

SPSS24 HELP SHEET: One-Way Chi-Square

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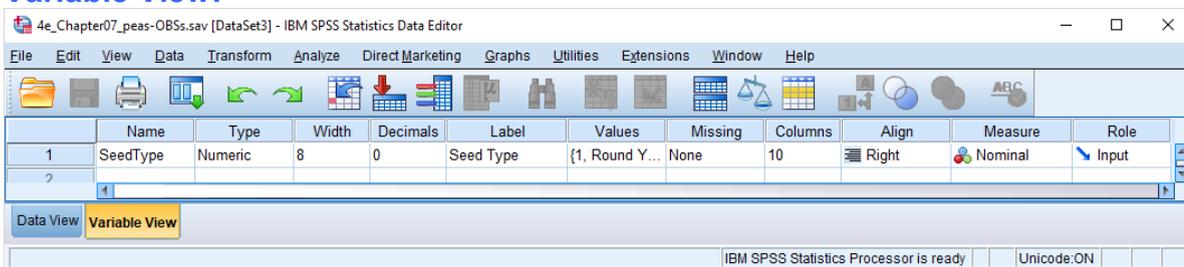
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1. How to enter data to do a One-way Chi-square.

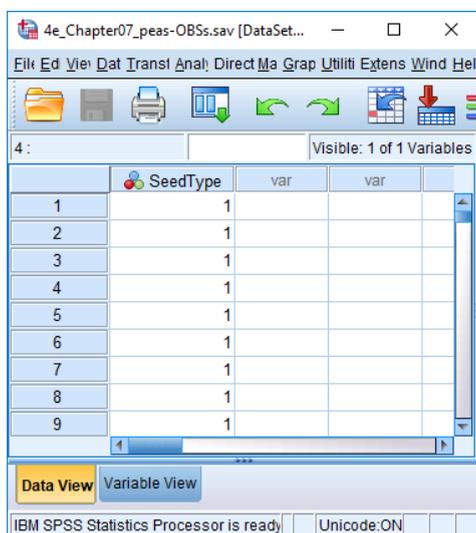
For general advice on data entry see the “How to enter data into SPSS” help sheet. The way you enter data into SPSS depends on whether it is raw observations or frequencies.

1a. For data as raw observations

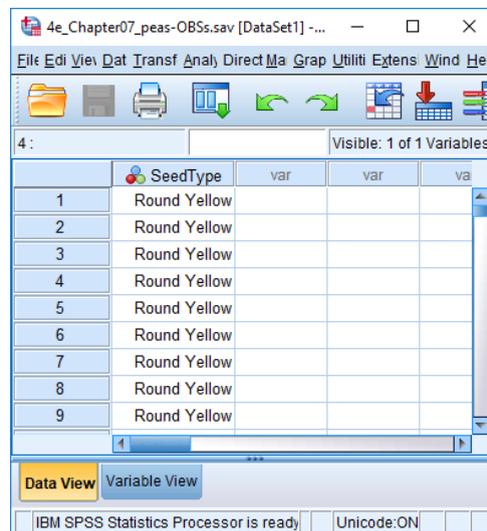
Variable View:



Data View (View – Value Labels off)

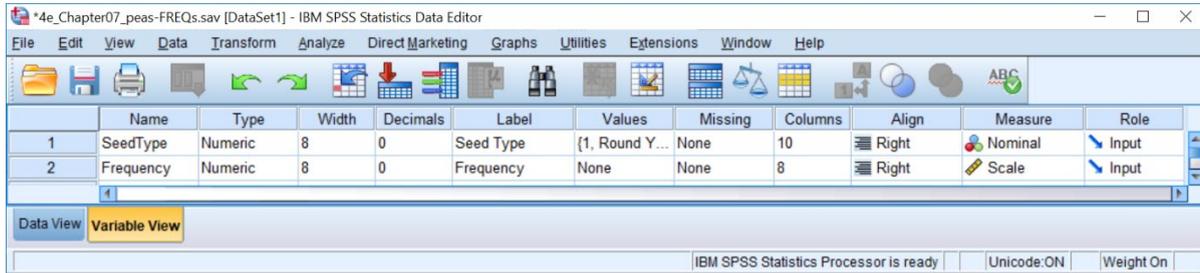


Data View (View – Value Labels on)

