts from any available csv file using the Excel_charts GUI. Here are some notes on the types of available Excel charts and how to edit the charts once Excel opens.

Axes in Excel

You can read about how to modify axes in Excel here: https://support.office.com/en-us/article/Change-the-display-of-chart-axes-7d7f394c-c791-4cd2-9069-7ca3fb9cd559

Axes will change depending on the type of chart. The NLP Suite tools generally consider the vertical (value) axis to be the Y-axis and the horizontal (category) axis to be the X-axis, and will automatically label them as such. If you wish to change these labels, you will have to do so manually in Excel.

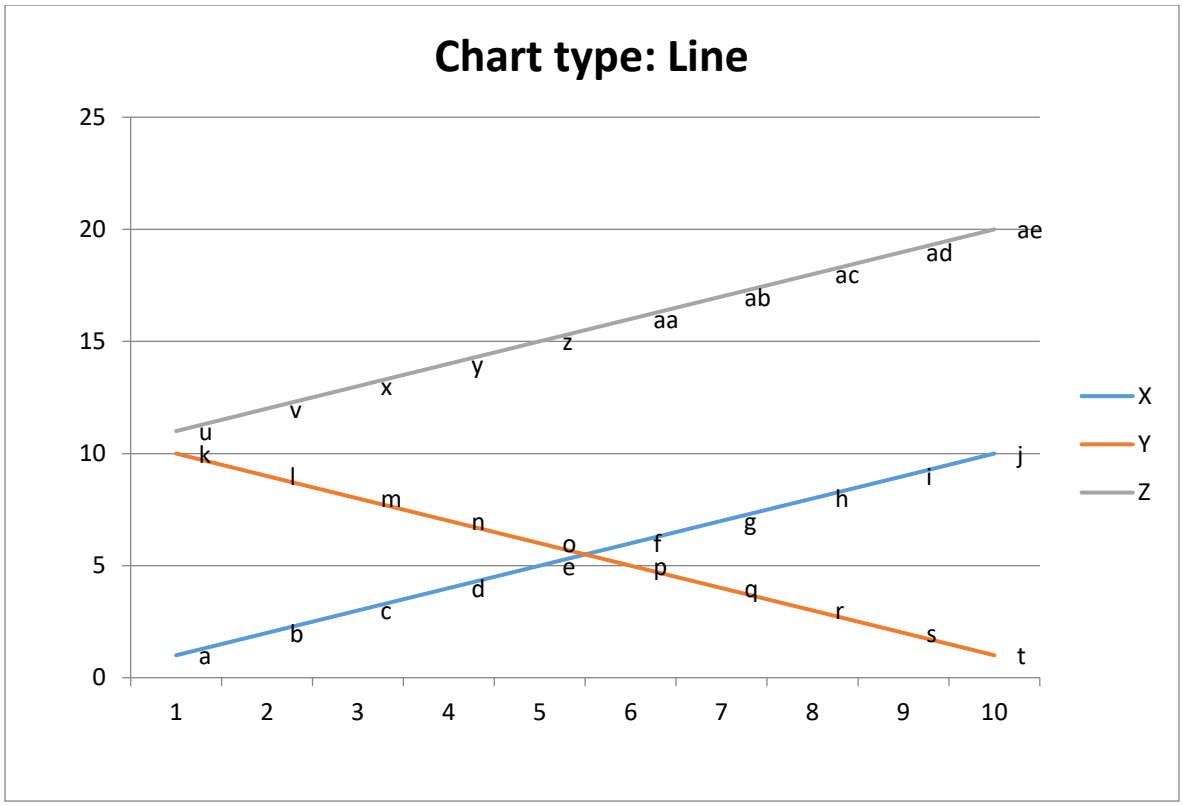
Scatter charts and bubble charts will display numeric values on both values; if you have 2 columns in a table, the first column will be the Y-values and the second column will be the X-values.

Pie, doughnut, and radar charts do not have axes.

All other charts have a regular X-axis and Y-axis.

