

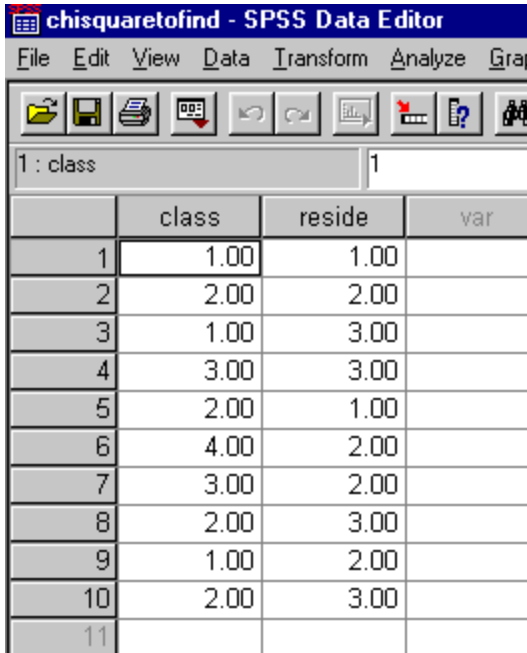
### Data Entry for the Chi-Square Test of Independence

The data entry for a chi-square test of independence will require the same number of columns as characteristics being measured in the study. For example, a study that was interested in determining if there was an association between academic classification (freshman, soph, etc.) and location of residence (home, on-campus, off-campus) would require two columns in the SPSS Data Editor since the researcher measured two (2) characteristics: academic classification and location of residence. The data for this study might be presented as follows:

	Location of Residence		
Academic Classification	Home	On-campus	Off-campus
Freshman	14	16	10
Sophomore	8	20	12
Junior	15	8	17
Senior	16	3	21

When entering the data into the SPSS Data Editor, the columns will contain the information on the Academic Classification and Location of Residence while the rows will represent the individual subjects. It is important to remember that before entering the data into the SPSS Data Editor, you should assign numerical values to the classification levels and locations (e.g., Freshman = 1, Sophomore = 2, etc. and Home = 1, On-campus = 2, etc.). The following illustration is used to further explain the organization of the data.

## Data Entry for Chi-square Test of Independence

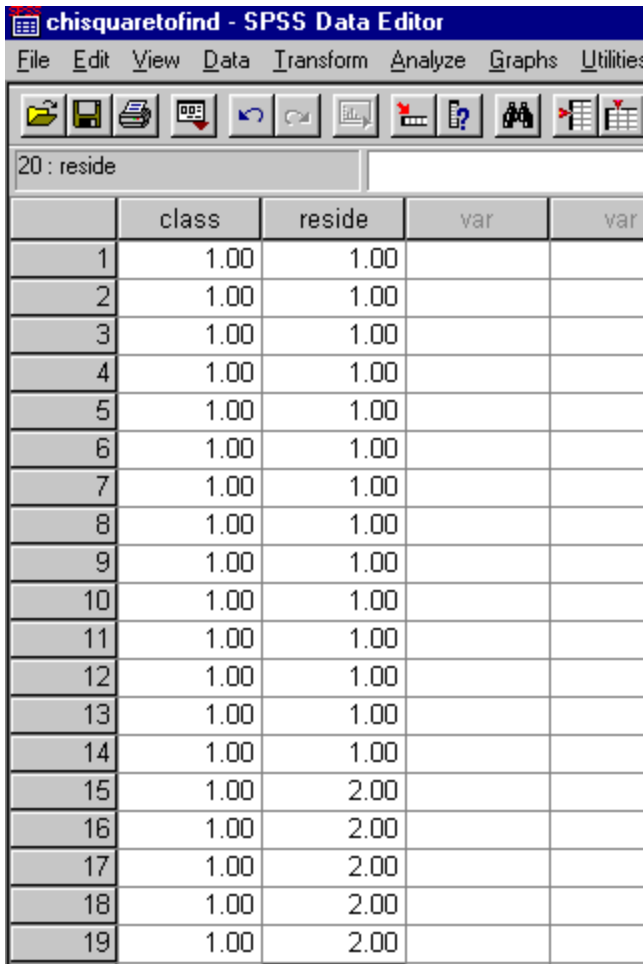


	class	reside	var
1	1.00	1.00	
2	2.00	2.00	
3	1.00	3.00	
4	3.00	3.00	
5	2.00	1.00	
6	4.00	2.00	
7	3.00	2.00	
8	2.00	3.00	
9	1.00	2.00	
10	2.00	3.00	
11			

