

Chapter 3

Point-and Click: Conducting Analyses in the Data Editor

3.1 Running the Frequencies Procedure in the Data Editor

In Chapter 2 we created a small data file consisting of the number of psychology courses taken by five male and five female statistics students. We will continue with this example in this chapter. Recall that in Chapter 2 we:

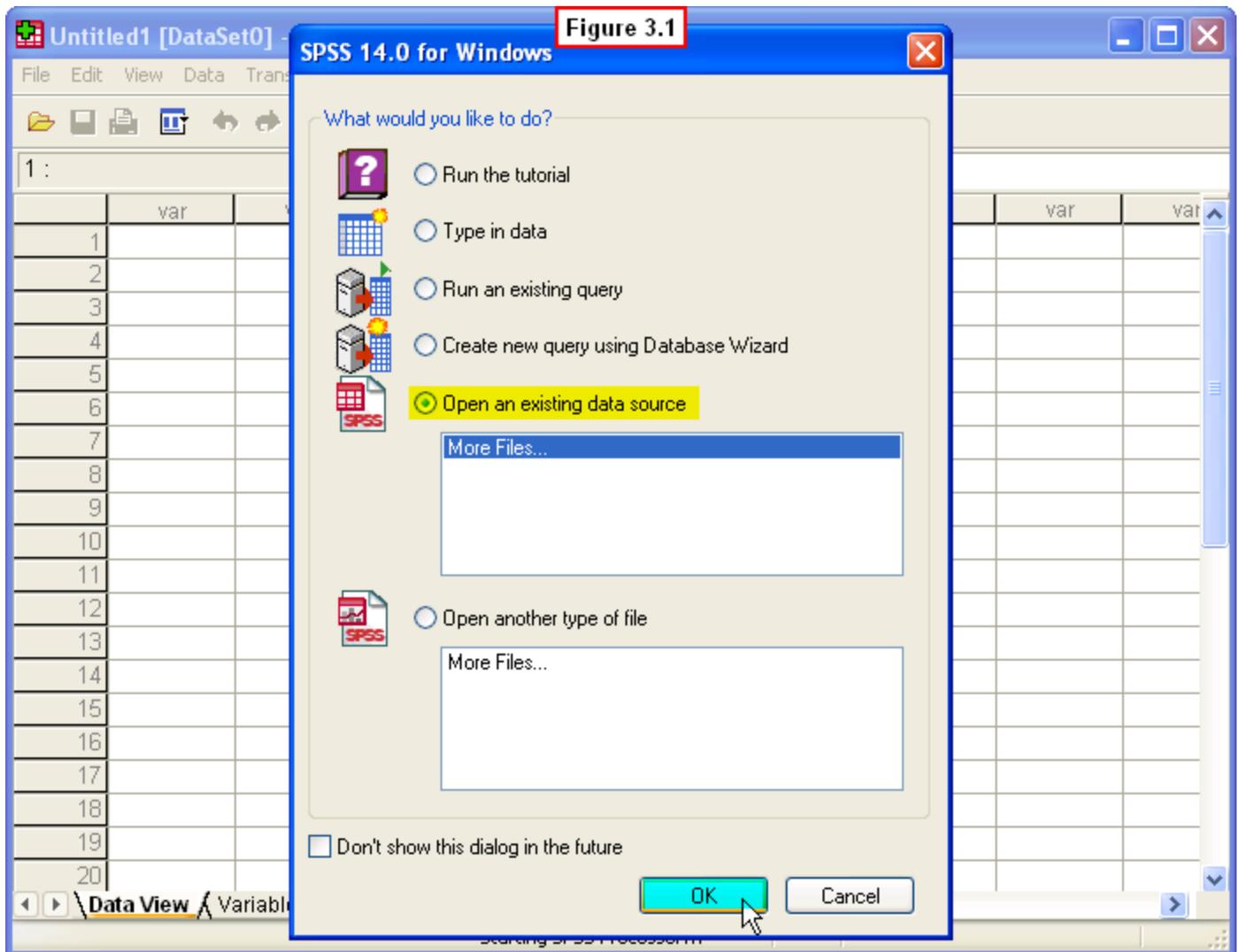
- created this data file in the **Data Editor** window (**example1.SAV**)
- created the same file in the **Syntax Editor** window (**example1.SPS**)
- generated frequency tables, displayed in the **Output Viewer** window (**example1.SPO**).

In Chapter 2, we generated the frequencies tables using the Syntax Editor. In this chapter we will conduct the same procedure in the Data Editor using the **point-and-click** method. We will use the **example1.SAV** file we created in Chapter 2 to do this. This method requires no knowledge of SPSS syntax code (recall that SPSS writes this code in the background as you point-and-click various selections in the Data Editor window).

3.1a Opening an existing data file

To follow along with the example in this chapter:

- open SPSS
- reply to the "What do you want to do?" question by selecting
- **Open an existing data source** (Figure 3.1)



Then navigate to the folder containing your **example1.sav** file and select that file to open.

Alternatively, if you clicked **Cancel** in response to the start up dialog box, you can still open an existing file from the drop-down menu in the Data Editor by doing the following:

- Select **File, Open, Data...** from the drop-down menu (Figure 3.2)
- Navigate to where you saved the **example1.sav** and select that file to open.