Chart types

A line chart plotted from that data, with data series X, Y, and Z with label fields Label 1, Label 2, and Label 3, in that order, will look like this:



Area

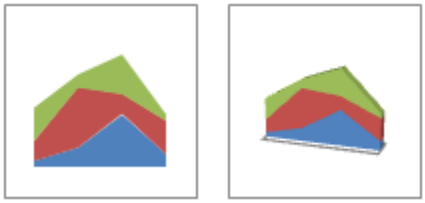
An area chart is like a line chart, but they display different colors in the area below the lines. Area charts can take any number of data series, and will take data in columns.

Types of area charts available:

Area & 3D Area

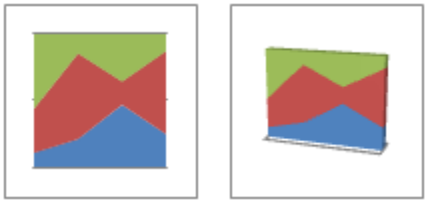

Area charts display the trend of values over time or other category data. 3-D area charts use three axes (horizontal, vertical, and depth) that you can modify. Do note, however, that data from one series can obscure data from another series in an unstacked area chart; consider using a line chart instead.

Stacked Area & 3D Stacked Area



Stacked area charts display the trend of the contribution of each value over time or other category data. A 3D stacked area chart uses a 3D perspective, but is not a true 3D chart, so it does not have a modifiable depth axis.

100% Stacked Area & 3D 100% Stacked Area



100% stacked area charts display the trend of the percentage that each value contributes over time or other category data. Like 3D stacked area charts, 3D 100% stacked area charts use a 3D perspective, but are not truly 3D.

You can find more information on area charts and more formatting options in Excel here: https://support.office.com/en-us/article/Present-your-data-in-an-area-chart-f4842b1c-a29b-4766-be07-3b61d2e77d39

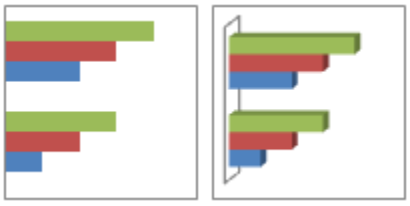
Bar

Bar charts are useful for comparing data points in one or more data series. In bar charts, categories are organized along the vertical axis and values along the horizontal axis. Bar charts can plot data in columns, and can take any number of series.

Types of bar charts:

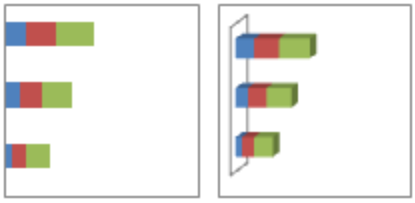
Clustered bar and clustered bar in 3-D

Clustered bar charts compare values across categories. In a clustered bar chart, the categories are typically organized along the vertical axis, and the values along the horizontal axis. A clustered bar in 3-D chart displays the horizontal rectangles in 3-D format; it does not display the data on three axes.

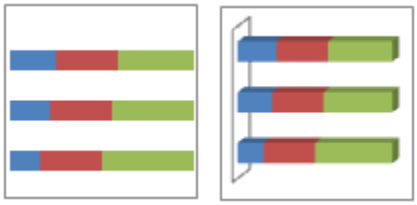


Stacked bar and stacked bar in 3-D

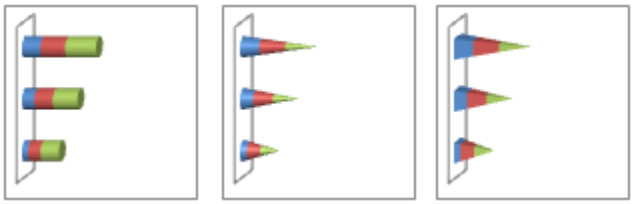
Stacked bar charts show the relationship of individual items to the whole. A stacked bar in 3-D chart displays the horizontal rectangles in 3-D format; it does not display the data on three axes.



100% stacked bar and 100% stacked bar in 3-D
This type of chart compares the percentage that each value contributes to a total across categories. A 100% stacked bar in 3-D chart displays the horizontal rectangles in 3-D format; it does not display the data on three axes.



