SPSS24 HELP SHEET: Two-Way Chi-Square

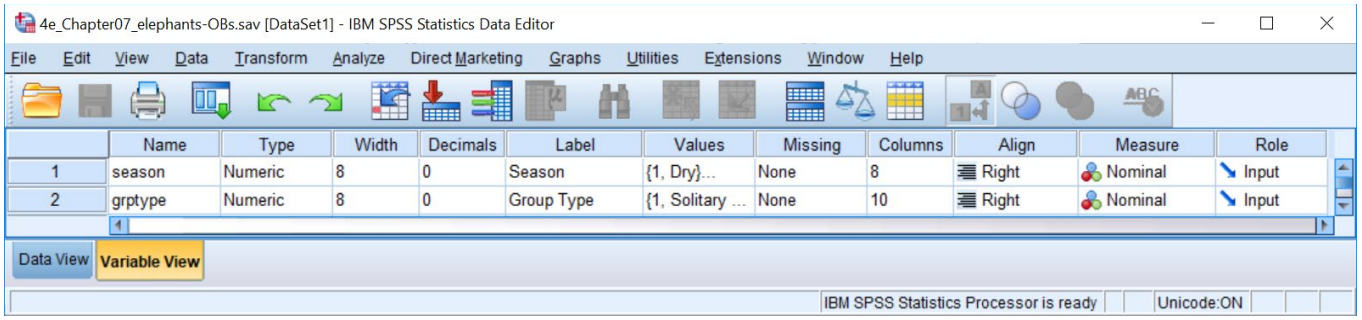
CONTENTS

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

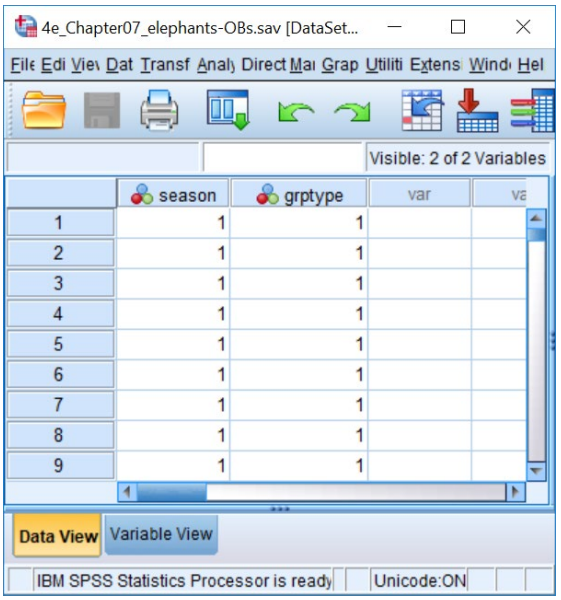
For general advice on data entry see the "**How to enter data into SPSS"** help sheet. The way you enter data into SPSS depends on whether it is raw observations or frequencies.

1a. For data as raw observations

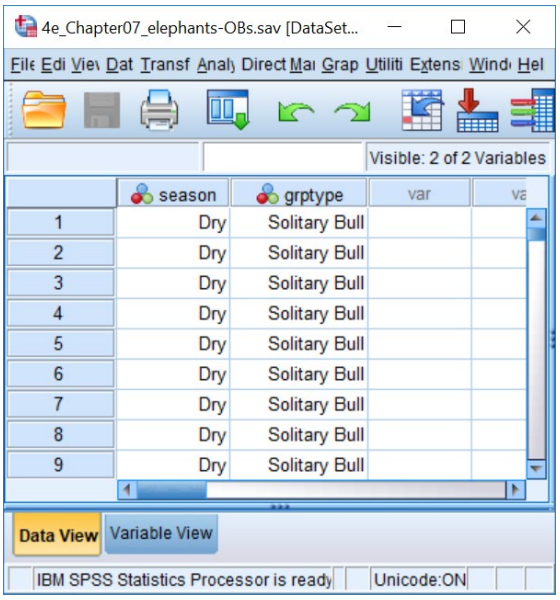
Variable View:



