How to calculate Adjusted R-Squared in Excel?

Authored by

stats writer

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To calculate Adjusted R-Squared in Excel, you need to use the LINEST function to obtain the R-Squared value, then subtract the number of independent variables from the value and divide that result by the number of independent variables multiplied by 1 minus the R-Squared value. This will yield the Adjusted R-Squared value.

R-squared, often written R2, is the proportion of the variance in the response variable that can be explained by the predictor variables in a linear regression model.

The value for R-squared can range from 0 to 1. A value of 0 indicates that the response variable cannot be explained by the predictor variable at all while a value of 1 indicates that the response variable can be perfectly explained without error by the predictor variables.

The **adjusted R-squared** is a modified version of R-squared that adjusts for the number of predictors in a regression model. It is calculated as:

Adjusted R2 = 1 -

where:

R2: The R2 of the model
n: The number of observations
k: The number of predictor variables

Because R2 always increases as you add more predictors to a model, adjusted R2 can serve as a metric that tells you how useful a model is, *adjusted for the number of predictors in a model*.

This tutorial provides a step-by-step example of how to calculate adjusted R2 for a regression model in R.

Step 1: Create the Data

For this example, we'll create a dataset that contains the following variables for 12 different students:

Exam Score
Hours Spent Studying
Current Grade

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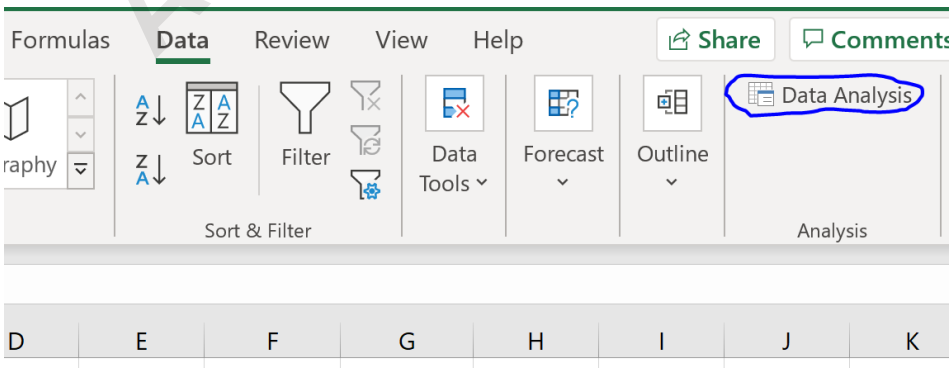
	A	B	C	D	E	F	G
1	**Exam Score**	**Study Hours**	**Current Grade**				
2	58	1	65				
3	61	1	78				
4	62	2	76				
5	65	2	76				
6	65	1	79				
7	68	2	80				
8	72	2	81				
9	74	3	84				
10	78	3	88				
11	85	4	85				
12	90	4	96				
13	95	5	90				
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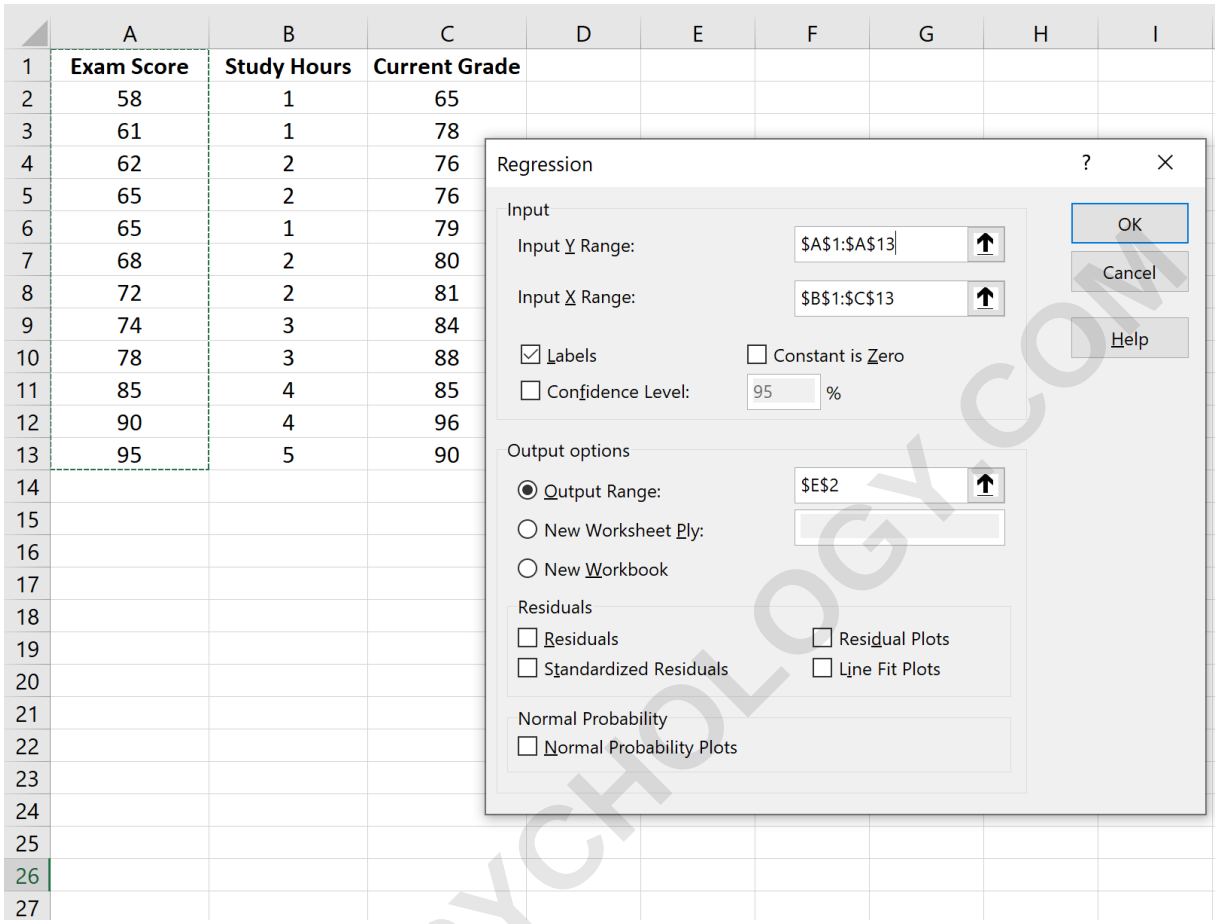
Step 2: Fit the Regression Model