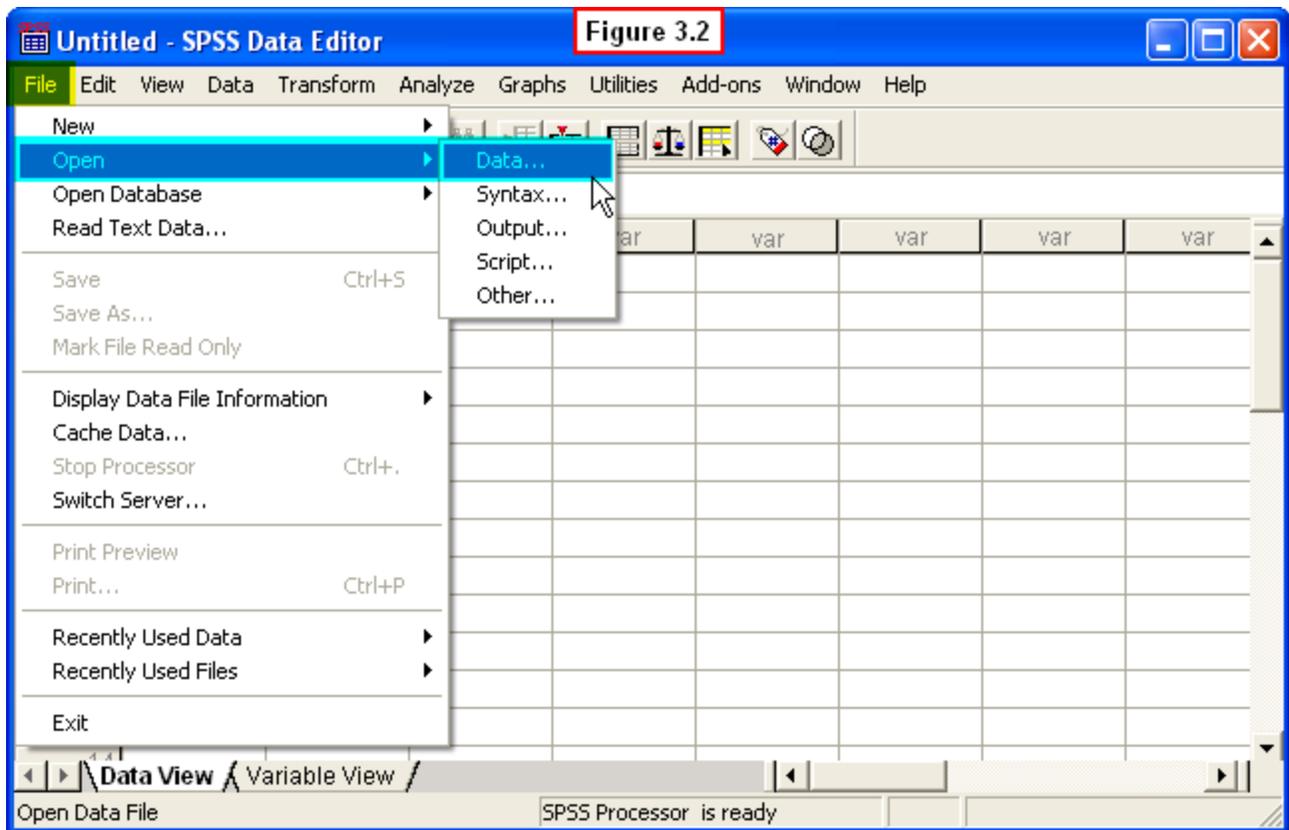


Figure 3.2

Your **example1.SAV** data file should now appear in the Data Editor (Figure 3.3).

