

How to Add a Regression Line to a Scatterplot in Google Sheets

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Understanding the relationship between two variables is fundamental in data analysis. One of the most effective ways to visualize this relationship is by creating a [scatterplot](#). To further quantify and predict trends, adding a [regression line](#)--also known as a [Trendline](#)--is essential. This comprehensive guide details the simple, step-by-step process of accurately adding and customizing a linear regression line to your chart in [Google Sheets](#). This feature makes it highly convenient to perform visual analysis of complex data relationships.

Google Sheets: Add Regression Line to Scatterplot

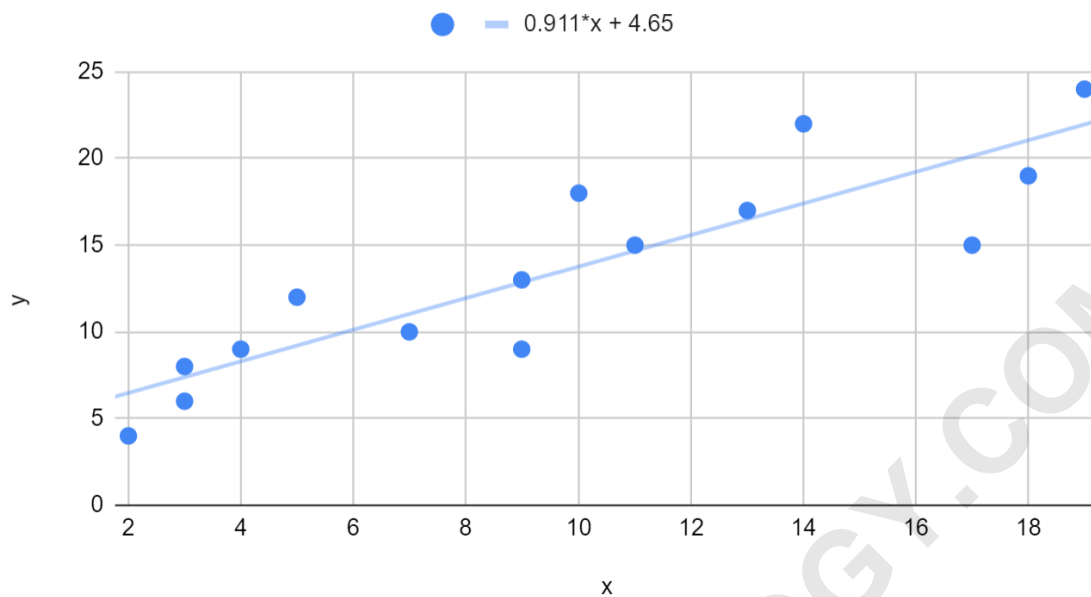
1. Introduction: Understanding the Regression Line

A [regression line](#) represents the line that provides the **best fit** for a given [dataset](#), minimizing the distance between the line and the actual data points. This visualization is crucial for understanding correlations and performing simple predictive modeling. The procedure below outlines the necessary steps to generate a scatterplot and integrate a linear regression line using the robust charting tools provided by [Google Sheets](#).

We will demonstrate this process using a standard two-variable dataset. The final result will allow for immediate visual inspection of the relationship and provide the mathematical equation needed for further quantitative analysis. Pay close attention to the settings in the Chart Editor, as this is where the customization and trendline activation occur.

The step-by-step procedure below uses a sample dataset to illustrate the implementation process fully:

y vs. x



2. Step 1: Preparing and Entering Your Data

The foundation of any successful statistical analysis in Google Sheets is accurately inputting your data. Before proceeding, ensure your independent variable (X) and dependent variable (Y) are placed in adjacent columns. For our demonstration, we utilize a sample dataset that relates two distinct variables across 15 observations.

Begin by launching your Google Sheets document and entering the corresponding values into columns A and B, starting from row 2. It is advisable to use row 1 for descriptive headers, though they are not strictly necessary for the plotting function itself.