Next, we'll fit a model using *Exam Score* as the and *Study Hours* and *Current Grade* as the predictor variables.

To fit this model, click the **Data** tab along the top ribbon and then click **Data Analysis**:



If you don't see this option available, you need to first .



Once you click **OK**, the output of the regression model will appear:

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E	F	G	H	I	J	K	L	M
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.977668							
R Square	0.955834							
Adjusted R Square	0.946019							
Standard Error	2.790029							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*ignificance F*			
Regression	2	1516.192	758.0958	97.3883	8E-07			
Residual	9	70.05834	7.78426					
Total	11	1586.25						
	Coefficients	*andard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	17.17545	12.5562	1.367886	0.204527	-11.2286	45.57954	-11.2286	45.57954
Study Hours	6.383979	1.08675	5.874378	0.000236	3.92558	8.842378	3.92558	8.842378
Current Grade	0.486069	0.179428	2.708992	0.024037	0.080175	0.891963	0.080175	0.891963

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Step 3: Interpret the Adjusted R-Squared

The adjusted R-squared of the regression model is the number next to **Adjusted R Square**:

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The adjusted R-squared for this model turns out to be **0.946019**.

This value is extremely high, which indicates that the predictor variables *Study Hours* and *Current Grade* do a good job of predicting *Exam Score*.

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