The data in the above illustration states that subject number 1 (row 1) belonged to class 1 (Freshman) and location 1 (at home). Likewise, the data states that subject 2 (row 2) was a sophomore who lived on-campus.

When the data is presented in a tabular form like above and in the exercises, you can think of each cell in the table as a combination of the characteristics being measured (e.g., there are 14 subjects who belong to the freshman living at home combination.). Therefore, when you enter the data into the SPSS Data Editor, you must enter the freshman living at home combination (class = 1, reside = 1) in 14 rows. After you have entered the first cell, you must continue entering the combinations in the remaining cells (16 rows of freshman/on-campus [class = 1, reside = 2], etc.). The data entry for after the first cell and part of the second would look similar to the following:

## Data Entry for Chi-square Test of Independence

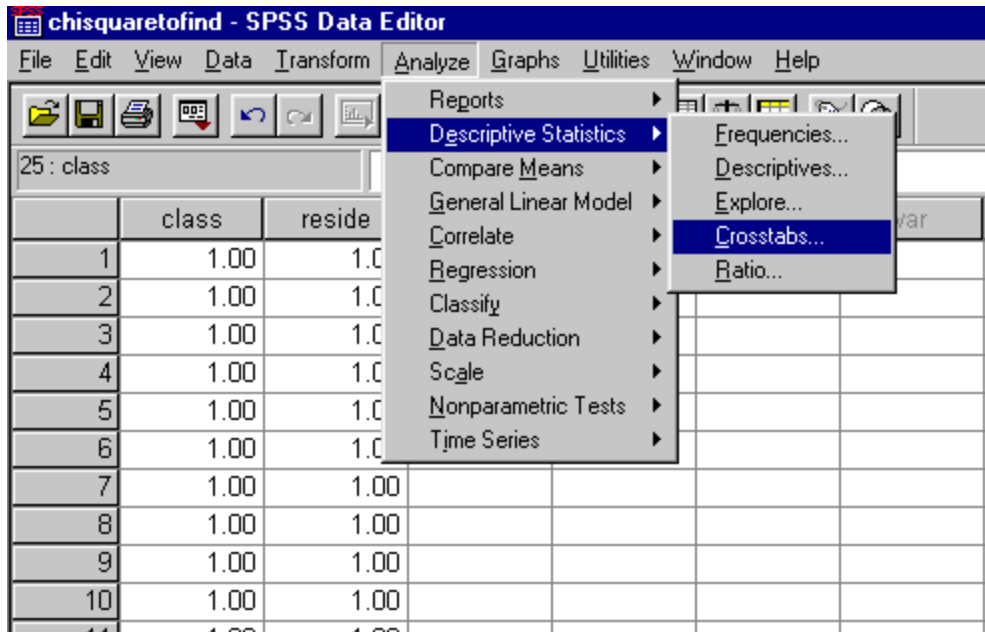


	class	reside	var	var
1	1.00	1.00		
2	1.00	1.00		
3	1.00	1.00		
4	1.00	1.00		
5	1.00	1.00		
6	1.00	1.00		
7	1.00	1.00		
8	1.00	1.00		
9	1.00	1.00		
10	1.00	1.00		
11	1.00	1.00		
12	1.00	1.00		
13	1.00	1.00		
14	1.00	1.00		
15	1.00	2.00		
16	1.00	2.00		
17	1.00	2.00		
18	1.00	2.00		
19	1.00	2.00		