Ensure that all data points are entered correctly to avoid skewed results. Once the data entry is complete, the sheet should visually align with the structure shown below, preparing the data for the subsequent visualization step:

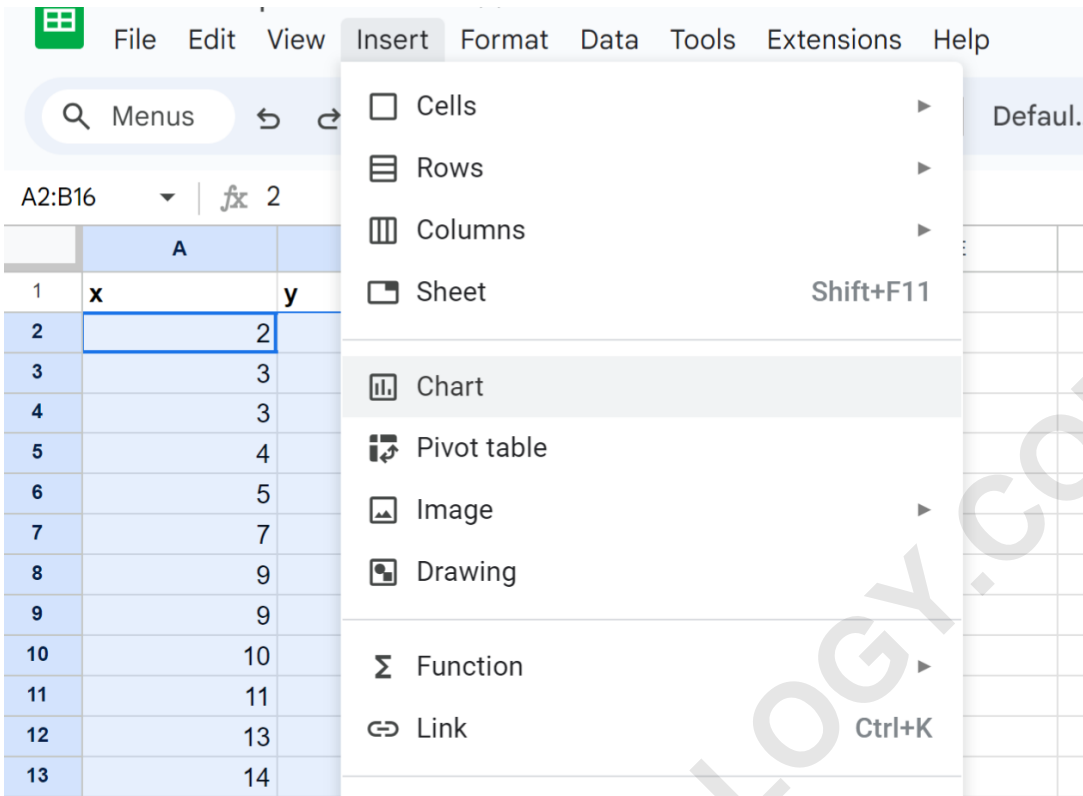
	A	B	C	D
1	x	y		
2	2	4		
3	3	8		
4	3	6		
5	4	9		
6	5	12		
7	7	10		
8	9	9		
9	9	13		
10	10	18		
11	11	15		
12	13	17		
13	14	22		
14	17	15		
15	18	19		
16	19	24		
17				