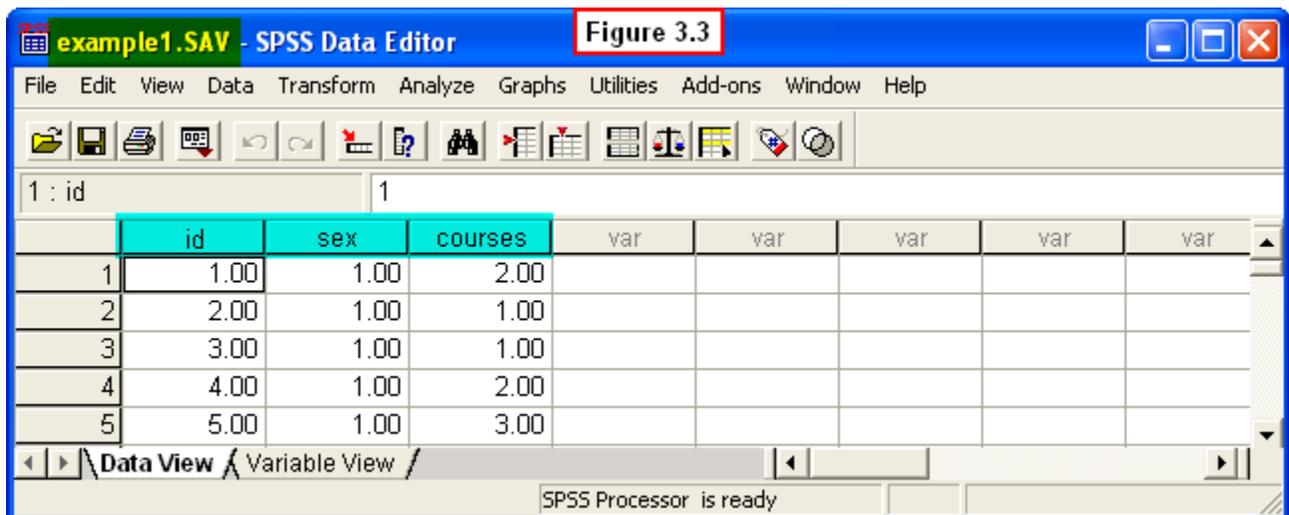


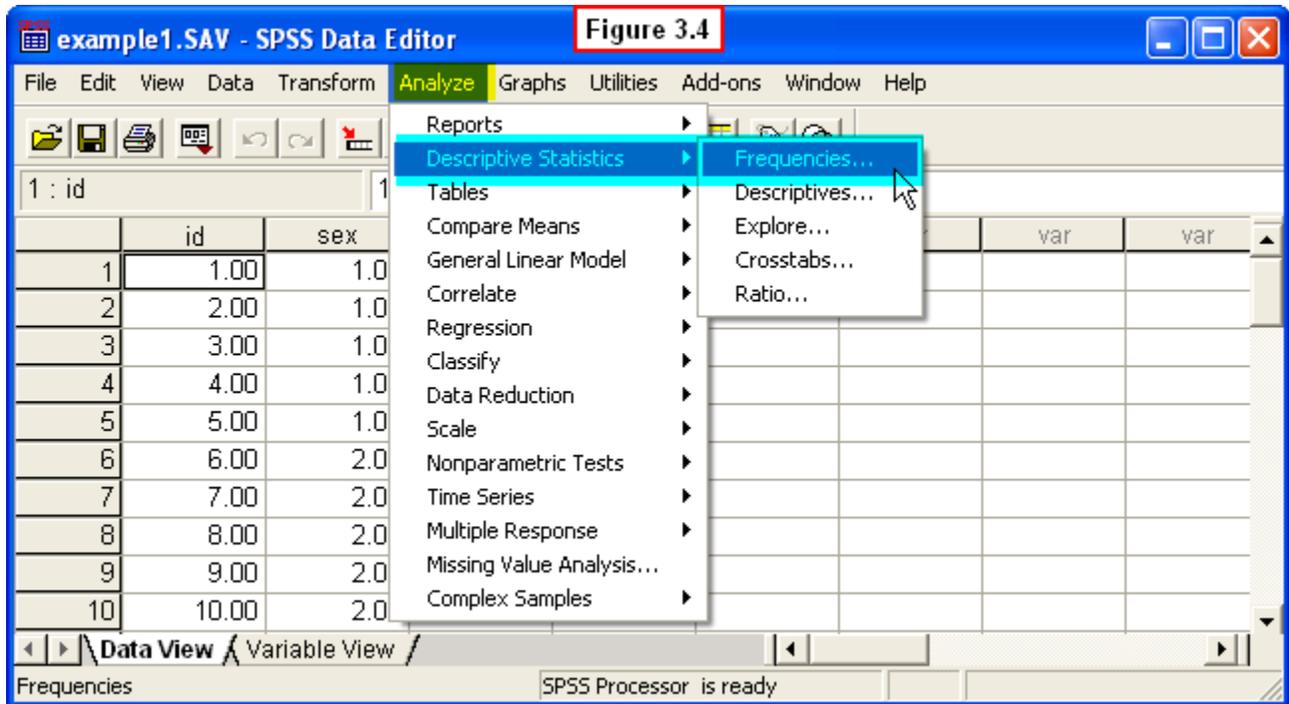
Figure 3.3

Recall that this file contains data for ten students in a statistics course, including an **ID** number, a code for **sex** (1: male; 2: female), and the number of previous psychology **courses** taken.

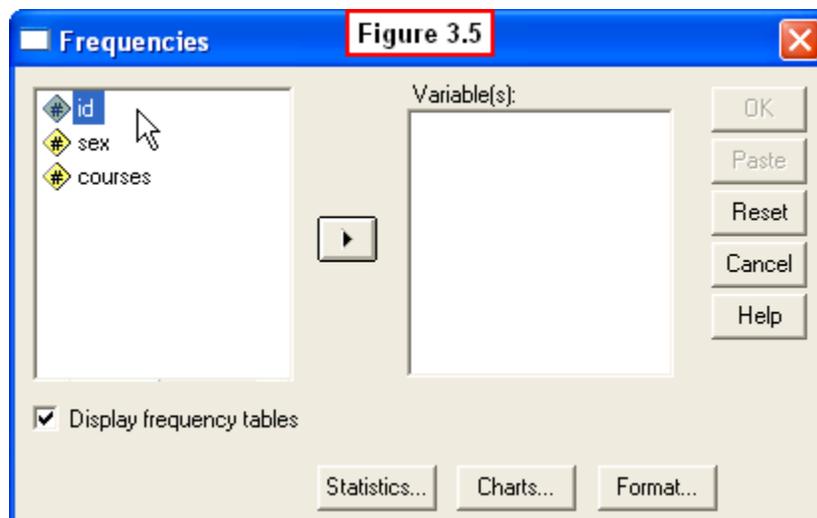
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3.1b Running the procedure: the Frequencies dialog box

To run the frequencies procedure select **Analyze**, **Descriptive Statistics**, **Frequencies...** from the drop-down menu (Figure 3.4).