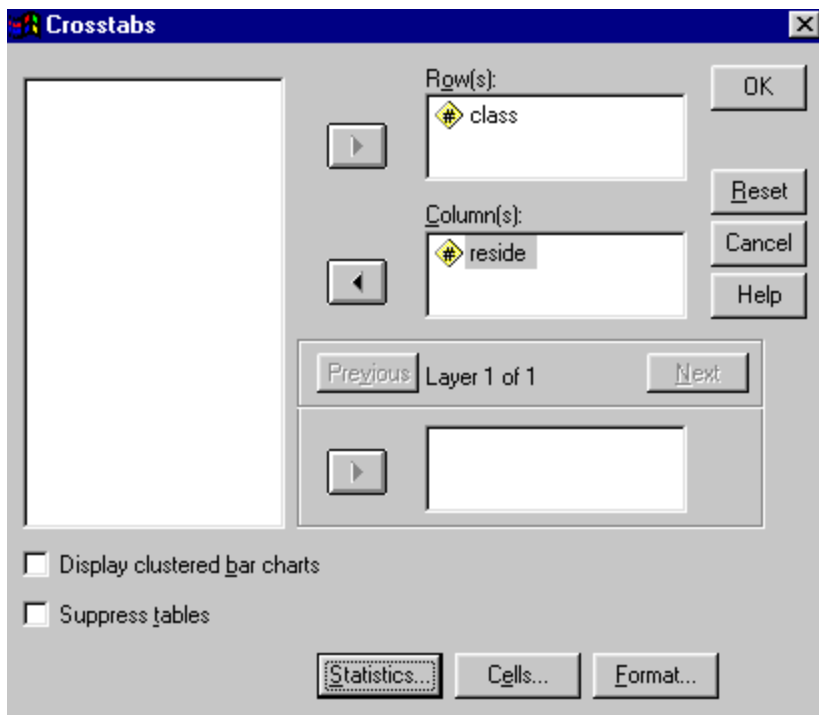
The illustration shows the data for the first cell and the beginning of the data entry for the second cell (freshman/on-campus). The data entry would continue by entering the corresponding number of combinations. For the above example, the data entry would require a total of 160 rows (the sum of all the cells corresponds to the total number of subjects and each subject is represented as a row in the SPSS Data Editor).

After the data has been entered, you should select Analyze --> Descriptives --> Crosstabs to conduct a Chi-square Test of Independence.

## Data Entry for Chi-square Test of Independence



In the Crosstabs dialog box, you should select one variable to represent the rows of the resulting table and a second variable to represent the columns of the table.



In order to obtain the Chi-square Test of Independence, you must select Statistics and then check the box in front of Chi Square.

## Data Entry for Chi-square Test of Independence

The screenshot shows the "Crosstabs: Statistics" dialog box. The "Chi-square" checkbox is checked. Under the "Nominal" section, the "Contingency coefficient", "Phi and Cramér's V", "Lambda", and "Uncertainty coefficient" are listed with unchecked checkboxes. Under the "Ordinal" section, the "Gamma", "Somers' d", "Kendall's tau-b", and "Kendall's tau-c" are listed with unchecked checkboxes. The "Nominal by Interval" section has an "Eta" checkbox that is unchecked. The "Cochran's and Mantel-Haenszel statistics" checkbox is unchecked, and the "Test common odds ratio equals:" field is set to "1". On the right side, there are "Continue", "Cancel", and "Help" buttons.

Additional information such as the Expected Frequencies and cell percentages can be obtained by selecting Cells in the Crosstabs dialog box and then checking the desired cell information.

The screenshot shows the "Crosstabs: Cell Display" dialog box. Under the "Counts" section, the "Observed" checkbox is checked, and the "Expected" checkbox is unchecked. Under the "Percentages" section, the "Row", "Column", and "Total" checkboxes are all unchecked. Under the "Residuals" section, the "Unstandardized", "Standardized", and "Adj. standardized" checkboxes are all unchecked. On the right side, there are "Continue", "Cancel", and "Help" buttons.