


USING SPSS FOR BASIC ANALYSES

This handout is intended as a quick overview of SPSS for computing basic statistics and graphing frequency distributions. For a brief while, SPSS was called PASW, so you may see reference to PASW...just translate that to mean SPSS.

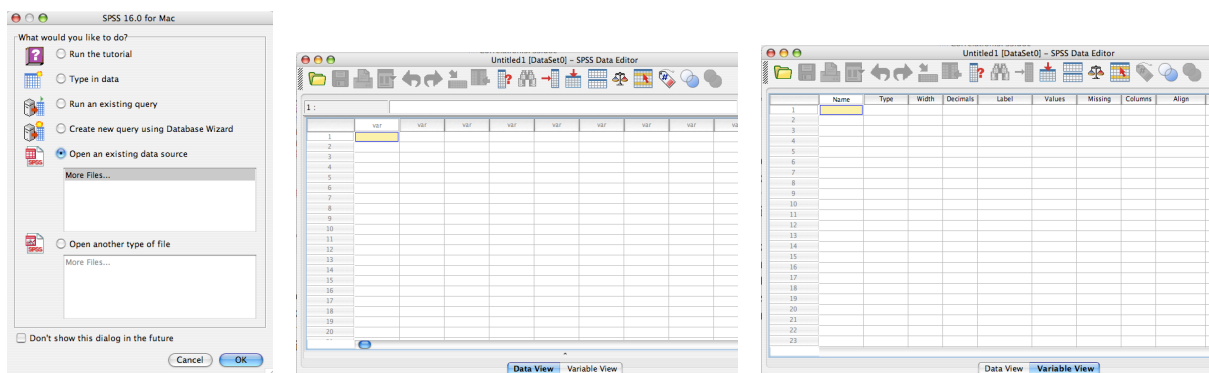
1. First, if the Mac is in Sleep mode, press some key on the keyboard to wake it up. If the Mac is actually turned off, turn it on by pressing the button on the back of the iMac. You'll then see the login window.



Log into the computer as *psychlab*. That is, click on *psychlab* and then enter the password, which is StandardDeviation (all one "word" with S and D capitalized).

Double-click on the SPSS icon (alias), which appears at the bottom of the screen (on the Dock) and looks something like this: . You may also open SPSS by clicking on an existing SPSS data file.

2. You'll first see an opening screen with the program's name in a window. Then you'll see an input window (below middle) behind a smaller window with a number of choices (below left). If you're dealing with an existing data source, you can locate it through the default choice. The other typical option is to enter data for a new file (Type in data).



3. Assuming that you're going to enter a new data set, you will now see a data window such as the one seen above middle. This is the typical spreadsheet format and is initially in Data View. Note that each row contains the data from one subject. You should know the nature of your data set (i.e., number and nature of your variables), which is easier to set up in Variable View, so click on that button at the bottom to change the view into a window like that above right.

Note that the columns in Data View are now rows. You're limited to eight characters for each variable name, so try to make them as descriptive as possible. As you may notice, you can also attach a label to each variable. Doing so is particularly helpful for larger data sets that you may generate in "real" research. For now, I'll simply enter some possible variables that you might encounter in a study, just to show you how you might set up a data file.

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	gender	String	8	0		None	None	8	Left	Nominal
2	age	Numeric	4	2		None	None	8	Right	Scale
3	iq	Numeric	4	2	WAIS score	None	None	8	Right	Scale
4	rt	Numeric	5	2	reaction time i...	None	None	8	Right	Scale
5	group	Numeric	1	0	experimental c...	{1, control}...	None	8	Right	Scale
6	score	Numeric	6	2	score on the d...	None	None	8	Right	Scale