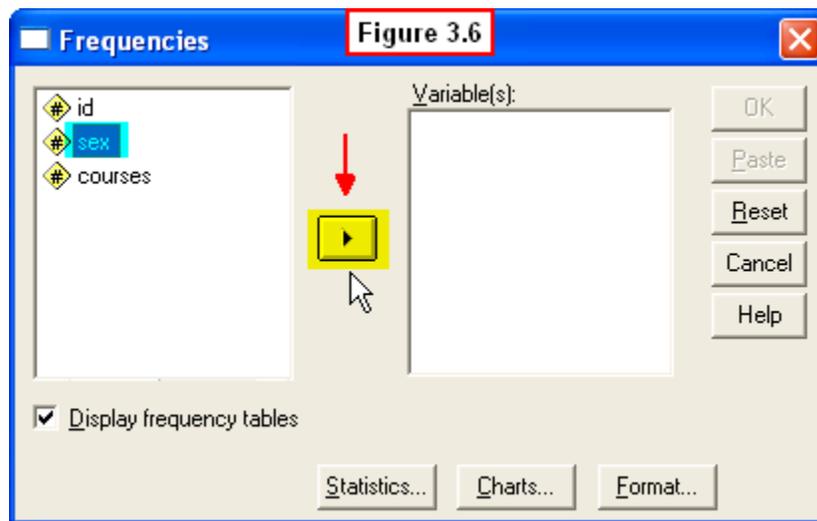
A **Frequencies dialog box** will appear listing our variables in the pane on the left (Figure 3.5).



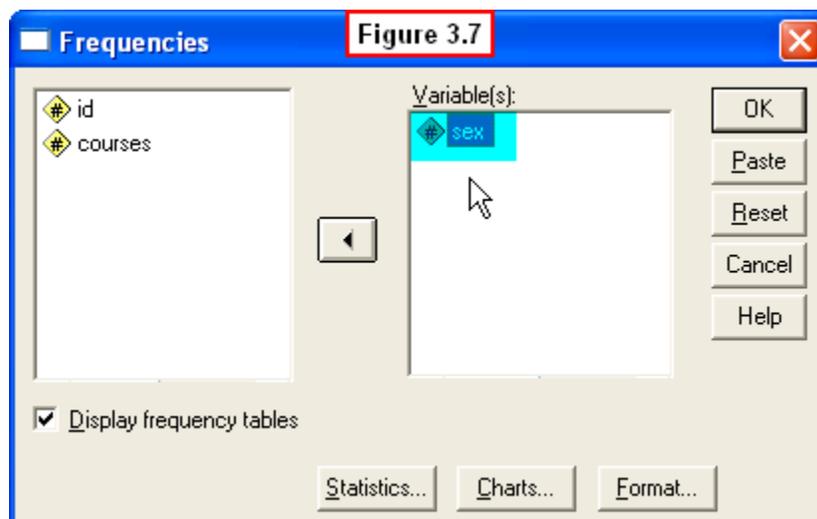
In this box, we select which variables we want to analyze. This will be done by highlighting the desired variables on the left, then moving them into the **Variable(s):** pane on the right.

The **id** variable is initially highlighted. However, we would generally not be interested in generating frequency tables for this variable, so move your cursor down and click on the **sex** variable in the left panel.

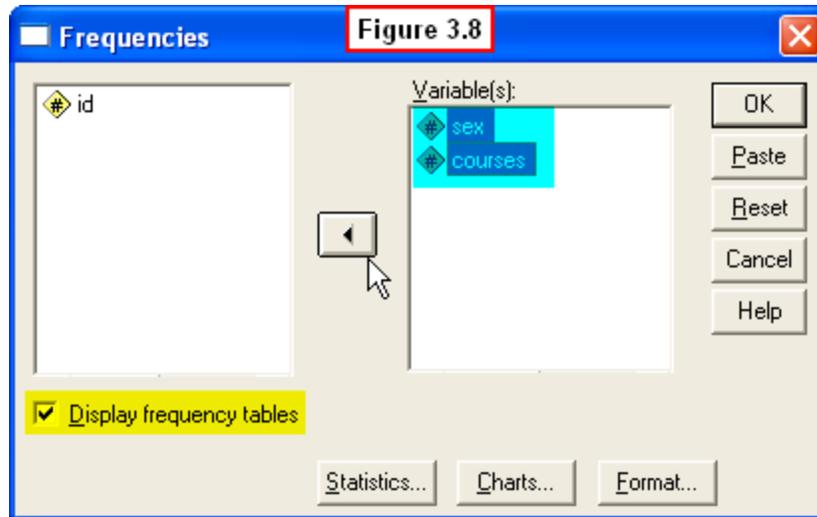
Now that we have selected this variable, we need to move it into the **Variable(s)** choice pane on the right. To move this variable, click the arrow key in the middle of the dialog box (Figure 3.6).



