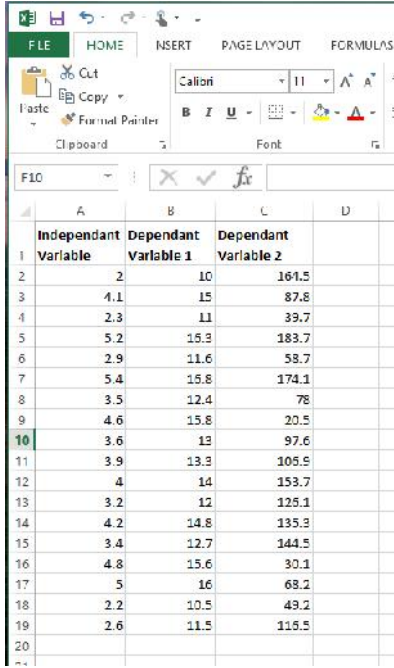


Basic Statistical Analyses in Excel 2013

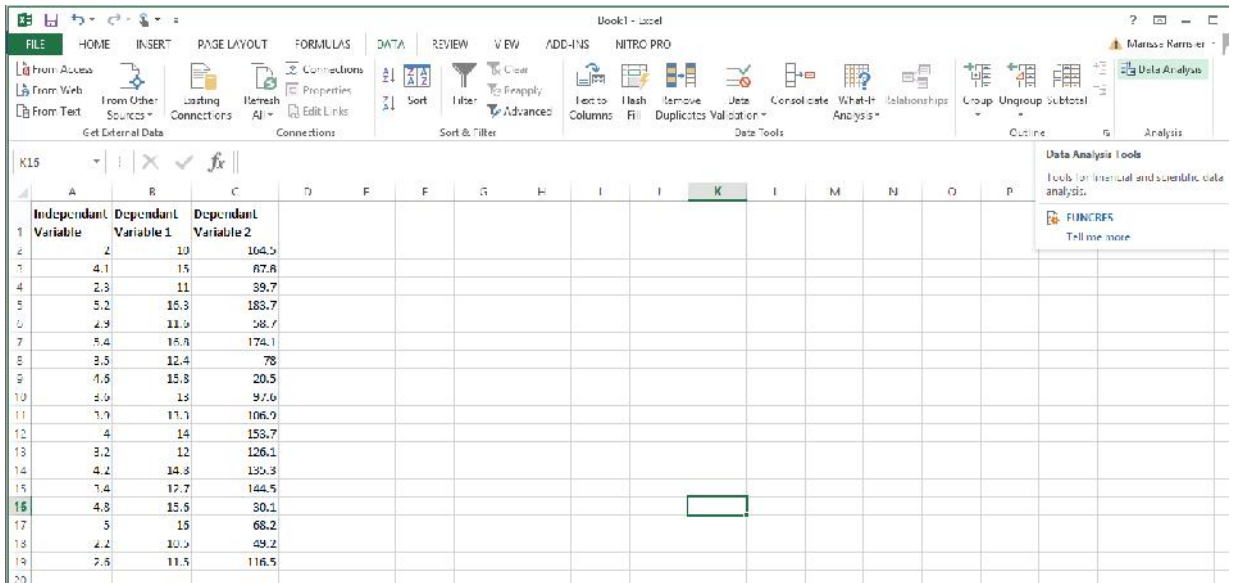
Note: Other versions of excel generally have these same functions, but the menus/paths may differ

- (1) **Input data into excel.** Make sure data are formatted as numbers with no additional information in the cells:



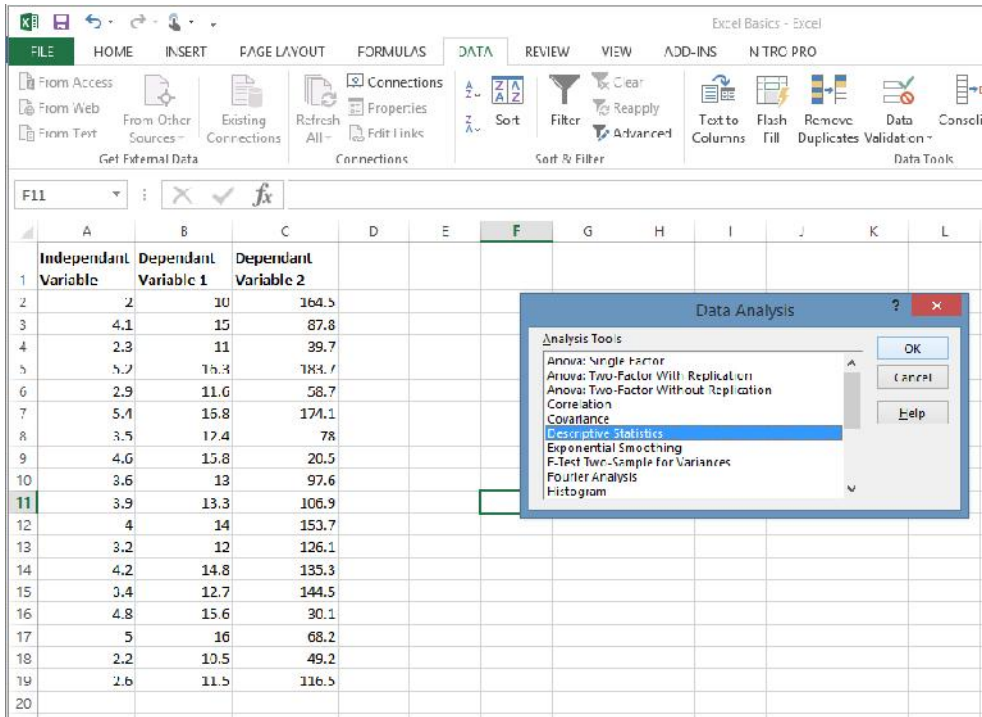
	Independent Variable	Dependent Variable 1	Dependent Variable 2
2	2	10	161.5
3	4.1	15	87.8
4	2.3	11	39.7
5	5.2	15.3	183.7
6	2.9	11.6	58.7
7	5.4	15.8	174.1
8	3.5	12.4	78
9	4.6	15.8	20.5
10	3.6	13	97.6
11	3.9	13.3	105.5
12	4	14	153.7
13	3.2	12	125.1
14	4.2	14.8	135.3
15	3.4	12.7	144.5
16	4.8	15.6	30.1
17	5	16	68.2
18	2.2	10.5	49.2
19	2.6	11.5	116.5

- (2) **First, get your basic descriptive statistics.** Go to the DATA tab, and select the Data Analysis Toolpak (on the right). If you do not see that option, do a google search for “Data Analysis Toolpak in Excel” to find the instructions on how to add it (for free)

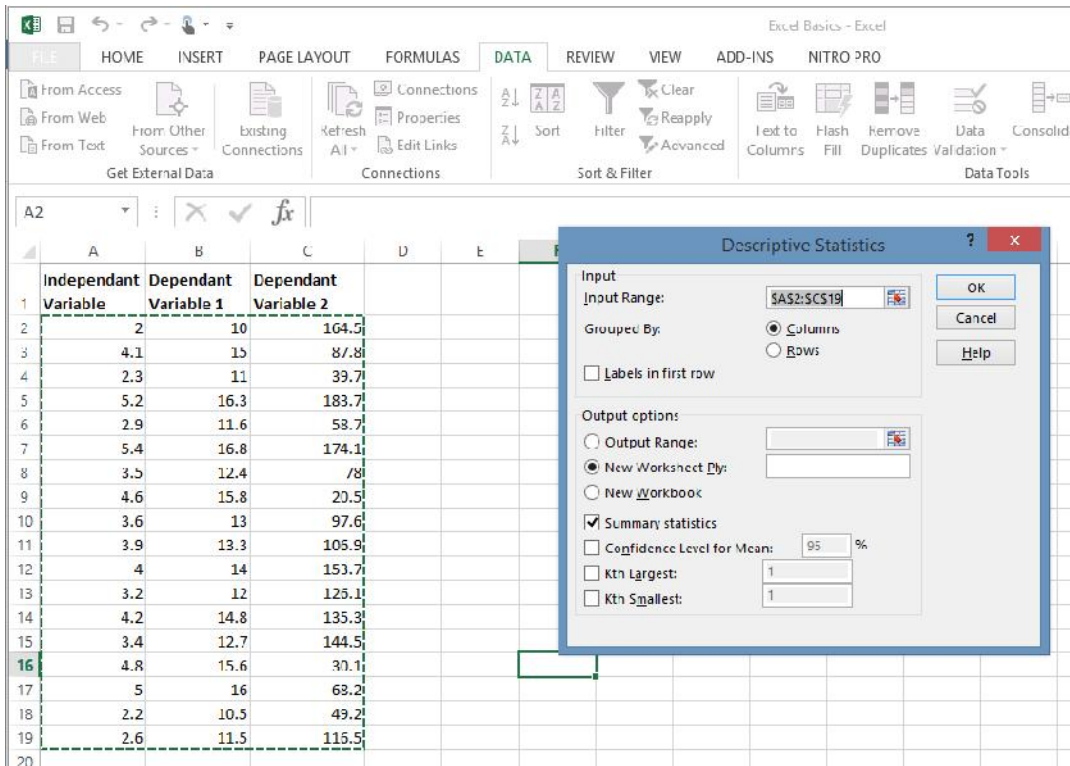


	Independent Variable	Dependent Variable 1	Dependent Variable 2
2	2	10	164.5
3	4.1	15	87.8
4	2.3	11	39.7
5	5.2	15.3	183.7
6	2.9	11.6	58.7
7	5.4	15.8	174.1
8	3.5	12.4	78
9	4.6	15.8	20.5
10	3.6	13	97.6
11	3.9	13.3	106.9
12	4	14	153.7
13	3.2	12	126.1
14	4.2	14.8	130.3
15	3.4	12.7	144.5
16	4.8	15.5	30.1
17	5	16	68.2
18	2.2	10.5	49.2
19	2.6	11.5	116.5

(3) In the Data Analysis popup window, scroll down to select “Descriptive Statistics” and then “OK”



(4) Put your mouse in “Input Range” and draw a box around all of your data. Check the box for “Summary statistics”, and then click OK.



