

XL3A: V0A Excel2013 Model Toolpak Regress1 Continuous 1

Toolpak Regress: Excel 2013. One Continuous Predictor

by
Milo Schield
Member: International Statistical Institute
US Rep: International Statistical Literacy Project
Director, W. M. Keck Statistical Literacy Project

Materials at: www.StatLit.org/pdf/Excel2013-Model-Toolpak-Regress1C-Slides.pdf
[Excel2013-Model-Toolpak-Regress1C-Output.pdf](http://www.StatLit.org/pdf/Excel2013-Model-Toolpak-Regress1C-Output.pdf)

XL3A: V0A Excel2013 Model Toolpak Regress1 Continuous 2

Weight-Height Association

Required output: Create and upload your worksheet:

1. Calculate mean height and weight: slide 3
2. Model Weight on Height using Regression command in the Data Analysis Toolpak: slide 6.
3. Generate Trendline chart with equation & R². Slide 7

Note: The equation and R² in the Regression output is the same as that generated by Trendline. Slide 8.
Data: www.StatLit.org/xls/Excel2013-Model-Toolpak-Regress1C-Data.xls
Subjects are college students.

XL3A: V0A Excel2013 Model Toolpak Regress1 Continuous 3

1) Analyze Data: Enter formula: K4:K6, P4:P5

Ht	Male	Wt	Row	J	K	L	M	N
67	0	125	2	Generate Summary Statistics				
62	0	120	3	Averages	ALL			
66	0	120	4	Height	68.7	=AVERAGE(C2:C93)		
66	0	120	5	Weight	145.2	=AVERAGE(E2:E93)		
63	0	112	6	Correlate	0.785	=CORREL(C2:C93,E2:E93)		

	N	O	P	Q	R
3	Std. Dev	ALL			
4	Height	3.66	=STDEV(C2:C93)		
5	Weight	23.7	=STDEV(E2:E93)		

XL3A: V0A Excel2013 Model Toolpak Regress1 Continuous 4

2a) Data Toolbar, select Data Analysis. Select Regression

XL3A: V0A Excel2013 Model Toolpak Regress1 Continuous 5

2b) Regress Weight (E1:E93) on Height (C1:C93)

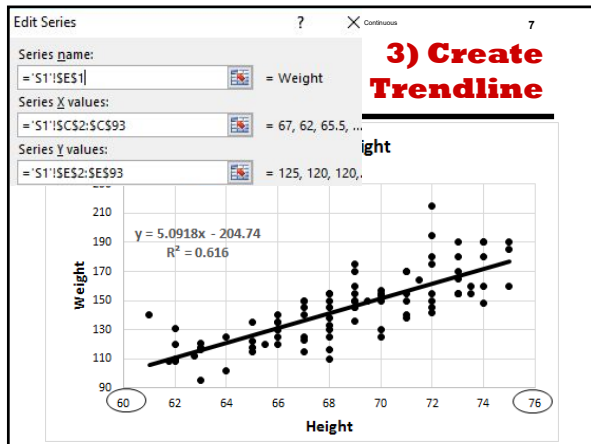
Ht	Male	Wt	Row	J	K	L
67	0	125	2	General		
62	0	120	3	Average		
66	0	120	4	Height		
66	0	120	5	Weight		
63	0	112	6	Correlate		
65	0	122	7			
66	0	130	8	J		
66	0	125	9			

XL3A: V0A Excel2013 Model Toolpak Regress1 Continuous 6

2c) Results: Regress Weight on Height

	J	K	L	M	N	O	P
9	SUMMARY OUTPUT						
11	Regression Statistics						
12	Multiple R	0.7849					
13	R Square	0.6161					
14	Adjusted R Sq	0.6117					
15	Standard Error	14.792					
16	Observations	92					
18	ANOVA						
19		df	SS	MS	F	Significance F	
20	Regression	1	315.62	315.62	144.384	2.1E-20	
21	Residual	90	202.18	2.246			
22	Total	91	517.80				
24		Coefficient	Std Error	t Stat	P-value	Lower 95%	Upper 95%
25	Intercept	-204.74	29.16	-7.0214	4E-10	-262.67	-146.81
26	Ht	5.0918	0.4237	12.016	2.1E-20	4.24992	5.93362

Weight = -204.74 + (5.0918*Height)



4. Conclusion

Trendline and the Data Analysis Regression command both generate the same model:

- Same constant: -204.74
- Same slope: 5.0918
- Same R-squared: 0.616

Trendline is limited to a single predictor.
 Data analysis Regression can handle multiple predictors.

Appendix: What to do if

Slide 10: What to do if the plus sign doesn't appear on the upper-right side of the graph

Slides 11 & 12: What to do if the Data Analysis object doesn't appear on the right side of the Data toolbar.

If + Sign doesn't appear on upper-right side of graph...

Select the graph. Select the Chart-Tools Design tab.

At the far-left, select "Add Chart Element". Select "Axis Titles" and "Chart Title".

To add a Trendline, either select "Trendline" under "Add Chart Element" or right-mouse on a data point and select Trendline from menu.

If Data Analysis doesn't appear on Data Toolbar

1) Select File/Options. 2) Select Add-Ins.

3) In the lower-left corner next to Manage, select Excel Add-Ins.
 4) Press GO.

Add Data Analysis to the Data Toolbar

1) Checks the boxes involving Analysis ToolPak.
 2) Press OK