When you have done this, the variable will now appear in the right pane (Figure 3.7).



Now click on the **courses** variable in the left pane and move it into the **Variable(s)** selection pane. When you are done, your Frequencies dialogue window will look like the one in Figure 3.8.

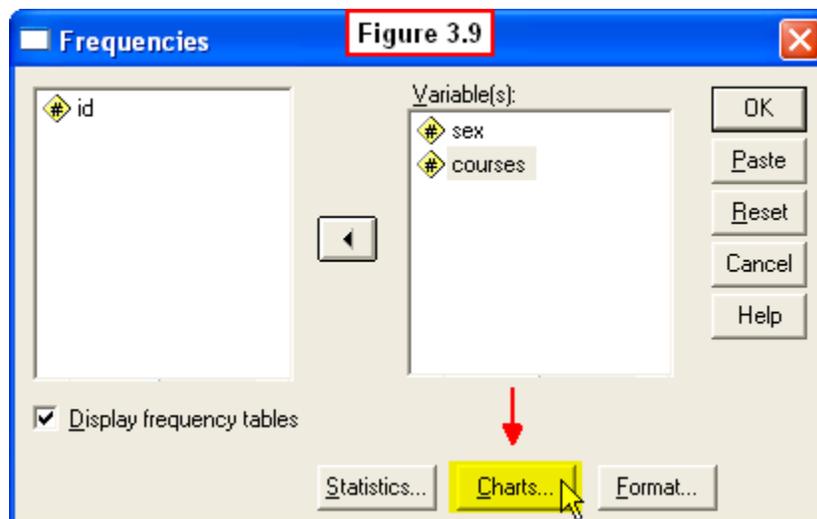


Note that by default, SPSS has checked the box labeled **Display frequency tables** in the lower left. This will result in the generation of frequency tables of our selected variables when we are ready to run this procedure.

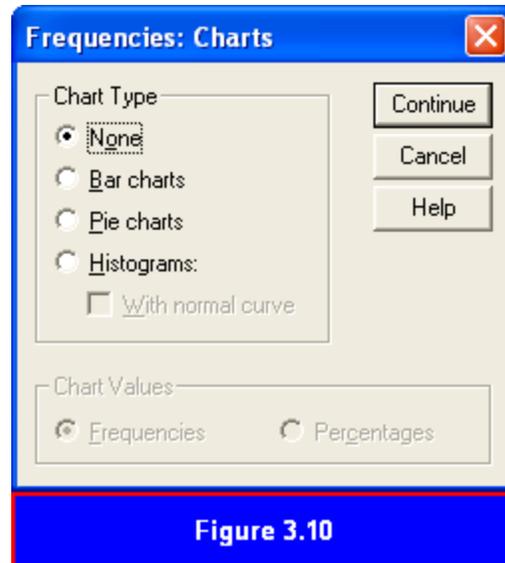
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3.1c The Frequencies: Charts dialog box

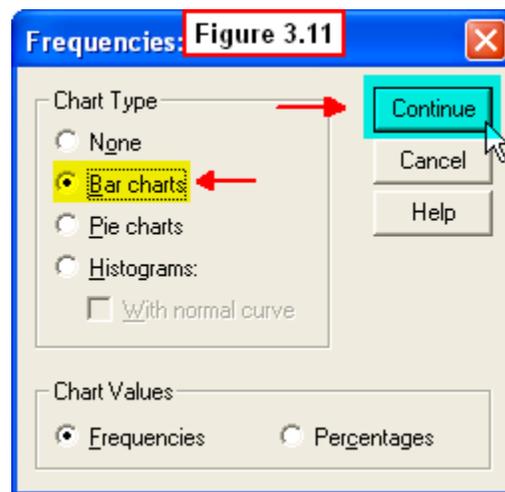
So far all we have done is specify which variables for which frequency tables will be generated. However, the interpretation of frequency tables is often facilitated by generating charts of the frequencies, so we will turn to that process before running the procedure. To request charts, click the **Charts** button at the bottom of the **Frequencies** dialog box (Figure 3.9).