- (5) In the data output, you are likely most interested in the mean and standard deviation. These are standard statistics to present when describing your data.

	A	B	C	D	E	F	G
1	Column1		Column2		Column3		
2							
3	Mean	3.715666667	Mean	13.16111111	Mean	101.95	
4	Standard Error	0.247371806	Standard Error	0.505986314	Standard Error	12.05623059	
5	Median	3.75	Median	13.15	Median	102.25	
6	Mode	#N/A	Mode	#N/A	Mode	#N/A	
7	Standard Deviation	1.049509689	Standard Deviation	2.146718121	Standard Deviation	51.15025444	
8	Sample Variance	1.101470588	Sample Variance	4.608398693	Sample Variance	2616.348529	
9	Kurtosis	-1.005019784	Kurtosis	-1.320826853	Kurtosis	-1.191223465	
10	Skewness	-0.068885877	Skewness	0.027225647	Skewness	0.00058721	
11	Range	3.4	Range	6.8	Range	153.2	
12	Minimum	2	Minimum	10	Minimum	70.5	
13	Maximum	5.4	Maximum	16.8	Maximum	183.7	
14	Sum	66.9	Sum	242.3	Sum	1835.1	
15	Count	18	Count	18	Count	18	

- (6) You can also get mean and standard deviation by entering formula in the sheet itself, dragging a box around the data, closing the parentheses, and hitting enter. You need to do each column of data separately. Make sure to not include the title or any words in the data.

	A	B	C	D
1	Independent Variable	Dependant Variable 1	Dependant Variable 2	
2	2	10	164.5	
3	4.1	15	87.8	
4	2.3	11	39.7	
5	3.2	16.3	183.7	
6	2.9	11.5	58.7	
7	5.4	16.3	174.1	
8	3.5	12.4	78	
9	4.6	15.8	20.5	
10	3.6	13	97.6	
11	3.9	13.3	106.9	
12	4	14	153.7	
13	3.2	12	126.1	
14	4.2	14.3	135.3	
15	3.4	12.7	144.5	
16	4.8	15.6	30.1	
17	5	15	68.2	
18	2.2	10.5	49.2	
19	2.6	11.5	116.5	
20	=average(A2:A19)			

	A	B	C	D
1	Independent Variable	Dependant Variable 1	Dependant Variable 2	
2	2	10	164.5	
3	4.1	15	87.8	
4	2.3	11	39.7	
5	3.2	16.3	183.7	
6	2.9	11.5	58.7	
7	5.4	16.3	174.1	
8	3.5	12.4	78	
9	4.6	15.8	20.5	
10	3.6	13	97.6	
11	3.9	13.3	106.9	
12	4	14	153.7	
13	3.2	12	126.1	
14	4.2	14.3	135.3	
15	3.4	12.7	144.5	
16	4.8	15.6	30.1	
17	5	15	68.2	
18	2.2	10.5	49.2	
19	2.6	11.5	116.5	
20	3.716666667			
21	=stdev(A2:A19)			

- (7) You can also run a basic correlation analysis this way, but to do so you need to highlight one column of data, then put in a comma, then the second column of data and a closing parentheses. The output will tell you how correlated the data is (closer to 1 is more strongly correlated).

The image displays two screenshots of Microsoft Excel illustrating a correlation analysis. Both screenshots show a data table with three columns: 'Independent Variable', 'Dependent Variable 1', and 'Dependent Variable 2'. The data points are as follows:

Independent Variable	Dependent Variable 1	Dependent Variable 2
2	10	164.5
4.1	15	87.8
2.3	11	39.7
5.2	16.3	183.7
2.9	11.6	58.7
5.4	16.8	174.1
3.5	12.4	78
4.6	15.8	20.5
3.6	13	97.6
3.9	13.3	106.9
4	14	153.7
3.2	12	126.1
4.2	14.8	135.3
3.4	12.7	144.5
4.8	15.6	30.1
5	16	68.2
2.2	10.5	49.2
2.6	11.5	116.5

The left screenshot shows the formula bar with the formula `=CORREL(A2:A19,B2:B19)` entered in cell A22, which has calculated the correlation coefficient as 0.985395735. The right screenshot shows the same data with summary statistics calculated for the dependent variables:

Statistic	Value
Mean	3.716666667
Standard Deviation	1.049509689
Correlation between Indep & Dep Var 1	0.985395735