

# Line, Scatter, and Combo Charts: Takeaways



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## Syntax

### CONDITIONAL AVERAGES:

- Are calculated using the following:

```
=AVERAGEIFS(average_range, criteria_range1, criteria1, [criteria_range2, criteria2], .
```

- Where `average_range` is the column you want to average and `criteria_range#` are the columns containing the criteria, and `criteria#` are the corresponding conditions.
- Can be defined interactively using the  $f_x$  tool (**Insert Function**).
- Can be used to find the average of different groups within your data.

## Concepts

### GENERAL GUIDELINES FOR WHEN TO USE A LINE CHART:

- We have a large dataset with continuous data we want to compare.
- We want to see changes over time.
- We want to find a trend or pattern in our data.
- They are not a good choice for showing part-to-whole relationships.

### GENERAL GUIDELINES FOR WHEN TO USE A SCATTER CHART:

- We want to see if there is a relationship between two columns of numerical data.
- We have a lot of data to compare.
- We are exploring the data for ourselves rather than explaining it to someone else.
- We are looking for abnormal values that do not follow the overall pattern in our data.
- They are not a good choice for showing changes over time.

### GENERAL GUIDELINES FOR WHEN TO USE A COMBO CHART:

- We have multiple columns that share the same independent values.
- We want to compare multiple columns with different value ranges.
- We want to show the correlation between two columns in one chart.
- We want to show whether one column of values meets a target defined by another column.

### HOW TO CREATE A CHART IN EXCEL:

- Select the desired data.

- Select the **Insert** tab at the top of the spreadsheet.
- Select the desired chart from the **Charts** section.

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## CORRELATION

- It can be positive or negative, linear or nonlinear, and strong or weak.
- Correlation can be measured using R-squared, which ranges from 0 to 1:
  - Closer to 0 is weaker, and closer to 1 is stronger.
  - It is the percentage of variation in the dependent values that can be explained by the variation in the independent values.
  - It is undefined for a horizontal line.
  - R-squared can be added to a chart by formatting the trendline under **Chart Elements**.
- Correlation does not imply causation.

## Resources

[Available Chart Types in Excel](#)

[Number Format Codes](#)

[R-squared](#)

[AVERAGEIFS Function](#)