

X1D: VIN Create Pivot Tables using Excel 2013 1

Creating Pivot Tables Using Excel 2013

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*Slides and Demo output at: www.StatLit.org/pdf/Excel2013-Create-Pivot-Tables-Slides.pdf
[pdf/Excel2103-Create-Pivot-Tables-Demo.pdf](http://www.StatLit.org/pdf/Excel2103-Create-Pivot-Tables-Demo.pdf)*

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The Goal

Goal: to show the steps involved in creating six different kinds of pivot tables from the same data set.

Creating each of the six tables starts with steps B and C (slides 3 thru 6). Step D (slide 7) is basis for each table

Table 1: Two-way count table (slides 8-10)
 Table 2: Two-way table of averages (slides 11-12)
 Table 3: Two-group table of statistics (slides 13-16)
 Table 4: 100% Column Table (slides 17-19)
 Table 5: 100% Row Table (slides 20-21)
 Table 6: Two-way table of percentages (slides 22-23)

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A: Open/Download Data File; Press 'Enable Editing' button

Excel data at:
www.statlit.org/XLS/Excel2013-Create-Pivot-Tables-Data.xlsx

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Create Excel Pivot Tables from this data: A1:H241

Data for Q1-Q4 (A-D) is Binary: 0=No, 1=Yes.
 Data for Q5-Q6 (E-F) is Ordinal (discrete): 1-5.
 Data for Q7-Q8 (G-H) is Quantitative (ratio).

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Row	K	L	M
0	1	0	0	3	5	67	5	2	Table 1: Insert pivot table at L6 (Not K6). Use Q1 for Values. Show Q1 values		
0	1	0	1	4	1	62	4	3	Optional: If headings not shown: Pivot Table To		
0	1	0	1	3	4	60	5	4			
0	1	1	0	4	5	60	4	5			
0	0	1	0	3	1	71	3	6			

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B: From the Insert ribbon, Select "Pivot Table"

	D	E	F	G	H	I
Q3	Q4	Q5	Q6	Q7	Q8	
0	0	3	5	67	5	
0	1	4	1	62	4	
0	1	3	4	60	5	
5	4	0	1	0	4	60
6	5	0	0	1	0	71
7	6	0	0	0	5	2
8	7	0	0	1	0	1
9	8	1	0	0	0	4
10	9	1	0	1	0	3
11	10	0	1	1	1	2
12	11	0	1	0	0	1

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C: Select/Enter Range as A1:H241 Set 'Location' for each graph.

Row	K	L	M	N	O
2	Table 1: Insert pivot table at L6 (Not K6). Use Q1 for rows, Q2 for Columns				
3	Use Q1 for Values. Show Q1 values				
4	Optional: If headings not shown: P				
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

D: Table Layout w Field List: Build each table from this.

1a: Insert@L6. Use Q1 for Rows, Q2 for columns, Q1 for Values

Drag required fields to the table layout (left side) OR to the boxes (below).

1b: Right-mouse on Data Change "Sum" to "Count"

1c. Table 1 Final Result Coding: 0=No; 1=Yes

Table 1			
Count of Q1	Q2		
Q1	0	1	Grand Total
	0	95	35
	1	78	32
Grand Total	173	67	240

Any field in the dataset can be used in the body. 32 subjects answer "yes" (1) to Q1 and Q2.

2a: Insert@L19. Q1 Row; Q2 Col Q7 Values. Change Sum to Ave.

2b. Table2 (Final Result) Coding: 0=No; 1=Yes

Table 2			
Average of Q7	Q2		
Q1	0	1	Grand Total
	0	66.03	67.31
	1	64.83	62.84
Grand Total	65.49	65.18	65.40

65.18 is average of Q7 answers for those who said "Yes" (1) to Q2.
62.84 is the average of Q7 answers for those who said "Yes" to both Q1 and Q2..

**3a: Insert@L33. Q1 Row; Q2 Col
Drag Q7 to Values three times !**

Table 3: Create pivot table: Q1 for rows, Q2 for columns and Q7 for data (body.)
Show average, standard deviation and count for all cells.
Horizontal or vertical layout is OK.

Q1	Data	Q2	0	1	Grand Total
0	Sum of Q7		6273	2356	8629
	Sum of Q7_2		6273	2356	8629
	Sum of Q7_3		6273	2356	8629
1	Sum of Q7		5057	2011	7068
	Sum of Q7_2		5057	2011	7068
	Sum of Q7_3		5057	2011	7068
Total	Sum of Q7		11330	4367	15697
Total	Sum of Q7_2		11330	4367	15697
Total	Sum of Q7_3		11330	4367	15697

If problem dragging Q7 3rd time to same place, drag to different place

**3b: If data spreads horizontally,
move "Sigma Values" to Rows**

FILTERS

COLUMNS

- Q2
- Σ Values

ROWS

- Q1

Σ VALUES

- Sum of Q7
- Sum of Q7_2
- Sum of Q7_3

**3c: Change Show Values to
Average, Count and StdDev.**

Right-mouse Q7; change to Average.; Right-mouse Q7_2;
change to Count. Right-mouse Q7_3; change to StdDev.

