Generate a Multiple Regression Model

Excel Step-by-Step How-to for Windows and Excel for Mac 2016 (v.16) or later

Instructions: Use this guide to generate a multiple regression model in an Excel spreadsheet. This will be achieved by using the Data Analysis toolkit.

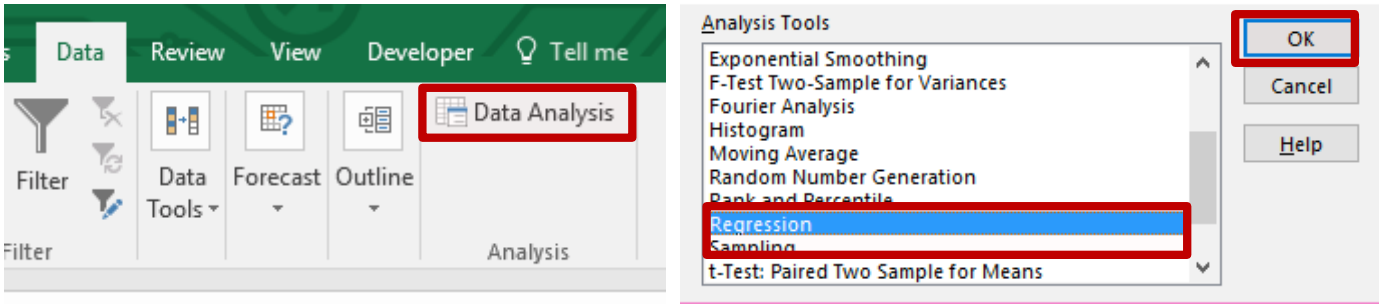
Data requirement: At least two variables, qualitative data
Sample data: Job task data, White Manufacturing

Step	Windows Instructions + Screen Shot
1. Arrange the data so that each task is represented by a row and the details are listed in each column.	

	A	B	C	D	E
1	*Job*	*Completion Time (hours)*	*Pieces*	*Steps*	*Rush Order (1=yes)*
2	1	152	127	7	1
3	2	329	600	5	1
4	3	175	14	16	1
5	4	225	96	11	1
6	5	250	21	9	1
7	6	230	84	13	1

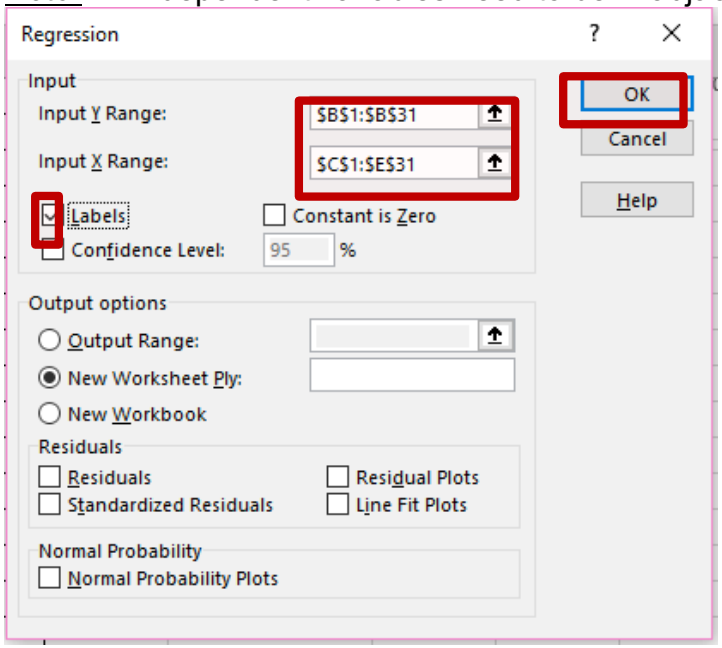
2. Using the Data Analysis toolkit, create a regression model.

Navigate to the Data tab and select the Data Analysis option. Select Regression and click OK.



Set completion time (independent variable) as the Input Y Range and the other three variables as the Input X Range. If you selected column headers along with your data, check the box for Labels. Click OK.

Note: All independent variables need to be in adjacent columns.



The regression output will appear in a new sheet.

	A	B	C	D	E	F	G	H	I
1	SUMMARY OUTPUT								
2									
3	*Regression Statistics*								
4	Multiple R	0.914846							
5	R Square	0.836944							
6	Adjusted R	0.81813							
7	Standard E	77.11612							
8	Observatic	30							
9									
10	ANOVA								
11		*df*	*SS*	*MS*	*F*	*ignificance F*			
12	Regressior	3	793638.6	264546.2	44.48475	2.22E-10			
13	Residual	26	154619.3	5946.896					
14	Total	29	948257.9						
15									
16		*Coefficients*	*andard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
17	Intercept	-150.101	58.99145	-2.54445	0.017227	-271.359	-28.842	-271.359	-28.842
18	Pieces	0.75633	0.07519	10.05886	1.88E-10	0.601774	0.910886	0.601774	0.910886
19	Steps	34.2999	5.185423	6.614677	5.14E-07	23.64111	44.95869	23.64111	44.95869
20	Rush Orde	-70.7342	29.19833	-2.42254	0.022682	-130.752	-10.7161	-130.752	-10.7161
21									