Data View
(View – Value Labels off)

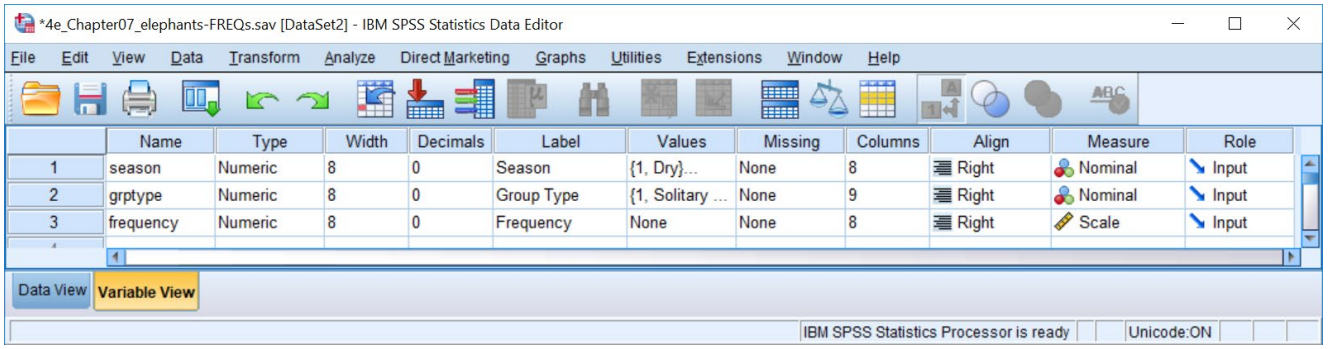


Data View
(View – Value Labels on)

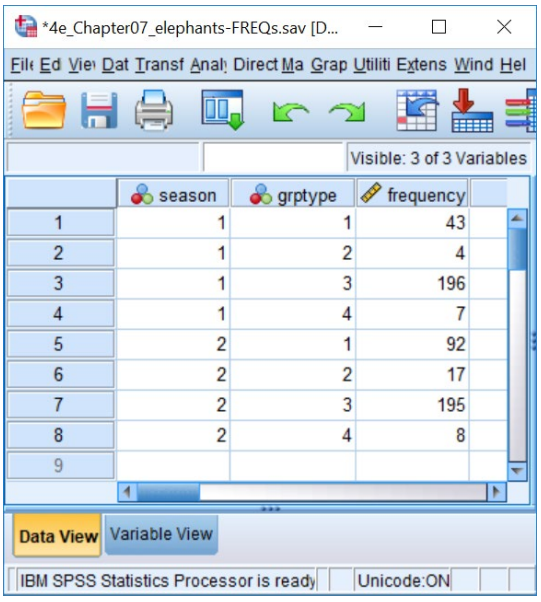


1b. For data as frequencies (including weighting cases procedure)

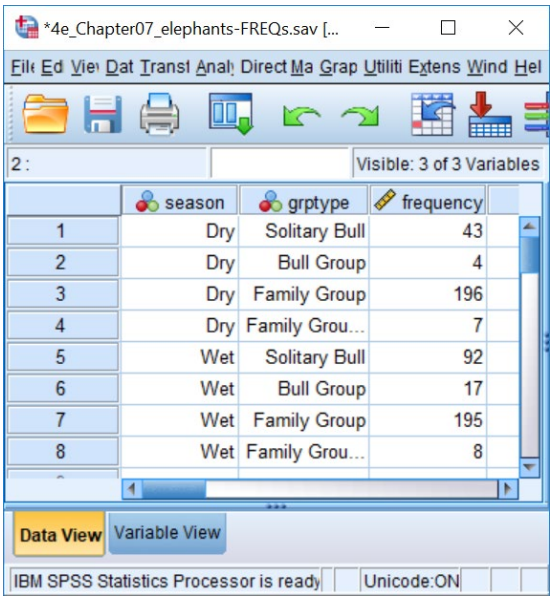
Variable View:



Data View (View – Value Labels off)



