

## SPSS 13.0 HELP SHEET: Two-Way Chi-Square

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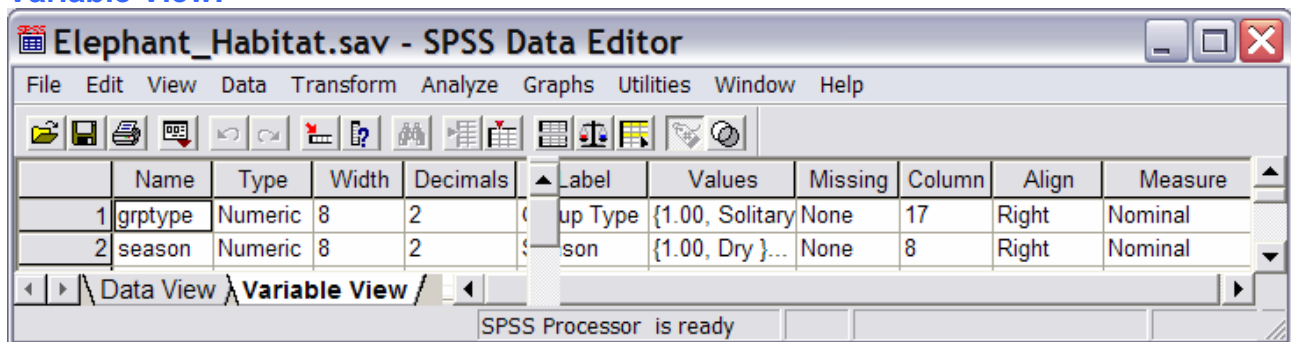
1. How to entry data to do a Two-way Chi-square.
2. How to do a Two-way Chi-square.

### 1. How to enter data to do a Two-way Chi-square.

For general advice on data entry see the “How to enter data into SPSS” help sheet.

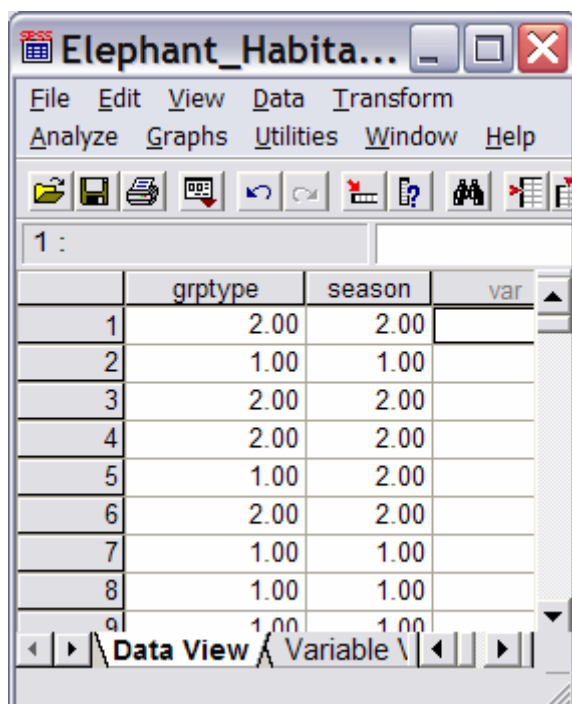
Your data should be in their “raw” form (see “starting point” help sheet) such as for the variable *grptype* and *season* in the example below. In this example *grptype* is measured at the nominal level using the following categories: 1 (value label = solitary); 2 (value label = bull group), 3 (value label = family group), 4 (value label = family group with bull(s)). *Season* is measured at the nominal level using the following categories: 1 (value label = dry), 2 (value label = wet). If your data are already “tallied up” into a frequency distribution you are better off using the interactive calculation sheet.