3. Step 2: Generating the Initial Scatterplot

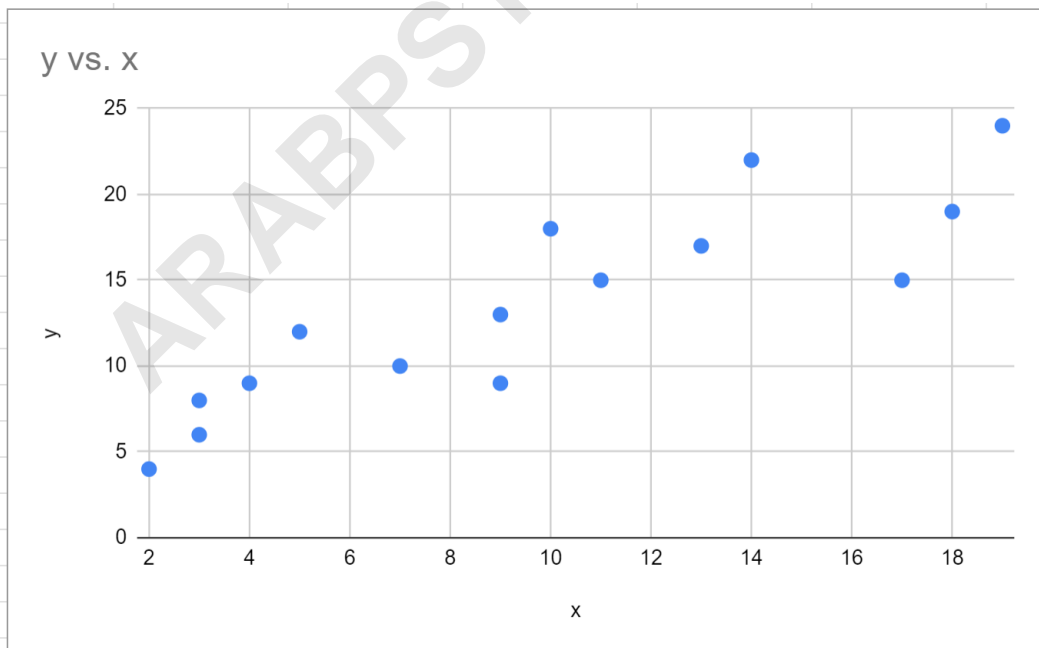
With the data successfully entered, the next critical step is to generate the base scatterplot. This chart type is specifically designed to display data points for two variables, making the visual identification of patterns, clusters, and correlation direction straightforward.

First, highlight the entire data range, including all numerical entries (in this example, cell range **A2:B16**). Navigate to the top menu ribbon, click the **Insert** tab, and then select the **Chart** option. This action automatically opens the dedicated **Chart editor** panel on the right side of your screen.

The Chart editor often defaults to a column chart. To correct this, within the **Chart editor** panel, find the **Setup** tab, click on **Chart type**, and scroll down until you locate and select **Scatter chart**. This step ensures the correct visual representation is applied to your bivariate data.



Following the selection of the correct chart type, the initial scatterplot will immediately materialize on your spreadsheet, displaying all the points you entered:

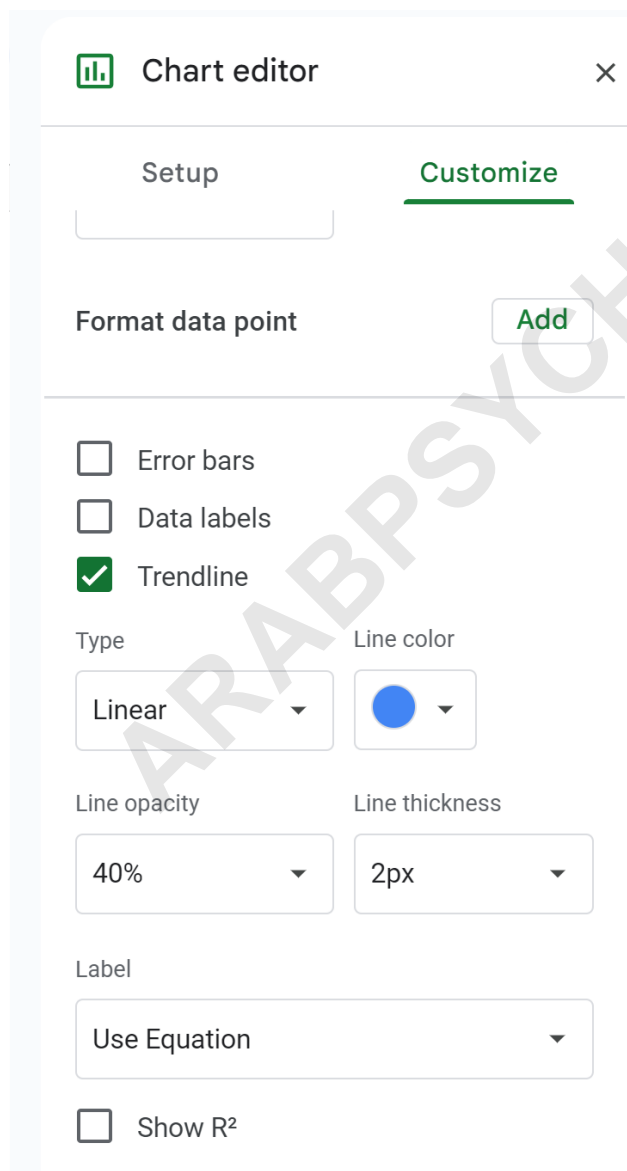


4. Step 3: Adding the Regression Trendline

The final step involves customizing the scatterplot to include the statistical element we require: the Trendline. This line represents the calculated linear relationship best fitting the distribution of the data points.

Ensure the **Chart editor** panel is still open. Click on the **Customize** tab, which controls the visual aesthetics and statistical overlays of the chart. Within the Customize section, click the dropdown menu labeled **Series**.

Scroll down through the Series options until you find the checkbox next to **Trendline**. By default, Google Sheets applies a **Linear** trendline, which is appropriate for basic linear regression analysis. Check this box to instantly generate the regression line on your chart.



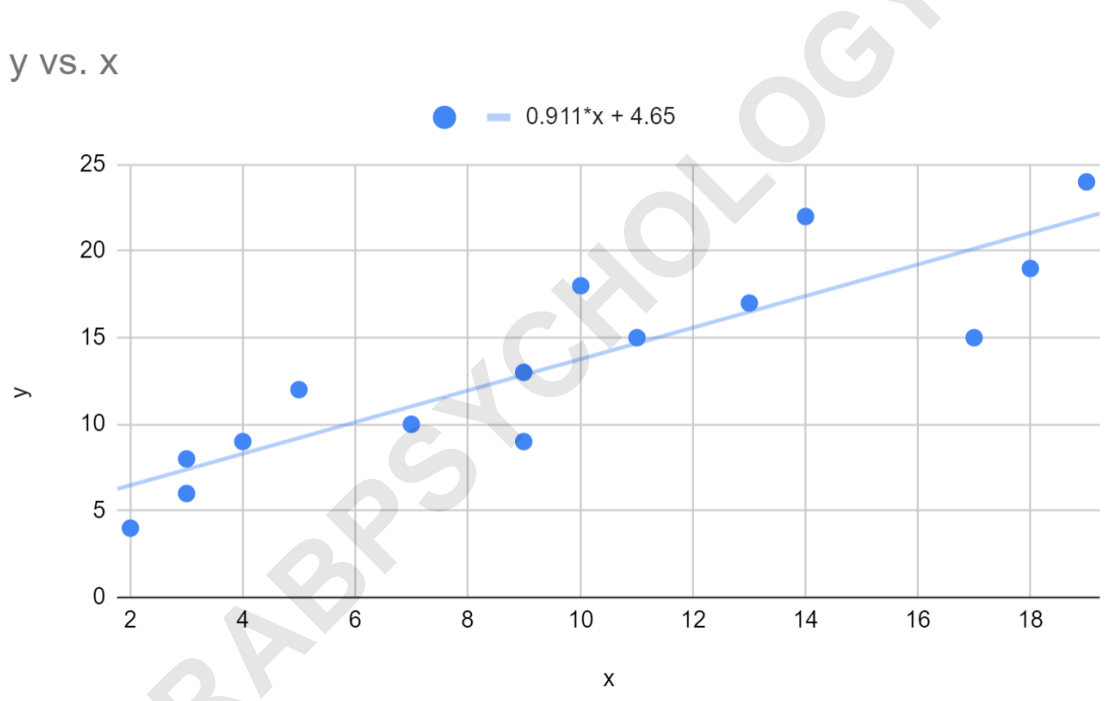
The image shows the 'Chart editor' panel in Google Sheets, specifically the 'Customize' tab. The 'Format data point' section has an 'Add' button. Under the 'Trendline' section, the 'Trendline' checkbox is checked. The 'Type' dropdown is set to 'Linear', and the 'Line color' dropdown is set to blue. The 'Line opacity' dropdown is set to '40%' and the 'Line thickness' dropdown is set to '2px'. The 'Label' dropdown is set to 'Use Equation'. The 'Show R²' checkbox is unchecked.

