

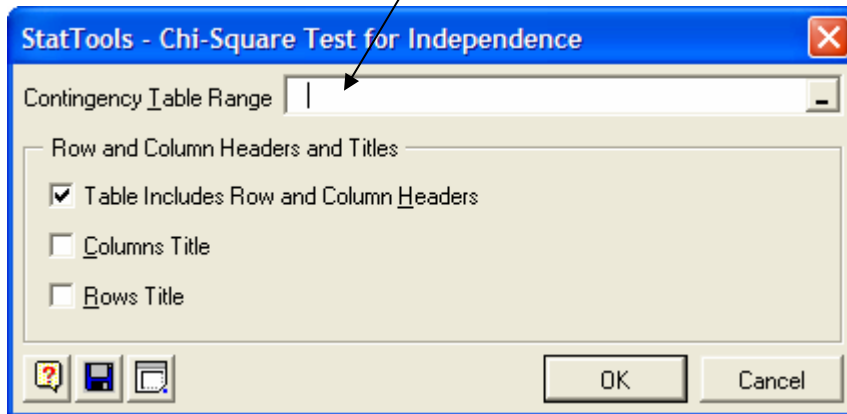
## Summary statistics for Categorical variables:

**One categorical variable:** We will use the pivot table which give the frequencies. If you want proportions or percentages, you'll have to calculate them by hand.

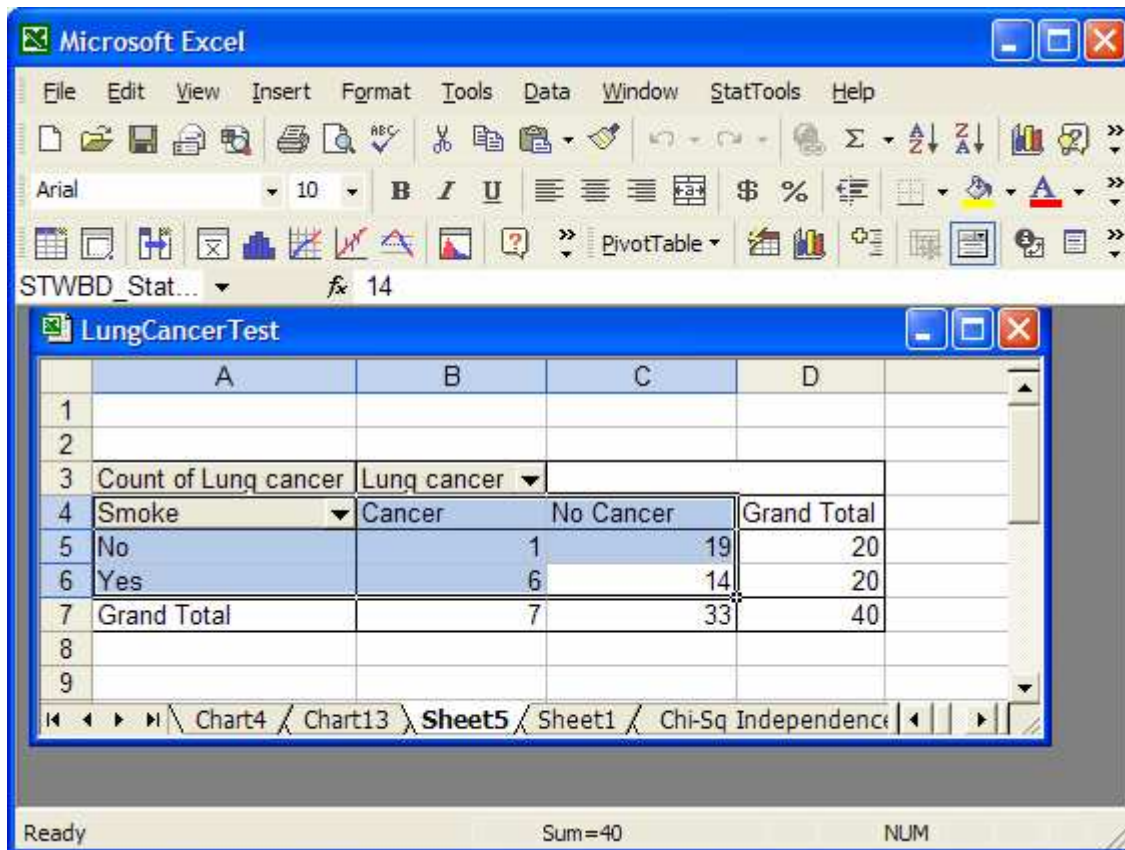
**Two categorical variables:** We want to make a contingency table and conditional proportion table. The example I'll use has explanatory variable *Smoke* and response variable *Lung Cancer*.