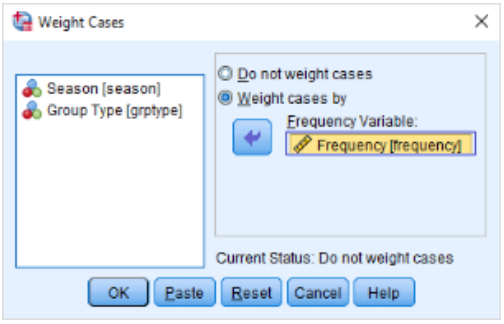
Data View (View – Value Labels on)



When data are entered as frequencies the following additional step is needed before starting the analyses.

Select: Data - Weight Cases . . .

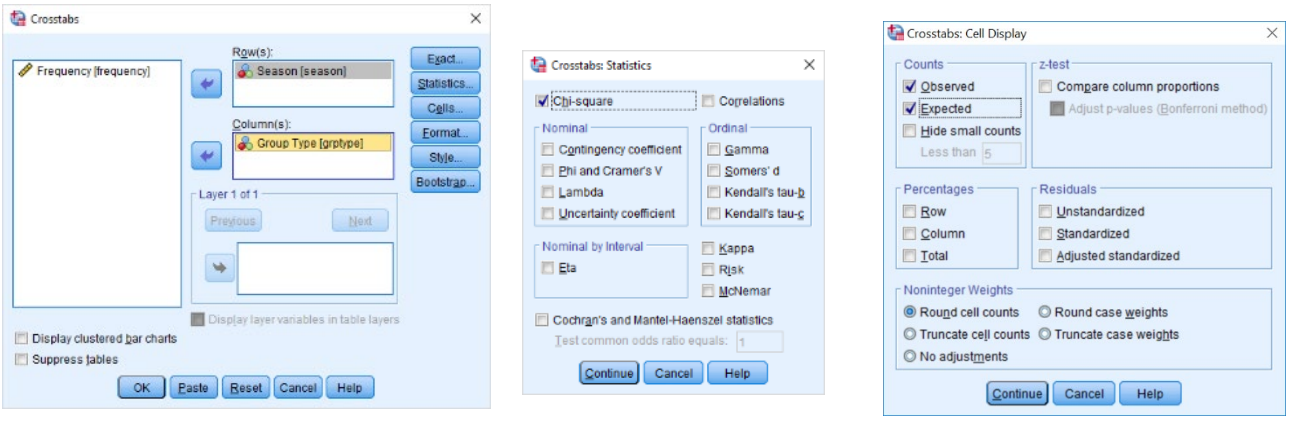
The **Weight Cases** dialogue window should appear. You should select the **Weight cases by** option. You need to select the variable from the list on the left, which contains the frequencies, and send it to the **Frequency Variable** box.



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

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. Select one variable and send it to **Row(s).** Select the other variable and send it to the **Columns(s)** box**.** Click the **Statistics** button to bring up the **Crosstabs: Statistics** window and select the **Chi-square** then click **Continue.** Click the **Cells** button to bring up the **Crosstabs: Cell Display** window and select **Observed** and **Expected**. Click **Continue**, then **OK**.



This will produce the following in the **Output** window.

Season * Group Type Crosstabulation

			Group Type				
			Solitary Bull	Bull Group	Family Group	Family Group with Bull(s)	Total
Season	Dry	Count	43	4	196	7	250
		Expected Count	60.1	9.3	173.9	6.7	250.0
	Wet	Count	92	17	195	8	312
		Expected Count	74.9	11.7	217.1	8.3	312.0
Total		Count	135	21	391	15	562
		Expected Count	135.0	21.0	391.0	15.0	562.0

Total sample size (N)

Statistic (X^2)

Chi-Square Tests

Degrees of Freedom

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.297[a]	3	.000
Likelihood Ratio	20.075	3	.000
Linear-by-Linear Association	14.519	1	.000
N of Valid Cases	562		

P

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.67.

In summary the key information from the test is
two-way classification chi-square: $X^2_3 = 19.30$, $N = 562$, $P < 0.001$