Horizontal cylinder, cone, and pyramid
These charts are available in the same clustered, stacked, and 100% stacked chart types that are provided for rectangular bar charts. They show and compare data exactly the same way. The only difference is that these chart types display cylinder, cone, and pyramid shapes instead of horizontal rectangles.



You can find more information on bar charts here: https://support.office.com/en-us/article/Present-your-data-in-a-bar-chart-6050133e-398e-451b-9fd9-a881cb03cb89

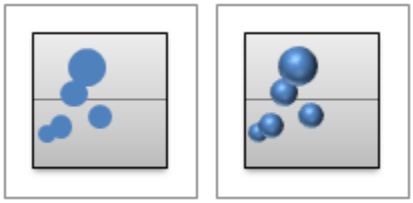
Bubble

A bubble chart is a variation of a scatter chart in which the data points are replaced with bubbles, and an additional dimension of the data is represented in the size of the bubbles. Like a scatter chart, a bubble chart does not use a category axis — both horizontal and vertical axes are value axes. In addition to the x values and y values that are plotted in a scatter chart, a bubble chart plots X values, Y values, and Z (size) values. **This means that for each series you want to plot, you should have 3 columns of data – one for X values, one for Y values, and one for Z values**. If you do not do this, you may not receive the desired output.

Types of bubble charts:

Bubble or bubble with 3-D effect

Both bubble chart types compare sets of three values instead of two. The third value determines the size of the bubble marker. You can choose to display bubbles in 2-D format or with a 3-D effect.



You can find more information on bubble charts here: https://support.office.com/en-us/article/Present-your-data-in-a-bubble-chart-424d7bda-93e8-4983-9b51-c766f3e330d9

Column

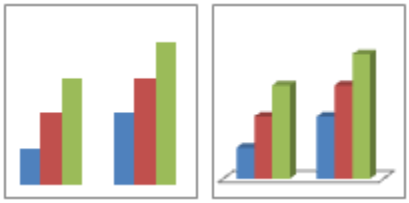
Data that is arranged in columns on a worksheet can be plotted in a column chart. A column chart can take any number of data series.

Column charts are useful for showing data changes over a period of time or for illustrating comparisons among items. In column charts, categories are typically organized along the horizontal axis and values along the vertical axis.

Types of column charts:

Clustered column and clustered column in 3-D

Clustered column charts compare values across categories. A clustered column chart displays values in 2-D vertical rectangles. A clustered column in 3-D chart displays the data by using a 3-D perspective only. A third value axis (depth axis) is not used.



You can use a clustered column chart type when you have categories that represent:

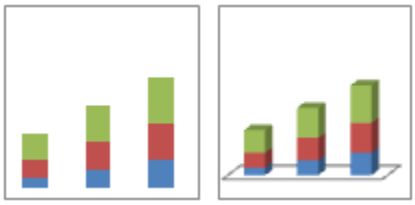
- Ranges of values (for example, item counts).
- Specific scale arrangements (for example, a Likert scale with entries, such as strongly agree, agree, neutral, disagree, strongly disagree).
- Names that are not in any specific order (for example, item names, geographic names, or the names of people).

NOTE To present data in a 3-D format that uses three axes (a horizontal axis, a vertical axis, and a depth axis) that you can modify, use a 3-D column chart subtype instead.

Stacked column and stacked column in 3-D

Stacked column charts show the relationship of individual items to the whole, comparing the contribution of each value to a total across categories. A stacked column chart displays values in

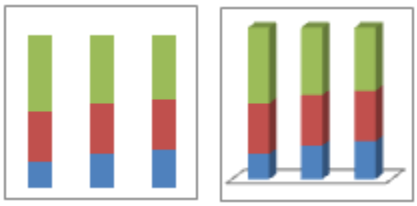
2-D vertical stacked rectangles. A 3-D stacked column chart displays the data by using a 3-D perspective only. A third value axis (depth axis) is not used.



You can use a stacked column chart when you have multiple data series and when you want to emphasize the total.