### Variable View:



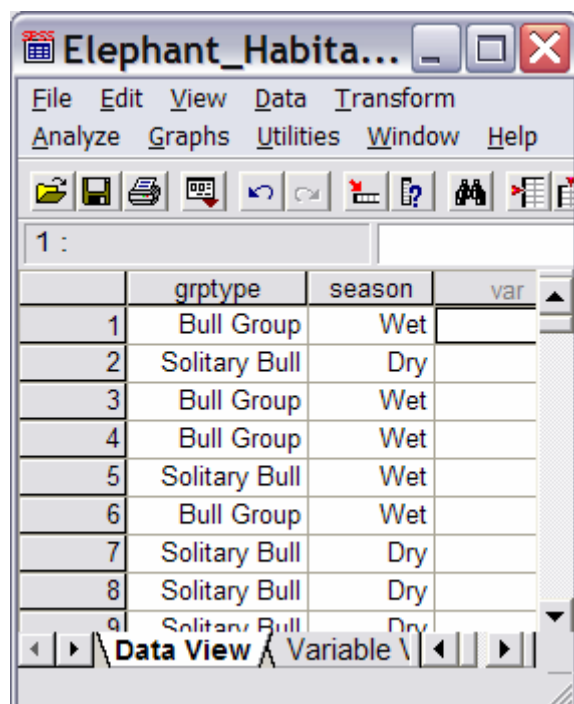
	Name	Type	Width	Decimals	Label	Values	Missing	Column	Align	Measure
1	grptype	Numeric	8	2	Group Type	{1.00, Solitary	None	17	Right	Nominal
2	season	Numeric	8	2	Season	{1.00, Dry }...	None	8	Right	Nominal

### Data View (View – Value Labels off)



	grptype	season	var
1	2.00	2.00	
2	1.00	1.00	
3	2.00	2.00	
4	2.00	2.00	
5	1.00	2.00	
6	2.00	2.00	
7	1.00	1.00	
8	1.00	1.00	

### Data View (View – Value Labels on)



	grptype	season	var
1	Bull Group	Wet	
2	Solitary Bull	Dry	
3	Bull Group	Wet	
4	Bull Group	Wet	
5	Solitary Bull	Wet	
6	Bull Group	Wet	
7	Solitary Bull	Dry	
8	Solitary Bull	Dry	

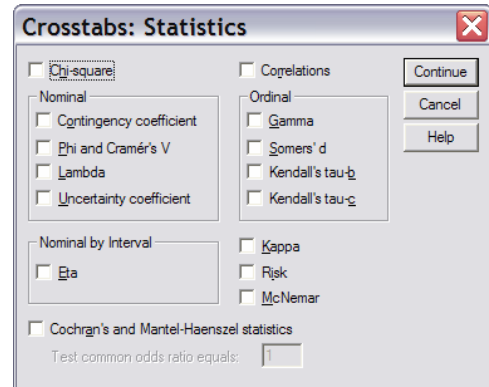
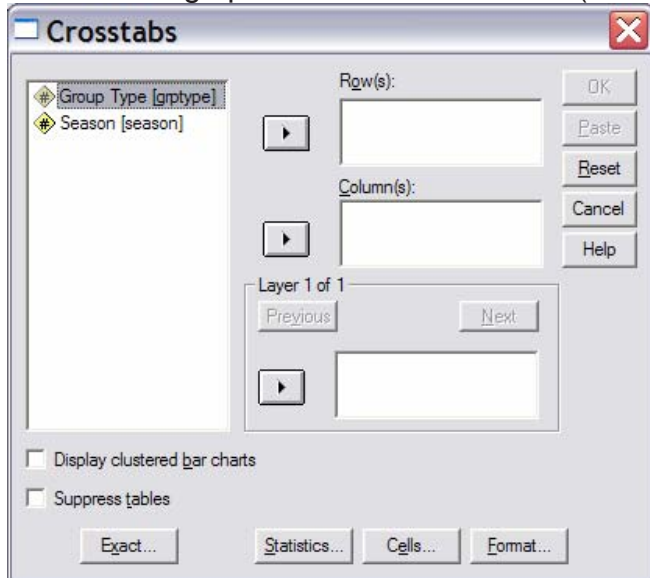
## 2. How to do a Two-way Chi-square.

To get SPSS to conduct a two-way chi-square test on your data:

Open your data file.

Select: Analyze – Descriptive - Crosstabs...

This will bring up the Crosstabs window (below left).



Select one variable and send it to **Row(s)**. Select the other variable and send it to the **Column(s)**.

Press the **Statistics** button to bring up the Define Groups window (above right). Select the **Chi-square** option. Click Continue and then OK.

The key elements of the output are:

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.297 <sup>a</sup>	3	.000
Likelihood Ratio	20.075	3	.000
Linear-by-Linear Association	14.519	1	.000
N of Valid Cases	562		

STATISTIC  
DEGREES OF FREEDOM  
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a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.67.

↑  
This footnote is useful for evaluating if you have a problem with small expected values.