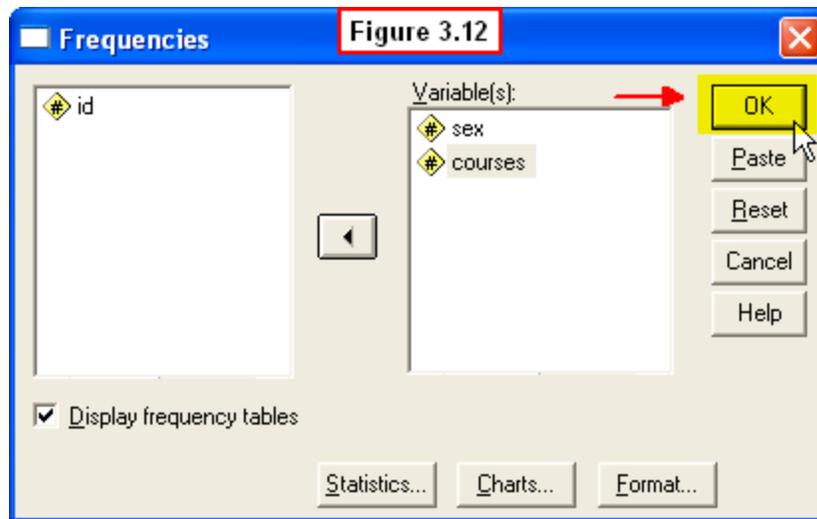
This causes a new **Frequencies: Charts** dialog box to appear (Figure 3.10).



This box allows us to select which type of chart to create. For this example, click the **Bar charts** radio button. We could also choose percentages instead of frequencies as the **Chart values** to be displayed, but we will leave the frequencies check box selected. Now click the **Continue** button in the upper right corner of this dialogue window (Figure 3.11).



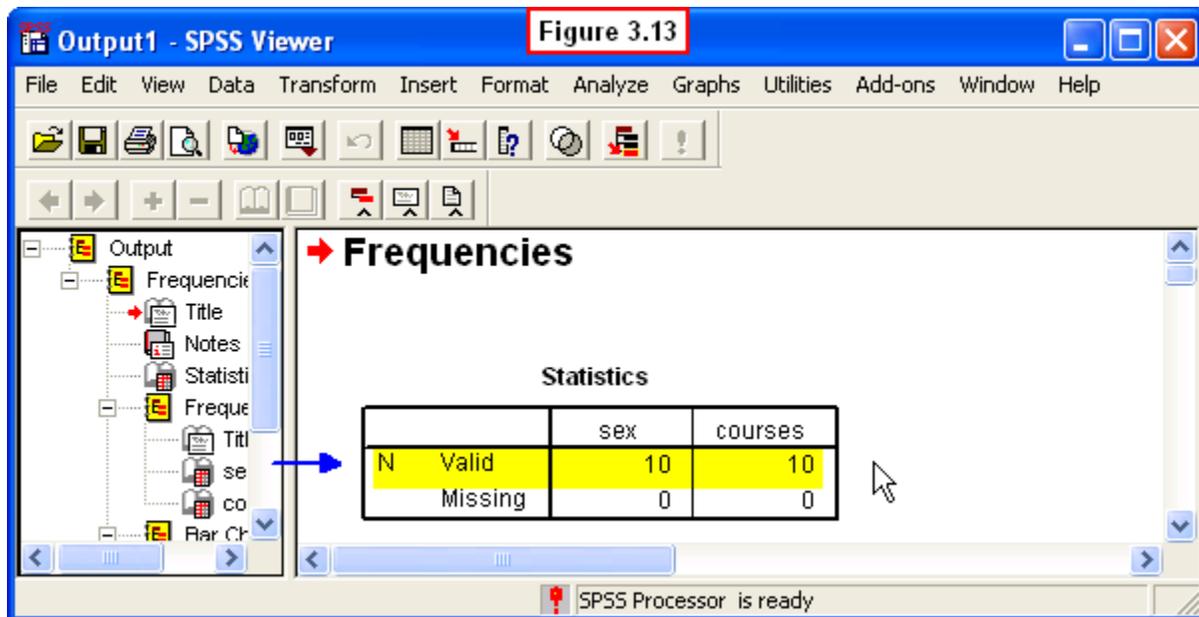
The **Frequencies: Charts** box will close, returning you to the **Frequencies** dialogue box. Now we are ready to run this procedure. To do this, click the **OK** button in the upper right corner of this box (Figure 3.12).



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3.2 Interpreting the Frequencies Procedure Output

The results of this procedure will now appear in an SPSS Output Viewer window (Figure 3.13).



The first information in the output is the **Statistics** table. This table displays how many valid cases (**N**) were processed and how many cases had missing values for each of our variables. Since we have no missing values, the number of valid cases is the full 10 students for both variables.

Note: Rather than showing the entire viewer window as we discuss various parts of output files, hereafter we will display different parts of the output as separate figures. The next table is the simple frequency distribution for the variable, **sex** (Figure 3.14). To find this table, just scroll down your output viewer window to find this table, or click that item in the tree menu in the left pane.