First you must make a pivot table using the Pivot Table directions.

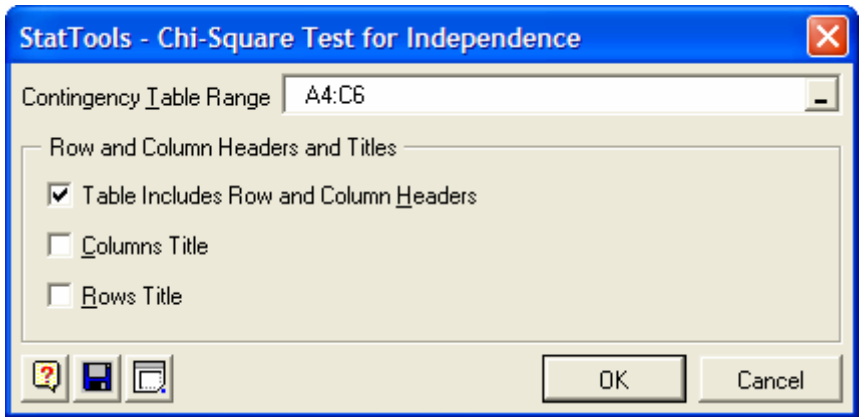
To get the Contingency and proportions tables below go to **StatTools** → **Statistical Inference** → **Chi-Square Test for Independence**. You will get something like the window below. You will have to fill in the blank **Contingency Table Range** line.



To do this, select the variables and counts from the pivot table of your data using your mouse with the left button held down. Below I've shown in blue the part of the chart that you should select. Do not select the top line which in your table OR the Grand Total for either columns or rows. In my example, this top line begins with *Count of Lung Cancer*. If you include the top line in the pivot table, you will get an error message.



	A	B	C	D
1				
2				
3	Count of Lung cancer	Lung cancer		
4	Smoke	Cancer	No Cancer	Grand Total
5	No	1	19	20
6	Yes	6	14	20
7	Grand Total	7	33	40
8				
9				



Once you've selected the correct parts of the pivot table, you'll get something like the window to the left. Notice that my range is A4:C6. These are the cell numbers of the top left and bottom right of the part of the pivot table I highlighted.

Click **Ok** and you are done.

Your output should look something like the following:

<b>StatTools</b>		(Core Analysis Pack)
<b>Analysis:</b>	Chi-Square Independence Test	
<b>Performed By:</b>	ellen	
<b>Date:</b>	Thursday, August 24, 2006	
<b>Updating:</b>	Live	

<i>Original Counts</i>	Cancer	No Cancer	Total
No	1	19	20
Yes	6	14	20
Total	7	33	40

<i>Percentage of Rows</i>	Cancer	No Cancer	Total
No	5.00%	95.00%	100.00%
Yes	30.00%	70.00%	100.00%

<i>Percentage of Columns</i>	Cancer	No Cancer
No	14.29%	57.58%
Yes	85.71%	42.42%
	100.00%	100.00%

<i>Expected Counts</i>	Cancer	No Cancer
No	3.5000	16.5000
Yes	3.5000	16.5000

<i>Distance from Expected</i>	Cancer	No Cancer
No	1.7857	0.3788
Yes	1.7857	0.3788

<i>Chi-Square Statistic</i>	
Chi-Square	4.3290
p-Value	0.0375