Q1	Data	Q2	0	1	Grand Total
0	Average of Q7		66.03157895	67.31428571	
	Count of Q7_2				
	Sum of Q7_3				
1	Average of Q7		64.83	62.84	64.25
	Count of Q7		78.00	32.00	110.00
	StdDev of Q7_2		12.48	11.62	12.21
Total	Average of Q7		65.49	65.18	65.40
Total	Count of Q7		173.00	67.00	240.00
Total	StdDev of Q7_2		12.12	10.98	11.79

**3d. Table 3 (Final Result)
Coding: 0=No; 1=Yes**

Q1	Data	Q2	0	1	Grand Total
0	Average of Q7		66.03	67.31	66.38
	Count of Q7		95.00	35.00	130.00
	StdDev of Q7_2		11.86	10.05	11.38
1	Average of Q7		64.83	62.84	64.25
	Count of Q7		78.00	32.00	110.00
	StdDev of Q7_2		12.48	11.62	12.21
Total	Average of Q7		65.49	65.18	65.40
Total	Count of Q7		173.00	67.00	240.00
Total	StdDev of Q7_2		12.12	10.98	11.79

65.40 is average of Q7 for all respondents.
64.25 is average of Q7 for those who said Yes to Q1.

**4a: Double-click on Data Field;
Select Count in 'Summarize by'**

Insert Table
at R6
Q1 Rows
Q2 Cols
Q2 Values

Drop Report Filter Fields Here

Sum of Q2

Q1

0

1

Grand Total

Q2

0

1

Grand Total

Q3

0

1

Grand Total

Drop fields between areas below:

Report Filter

Column Labels

Q2

Row Labels

Q1

Σ Values

Sum of Q2

Summarize Values By

- Count
- Average
- Max
- Min
- Product
- More Options...

**4b: Select "Show Values as"
Select "% of Column Total"**

Drop Report Filter Fields Here

Count of Q2

Q1

0

1

Grand Total

Q2

0

1

Grand Total

Q3

0

1

Grand Total

Drop fields between areas below:

Report Filter

Column Labels

Q2

Row Labels

Q1

Σ Value

Count of Q2

Show Values As

- % of Calculation
- % of Grand Total
- % of Column Total
- % of Row Total
- % of Parent Row Total
- % of Parent Column Total
- % of Grand Total
- % of Grand Total
- Difference From...
- % Difference From...
- Running Total In...
- Rank Smallest to Largest...
- Rank Largest to Smallest...
- Index
- More Options...

**4c. Table 4 (Final Result)
Create 100% Column Table**

Table 4.

Count of Q2	Q2		
Q1	No 0	Yes 1	Grand Total
No 0	54.91%	52.24%	54.17%
Yes 1	45.09%	47.76%	45.83%
Grand Total	100.00%	100.00%	100.00%

45.83% of all respondents said “Yes” to Q1.
47.76% of those who said Yes to Q2 said Yes to Q1.

**5a: Select “Show Values as”;
Select “% of Row Total”**

Copy Table 4 or
Insert table:
At R19.
Q1 Rows
Q2 Cols
Q2 Value/Body

**5b. Table 5 (Final Result)
Create 100% Row Table;**

Table 5.

Count of Q2	Q2		
Q1	No 0	Yes 1	Grand Total
No 0	73.08%	26.92%	100.00%
Yes 1	70.91%	29.09%	100.00%
Grand Total	72.08%	27.92%	100.00%

27.92% of all respondents said “yes” to Q2.
29.09% of those saying yes to Q1 said Yes to Q1.
The first step for Table 5 is the same as 4a for Table 4.

**6a: Change Sum to Average;
Format data as Percentages**

Insert Table
at R33

Q1 Rows; Q2 Cols;
Q3 Values (Body)

Leave “Show Values” as “No Calculation”

**6b. Table 6 (Final Result)
Create two-way half table of Q3**

Table 6.

Average of Q3	Q2		
Q1	No 0	Yes 1	Grand Total
No 0	81%	71%	78%
Yes 1	37%	34%	36%
Grand Total	61%	54%	59%

59% of respondents said Yes to Q3.
36% of those who said Yes to Q1 said Yes to Q3.
Of those who said Yes to Q1, 36% said Yes to Q3.

Conclusion

Pivot tables are one of the more powerful features of Excel.
Knowing how to create pivot tables is a *valuable skill*.
Knowing which is the better table is a *more valuable skill*.
Knowing how to read, interpret and communicate the data summarized in pivot tables is a *most valuable skill*.