100% stacked column and 100% stacked column in 3-D

100% stacked column charts and 100% stacked column in 3-D charts compare the percentage that each value contributes to a total across categories. A 100% stacked column chart displays values in 2-D vertical 100% stacked rectangles. A 3-D 100% stacked column chart displays the data by using a 3-D perspective only. A third value axis (depth axis) is not used.



You can use a 100% stacked column chart when you have three or more data series and you want to emphasize the contributions to the whole, especially if the total is the same for each category.

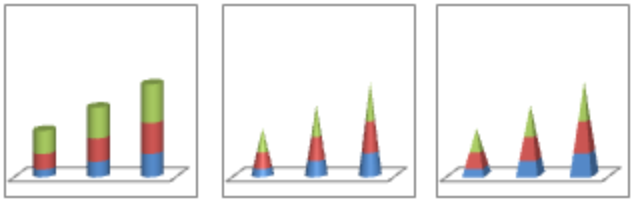
3-D column

3-D column charts use three axes that you can modify (a horizontal axis, a vertical axis, and a depth axis), and they compare data points along the horizontal and the depth axes.

You can use a 3-D column chart when you want to compare data across the categories and across the series equally, because this chart type shows categories along both the horizontal axis and the depth axis, while the vertical axis displays the values.

Cylinder, cone, and pyramid

Cylinder, cone, and pyramid charts are available in the same clustered, stacked, 100% stacked, and 3-D chart types that are provided for rectangular column charts, and they show and compare data exactly the same way. The only difference is that these chart types display cylinder, cone, and pyramid shapes instead of rectangles.



You can find more information on column charts here: https://support.office.com/en-us/article/Present-your-data-in-a-column-chart-d89050ba-e6b6-47de-b090-e9ab353c4c00

Doughnut

Data that is arranged in columns on a worksheet can be plotted in a doughnut chart. Just like a pie chart, a doughnut chart shows the relationship of parts to a whole, but a doughnut chart can contain more than one data series. Each data series that you plot in a doughnut chart adds a ring to the chart. The first data series is displayed in the center of the chart.

Types of doughnut charts:

Doughnut

Doughnut charts display data in rings, where each ring represents a data series. If percentages are displayed in data labels, each ring will total 100%.

Exploded Doughnut

Much like exploded pie charts, exploded doughnut charts display the contribution of each value to a total while emphasizing individual values, but they can contain more than one data series.

You can find more information on doughnut charts and directions for more complex formatting here: https://support.office.com/en-us/article/Present-your-data-in-a-doughnut-chart-0ac0efde-34e2-4dc6-9b7f-ac93d1783353

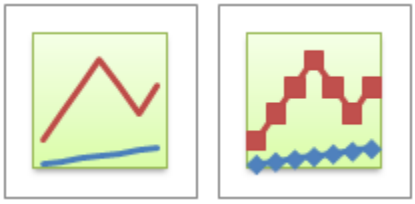
Line

A line chart distributes category data evenly along a horizontal (category) axis, and distributes all numerical value data along a vertical (value) axis. It differs from scatter charts in that a line chart

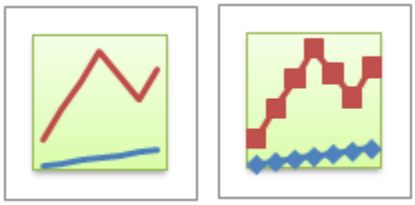
only has **one** value axis; if fed two columns of data, it will plot them as two separate series (with the data in the columns serving as the values) with automatically generated categories.

Types of line charts:

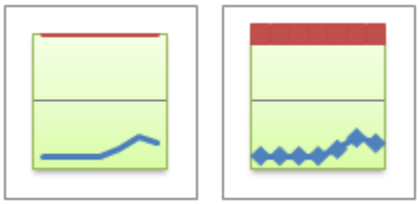
Line and line with markers
Displayed with markers to indicate individual data values, or without, line charts are useful to show trends over time or ordered categories, especially when there are many data points and the order in which they are presented is important. If there are many categories or the values are approximate, use a line chart without markers.