5. Customizing the Trendline and Displaying the Equation

Once the trendline is added, you have options to customize its appearance and display crucial statistical details. Still within the **Series** menu under the Trendline section, you can adjust the line's color, opacity, and thickness to enhance visibility against the data points.

Crucially, to fully utilize the linear model, you should enable the display of the regression equation. Look for the **Label** option beneath the Trendline checkbox and select **Use Equation** from the dropdown menu. This action overlays the mathematical formula, along with the coefficient of determination (R-squared value, if selected), directly onto the chart area.

The resulting scatterplot now includes the definitive regression line and the corresponding predictive formula, presenting a complete visual and quantitative summary of the data relationship:



6. Interpreting the Regression Equation

For the specific data used in this example, the resulting linear regression line equation is determined to be: $y = 0.911x + 4.65$. Understanding how to interpret the components of this equation is vital for drawing meaningful conclusions from the statistical analysis.

The equation adheres to the standard linear model format: $y = mx + b$, where **m** represents the slope (0.911) and **b** represents the y-intercept (4.65). These two values dictate the nature and starting point of the linear relationship established by the best-fit line.

The interpretation of these coefficients is straightforward:

For each additional one unit increase in the x variable, the average predicted increase in the y variable is **0.911**. This suggests a strong positive correlation between the two variables in the dataset.

When the x variable is equal to zero, the average value for the y variable is **4.65**. This intercept establishes the baseline expectation of the dependent variable.

7. Utilizing the Equation for Prediction

Beyond simply visualizing the relationship, the primary utility of generating the regression equation is its application in forecasting. We can use the formula $y = 0.911x + 4.65$ to estimate the value of y based on any given value of x , provided that x falls within the domain of the collected data.

For example, if we wished to predict the value of y when the independent variable x is equal to 15, we substitute 15 into our derived equation:

$$y = 0.911*(15) + 4.65 = \mathbf{18.315}$$

Therefore, based on the established linear model, the expected value for y when x equals 15 is **18.315**. This predictive capability is invaluable for business planning, scientific extrapolation, and hypothesis testing.

8. Conclusion and Further Resources

Adding a Trendline to a scatterplot in Google Sheets is a powerful yet simple process that transforms raw data visualization into insightful statistical modeling. By following these steps--data entry, chart insertion, and trendline customization--users can quickly derive and interpret the linear relationship between their variables.

This functionality within Google Sheets democratizes access to basic regression analysis, making it accessible to users regardless of their statistical expertise. Mastering this technique is a foundational step toward performing more complex data analysis and forecasting tasks efficiently.

The following tutorials explain how to perform other common tasks in Google Sheets:

[How to Calculate Correlation in Google Sheets](#)

[Understanding the R-squared Value in Regression](#)

[Creating Histograms in Google Sheets](#)