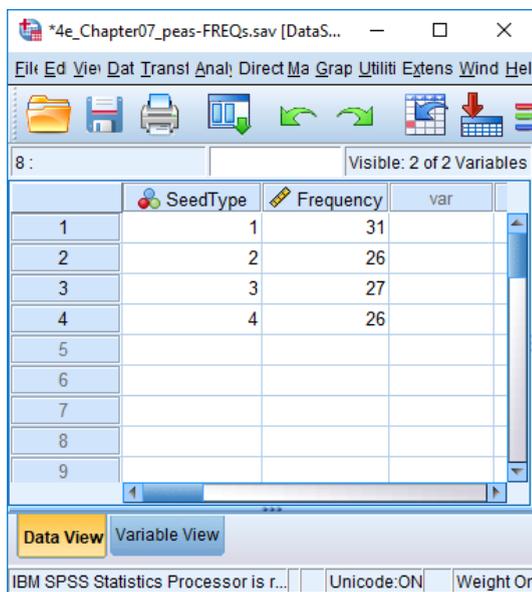


1b. For data as frequencies (including weighting cases procedure)

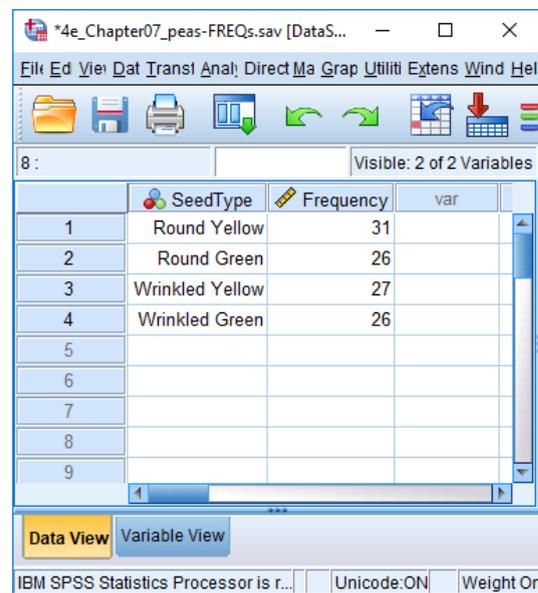
Variable View:



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



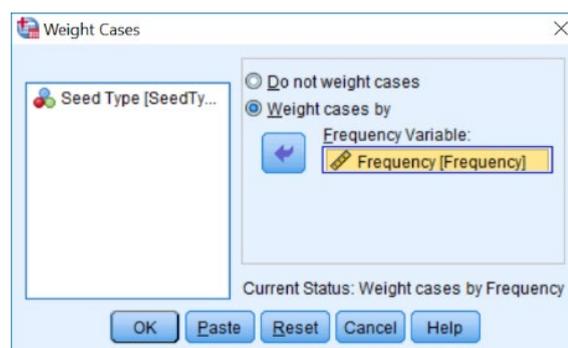
**Data View
(View – Value Labels on)**



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 will appear. Select the **Weight cases by** option. Select the variable from the list on the left, which contains the frequencies, and send it to the **Frequency Variable** box. Click **OK**.