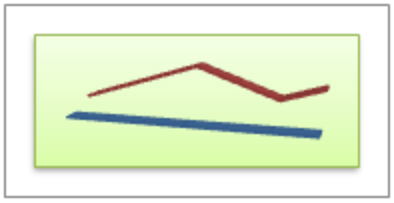
Stacked line and stacked line with markers
Displayed with markers to indicate individual data values, or without, stacked line charts can be used to show the trend of the contribution of each value over time or ordered categories, but because it is not easy to see that the lines are stacked, consider using a different line chart type or a stacked area chart instead.



100% stacked line and 100% stacked line with markers
Displayed with markers to indicate individual data values, or without, 100% stacked line charts are useful to show the trend of the percentage each value contributes over time or ordered categories. If there are many categories or the values are approximate, use a 100% stacked line chart without markers.



3-D line
3-D line charts show each row or column of data as a 3-D ribbon. A 3-D line chart has horizontal, vertical, and depth axes that you can modify.



You can find more information on line charts here: https://support.office.com/en-us/article/Present-your-data-in-a-scatter-chart-or-a-line-chart-4570a80f-599a-4d6b-a155-104a9018b86e

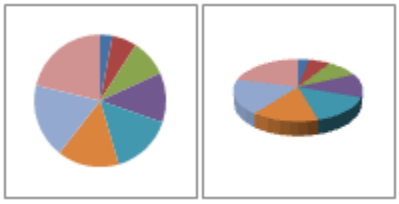
Pie

Pie charts show the size of items in one data series, proportional to the sum of the items. The data points in a pie chart are displayed as a percentage of the whole pie. Because you can plot only **one data series** in a pie chart, the data should be arranged in **one** column.

Types of pie charts:

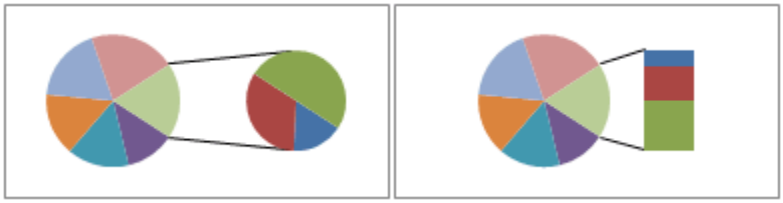
Pie and pie in 3-D

Pie charts display the contribution of each value to a total in a 2-D or 3-D format. You can pull out slices of a pie chart manually to emphasize the slices.



Pie of pie and bar of pie

Pie of pie or bar of pie charts display pie charts with user-defined values that are extracted from the main pie chart and combined into a secondary pie chart or into a stacked bar chart. These chart types are useful when you want to make small slices in the main pie chart easier to distinguish.



Exploded pie and exploded pie in 3-D

Exploded pie charts display the contribution of each value to a total while emphasizing individual values. Exploded pie charts can be displayed in 3-D format. You can change the pie explosion setting for all slices and individual slices, but you cannot move the slices of an exploded pie manually. If you want to pull out the slices manually, consider using a pie or pie in 3-D chart instead.

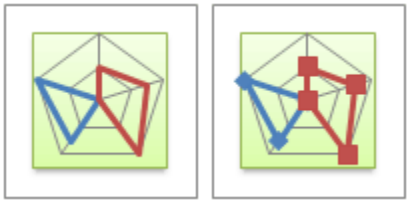
You can find more information on pie charts here: https://support.office.com/en-gb/article/Present-your-data-in-a-pie-chart-1a5f08ae-ba40-46f2-9ed0-ff84873b7863

Radar

A radar chart, also known as a spider chart or a star chart because of its appearance, plots the values of each category (each different column) along a separate axis that starts in the center of the chart and ends on the outer ring. Radar charts compare the aggregate values of multiple data series.

Types of radar charts:

Radar and radar with markers
With or without markers for individual data points, radar charts display changes in values relative to a center point.



Filled radar
In a filled radar chart, the area covered by a data series is filled with a color.