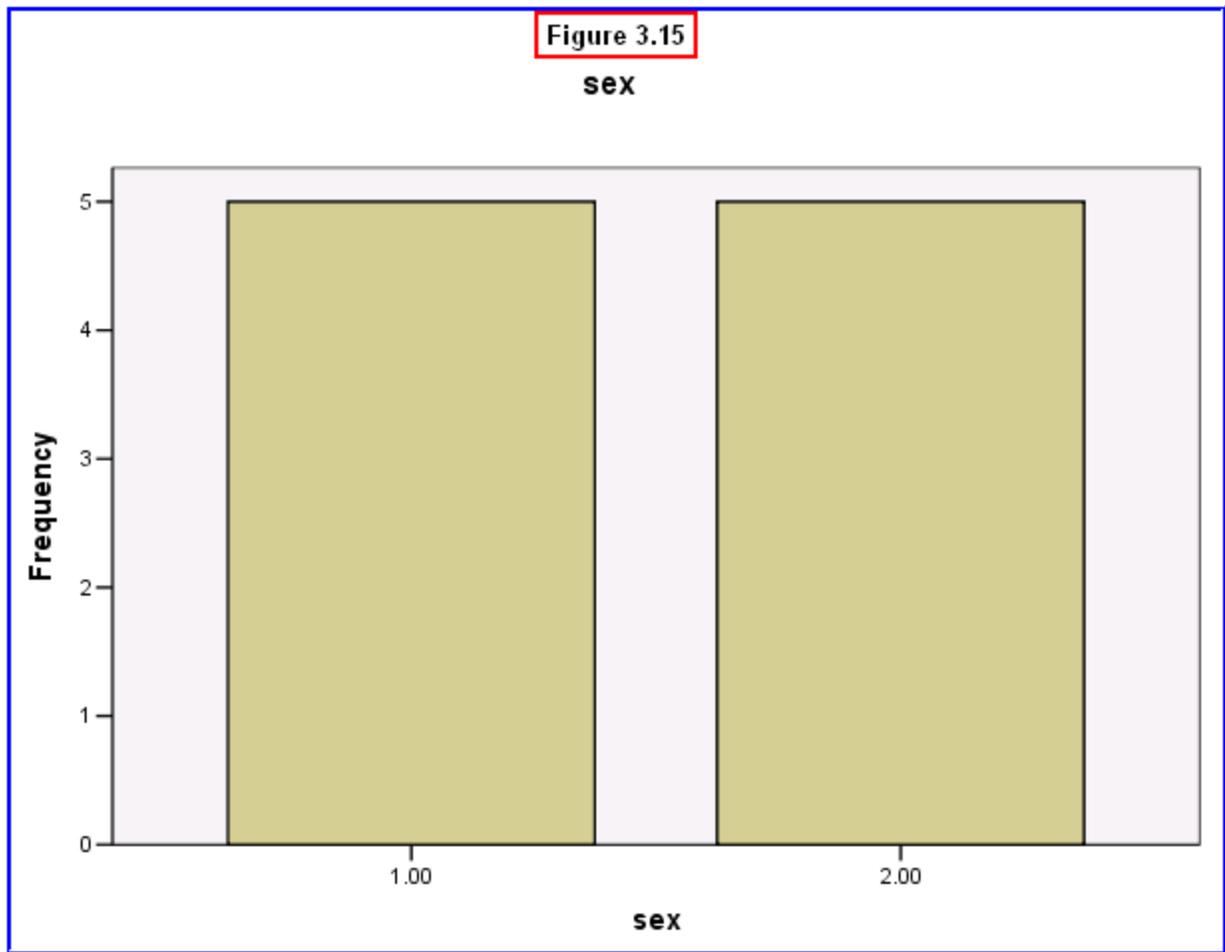
Figure 3.14
sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	50.0	50.0	50.0
	2.00	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

1=male; 2=female

The first column lists the labels we assigned to the two levels of this variable (1: male; 2: female). The **Frequency** column displays the frequency of each score (in this case, category). This shows that of the ten students, five were women and five were men. These frequencies are converted to percentages in the **Percent** column (50% men, 50% women). Note the **Valid Percent** column shows the same values. These would be different if we had missing data; i.e., this column adjusts the percentages based on missing values.

Scroll down your output and you will see the bar chart we generated for this variable (Figure 3.15).



This lists the numerical values of the variable (1: male; 2: female) on the horizontal axis and the frequencies (how many instances of each sex) on the vertical axis. This visual depiction of the results clearly shows an equal number of men and women, with the two bars of the chart being the same height.

Scroll back up to see the next table presenting the distribution of scores on the **courses** variable (Figure 3.16).