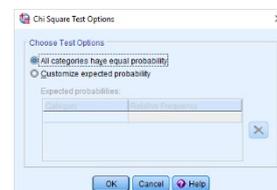
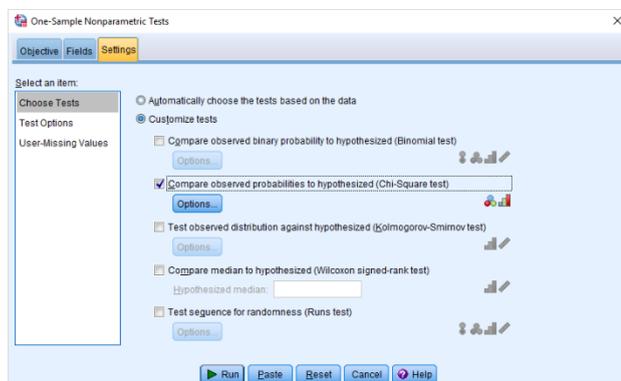
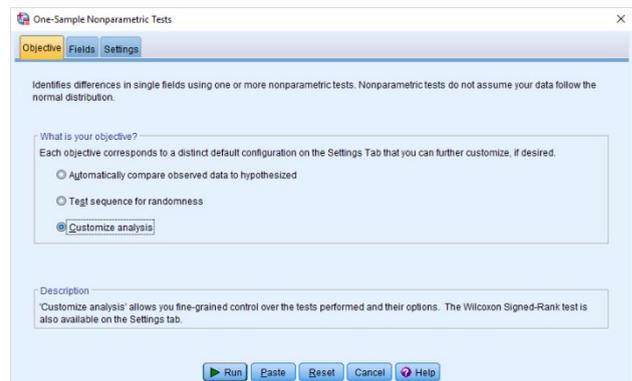
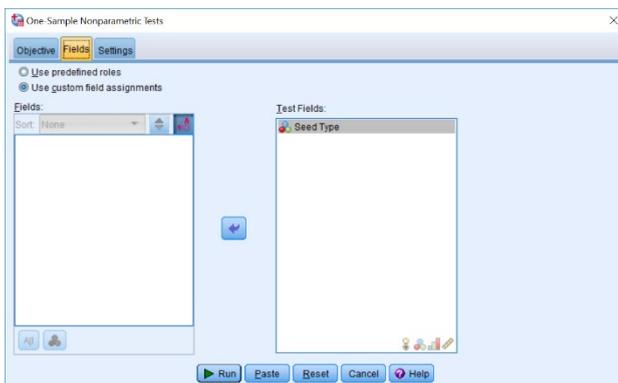
2. How to do a One-way Chi-square test with equal expected values.

To get SPSS to conduct a one-way chi-square test on your data when expected values are equal (Test of Homogeneity):

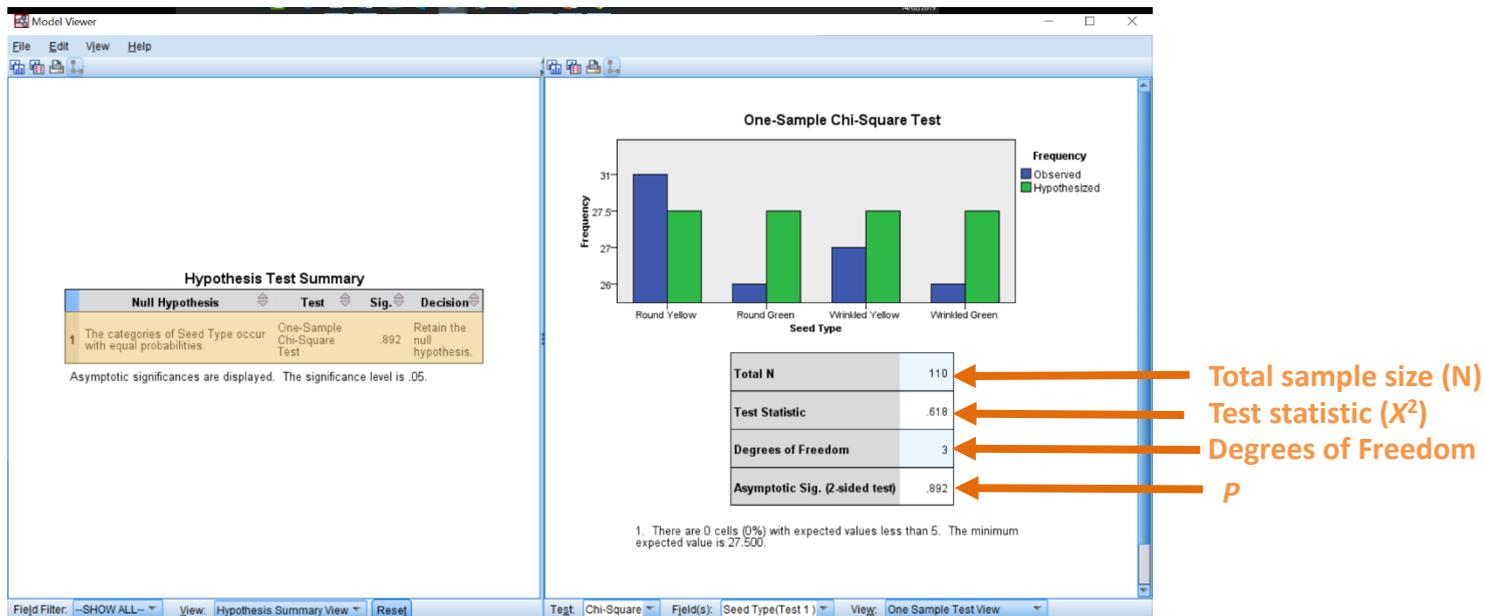
Open your data file.