You can find more information on radar charts here: https://support.office.com/en-us/article/Present-your-data-in-a-radar-chart-16e20279-eed4-43c2-9bf5-29ff9b10601d

Scatter

A scatter chart always has **two value axes** to show one set of numerical data along a horizontal (value) axis and another set of numerical values along a vertical (value) axis. The chart displays points at the intersection of an x and y numerical value, combining these values into single data points. These data points may be distributed evenly or unevenly across the horizontal axis, depending on the data.

Types of scatter charts:

Scatter
This type of chart compares pairs of values. Use a scatter chart with data markers but without lines when you use many data points and connecting lines would make the data harder to read. You can also use this chart type when there is no need to show connectivity of the data points.

Scatter with smooth lines and scatter with smooth lines and markers
This type of chart displays a smooth curve that connects the data points. Smooth lines can be displayed with or without markers. Use a smooth line without markers if there are many data points.

Scatter with lines and scatter with lines and markers
This type of chart displays straight connecting lines between data points. Straight lines can be displayed with or without markers.

You can find more information on scatter charts here: https://support.office.com/en-us/article/Present-your-data-in-a-scatter-chart-or-a-line-chart-4570a80f-599a-4d6b-a155-104a9018b86e

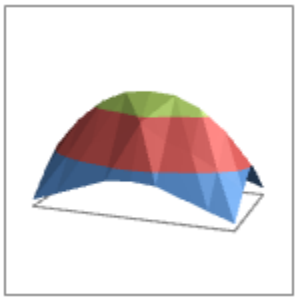
Surface

A surface chart shows a three-dimensional surface that connects a set of data points. A surface chart is useful when you want to find optimum combinations between two sets of data. As in a topographic map, the colors and patterns in a surface chart indicate areas that contain the same range of values. Unlike other chart types, a surface chart does not use colors to distinguish the data series — colors are used to distinguish the values instead.

To create a surface chart, both categories and data series should contain numeric values. **Surface charts do not permit data labels.**

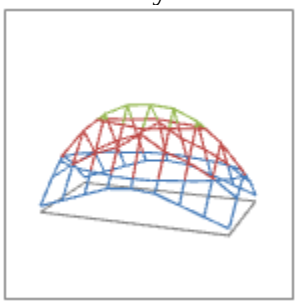
3-D surface

3-D surface charts show trends in values across two dimensions in a continuous curve. Color bands in a surface chart do not represent the data series; they represent the distinction between the values. This chart shows a 3-D view of the data, which can be imagined as a rubber sheet stretched over a 3-D column chart. It is typically used to show relationships between large amounts of data that may otherwise be difficult to see.



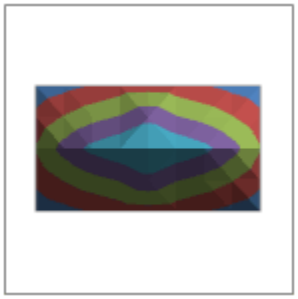
Wireframe 3-D surface

When displayed without color on the surface, a 3-D surface chart is called a wireframe 3-D surface chart. This chart shows only the lines. A 3-D surface chart that is displayed without color bands on any surface is called a wireframe 3-D surface chart. This chart shows only the lines.



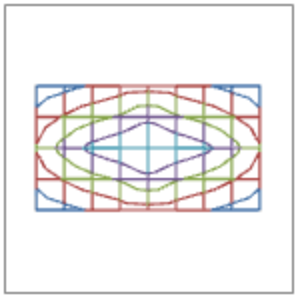
Contour

Contour charts are surface charts viewed from above, similar to 2-D topographic maps. In a contour chart, color bands represent specific ranges of values. The lines in a contour chart connect interpolated points of equal value.



Wireframe contour

Wireframe contour charts are also surface charts viewed from above. Without color bands on the surface, a wireframe chart shows only the lines.



You can find more information on what you can do with Surface charts in Excel here: https://support.office.com/en-us/article/Present-your-data-in-a-surface-chart-1050ffc6-6143-4ee7-82b3-421bea88a1e8