Figure 3.16

courses

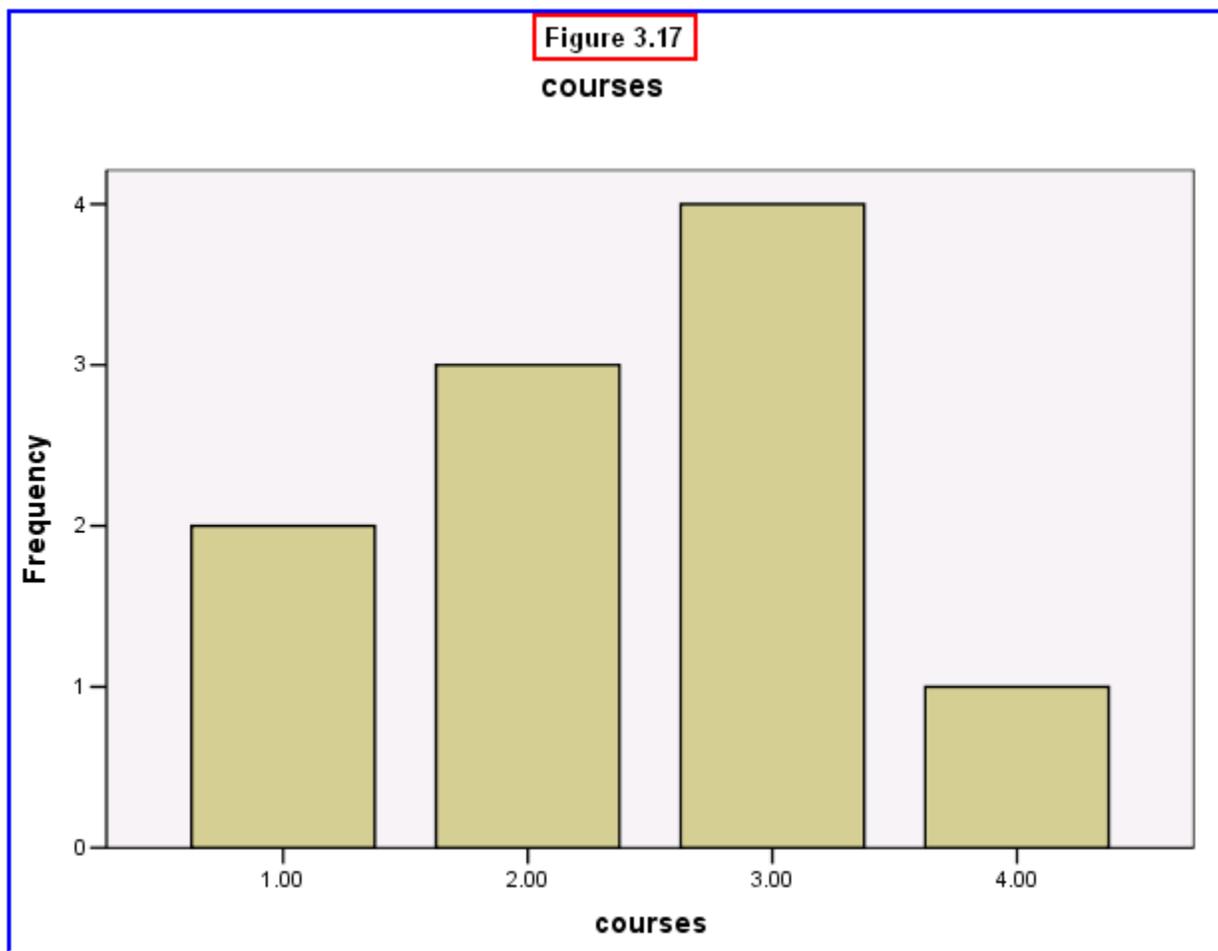
# courses	# students	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	2	2	20.0	20.0	20.0
2.00	3	3	30.0	30.0	50.0
3.00	4	4	40.0	40.0	90.0
4.00	1	1	10.0	10.0	100.0
Total	10	10	100.0	100.0	

In this table, the scores in the first column are the number of psychology courses taken by the students. Thus, students had taken between 1 and 4 courses prior to statistics.

The **Frequency** column shows how many students had 1, 2, 3 or 4 courses. Thus, two students had taken 1 course, three had taken 2 courses, four had taken 3 courses, and one had taken 4 courses.

Again, these frequencies are converted to percentages in the **Percent** column. From this inspection, we can conclude the most students had taken either 2 psychology courses (30%) or 3 (40%) courses.

Scroll down and you will see the bar chart of this frequency distribution (Figure 3.17).



The bar chart again provides a visual depiction of this distribution. A glance at this graph clearly shows that the most frequent number of courses taken by students prior to taking statistics was 3, followed by 2 courses.

3.3 A Look Back and a Look Ahead

Chapters 2 and 3 were meant to get you a quick start with SPSS, to illustrate the basics of SPSS, creating a data file, and doing a simple analysis of the data in that file. The **Frequencies** procedure illustrated is commonly used, especially with survey research. It is an effective number cruncher for summarizing data (and is especially important with large data files). For example, the frequency distribution of the number of previous psychology courses taken by students can be useful to the instructor in understanding the variability in the psychology background of his/her students.

There are other analyses that can be generated using the **Frequencies** procedure (e.g., we could generate descriptive statistics, such as the mean or mode). We could also generate separate frequency tables (e.g., to compare the number of course taken by male vs. female students). We will return to the **Frequencies** procedure in a later chapter.

Now that you have a basic familiarity with SPSS, in the next chapter we will introduce the **EZDATA** file that we will be using for the remainder of the text. This file is much larger and more complex than the simple file we have been using so far.

Thus, we will devote an entire chapter to explaining the variables in this file and how to import it into SPSS. This is an important chapter to read and study, since it will be used in the remaining chapters. Spending some time now to understand the logic of the **EZDATA** research project and the variables included in the data file will save you time later in the interpretation of the data analyses that will be performed on this file.

3.4 Chapter Review Video

[Review Me!](#)

3.5 Try It! Exercises

1. Running the Frequencies Procedure in the Data Editor

Open the **example1.sav** file in the Data Editor. Use the **Frequencies** procedure described in Section 3.1 to generate the output file shown in Section 3.2.

- **Print** this file to submit to your instructor by selecting **File, Print** from the Output Viewer menu.