Select: Analyze – Nonparametric Tests – One Sample...

This will bring up the **One-Sample Nonparametric Tests** window which has three tabs. On this **Objectives** tab select **Customize analysis**. On the **Field** tab make sure your variable, in this example *SeedType*, is in the **Test Fields** box. On the **Settings** tab, select **Customize tests** and **Compare observed probabilities to hypothesized (Chi-Square test)** and click the **Options . . .** button underneath. Choose **All categories have equal probabilities**. Click **OK**.



Click **Run** on the main **One-Sample Nonparametric Test** window. Double-click on the **Hypothesis Test Summary** in your **SPSS Output** window and bring up the **Model Viewer**.



In summary the key information from the test is:

one-way classification chi-square: $\chi^2_3 = 0.618$, $N = 110$, $P = 0.892$

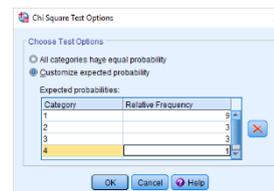
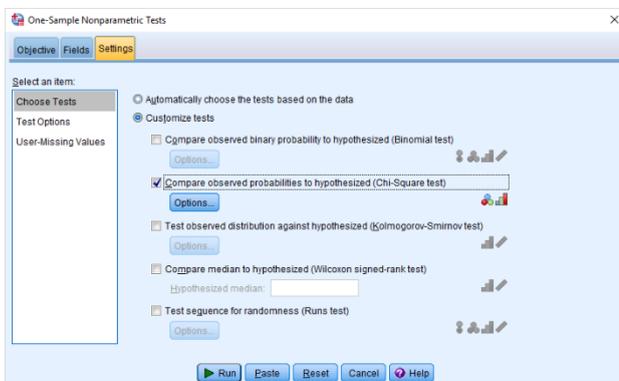
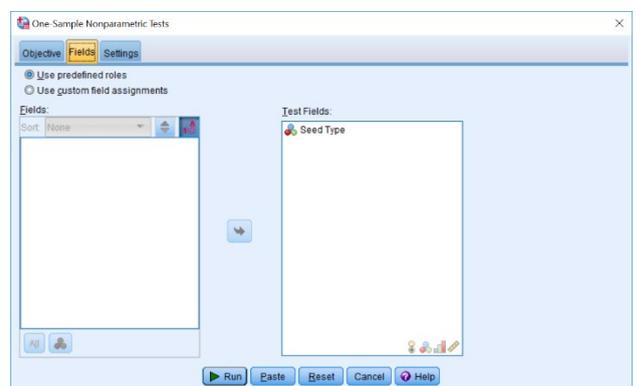
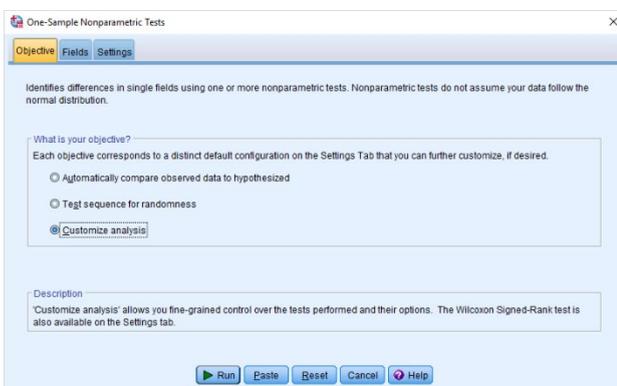
3. How to do a One-Way Chi-square test with unequal expected values.

To get SPSS to conduct a one-way chi-square test on your data when expected values are unequal:

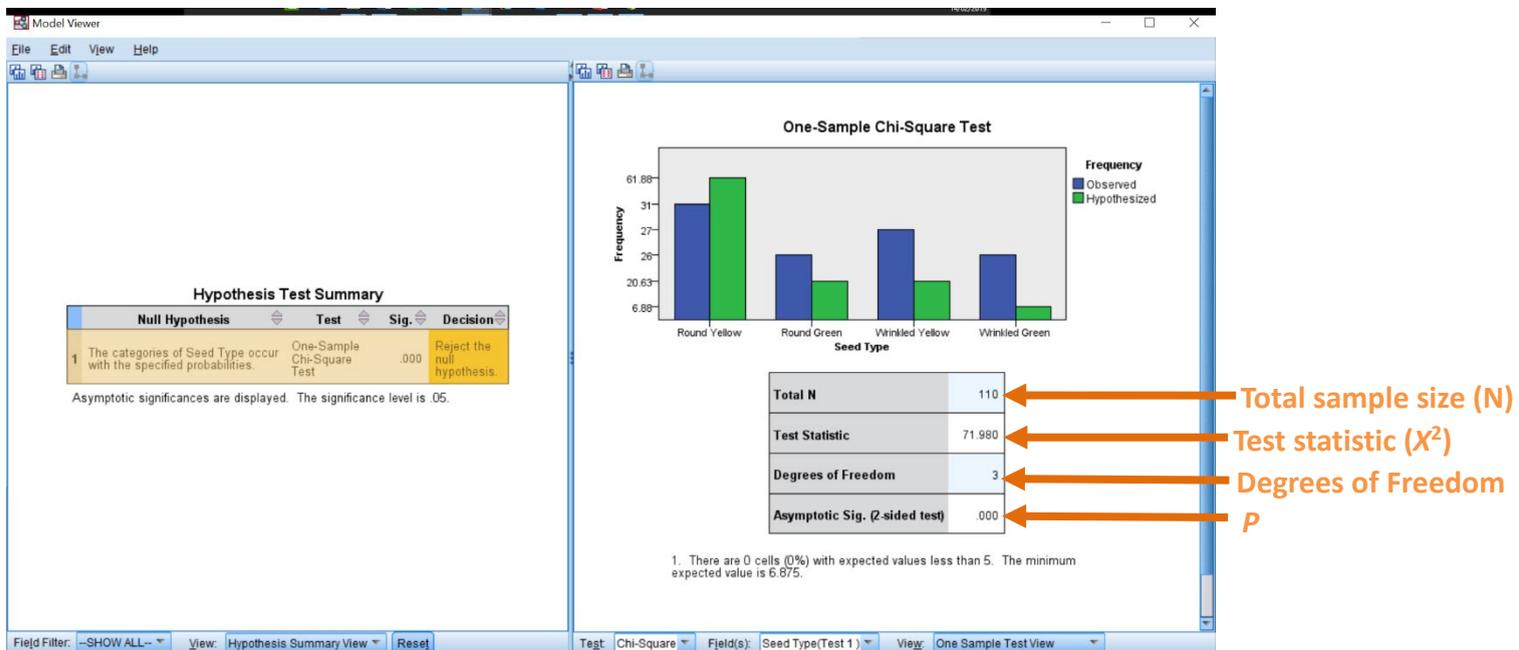
Open your data file.

Select: Analyze – Nonparametric Tests – One Sample...

This will bring up the **One-Sample Nonparametric Tests** window which has three tabs. On this **Objectives** tab select **Customize analysis**. On the **Field** tab make sure your variable, in this example *Seedtype*, is in the **Test Fields** box. On the **Settings** tab, select **Customize tests** and **Compare observed probabilities to hypothesized (Chi-Square test)** and click the **Options . . .** button underneath. Put the number codes used for your different categories in the left column and the expected ratio in the right column. Click **OK**.



Click **Run** on the main **One-Sample Nonparametric Test** window. Double-click on the **Hypothesis Test Summary** in your **SPSS Output** window and bring up the **Model Viewer**.



In summary the key information from the test is
one-way classification chi-square: $X^2_3 = 71.980$, $N = 110$, $P = 0.000$