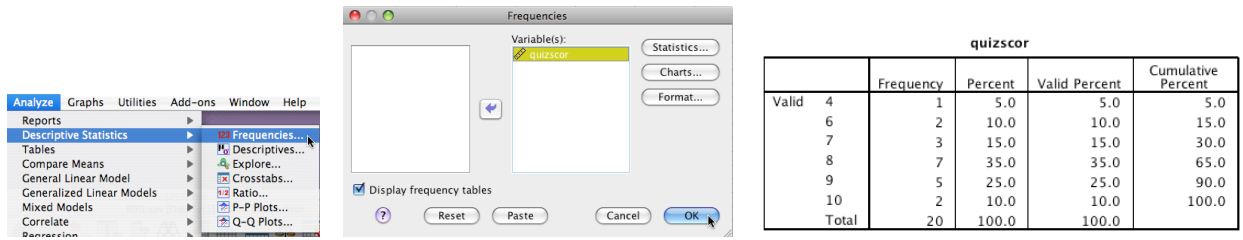
Note that I set up *gender* as a string variable (nominal variable), so the data can be alphanumeric (letters and numbers). In this case, I've used *m* and *f* for male and female. For integer data, you could set the number of decimals to 0, but you'd actually be better off if you didn't do so. For real numbers, you can set the number of decimal places to whatever makes sense, or leave the default setting of 2 decimal places. Note, also, that I've labeled some of the variables and for one variable (*group*), I've set up value labels (1 = control, 2 = drug x, 3 = drug y). Labeling the values will make your output more comprehensible. Of course, you can return to the Variable View window to modify your variables, add new variables, etc. For now, though, let's return to the Data View and enter the actual data, as seen below left.

	gender	age	iq	rt	group	score
1	m	19.00	118.00	418.70	1	32.00
2	m	20.00	108.00	457.30	1	35.20
3	f	19.00	121.00	398.20	1	31.00
4	f	21.00	127.00	390.60	1	33.60
5	m	18.00	109.00	482.40	2	41.00
6	m	19.00	114.00	413.80	2	42.80
7	f	21.00	112.00	423.40	2	38.70
8	f	19.00	132.00	375.90	2	36.90
9	m	18.00	117.00	424.80	3	44.30
10	m	19.00	129.00	381.30	3	48.60
11	f	20.00	115.00	436.70	3	40.10
12	f	19.00	107.00	491.20	3	39.70

	quizscor
1	8.00
2	9.00
3	8.00
4	7.00
5	10.00
6	9.00
7	6.00
8	4.00
9	9.00
10	8.00
11	7.00
12	8.00
13	10.00
14	9.00
15	8.00
16	6.00
17	9.00
18	7.00
19	8.00
20	8.00
21	8.00

Above right is a far simpler data set. In fact, these data illustrate a portion of the data from G&W (8th Ed.), Example 2.1, p. 37. Even though the data are integers, it's best to input the data as real numbers with one decimal place (containing zero), because the number of decimal places actually determines some output.

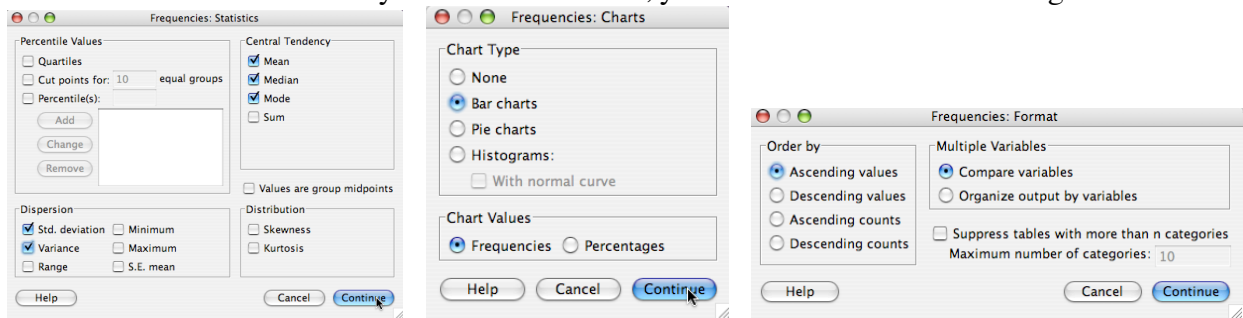
4. To compute basic statistical information, simply click and drag down *Analyze* menu to reveal *Descriptive Statistics* as seen below left. For the Statistics Quiz data set, I might choose *Frequencies*, which would first produce a window (below middle) in which you choose the variable you want to analyze. (In this case there is only the one variable—*quizscor*.) As you can see (below right), the output from *Frequencies* is helpful to see a frequency distribution of your data (similar to that seen at the top of p. 38).



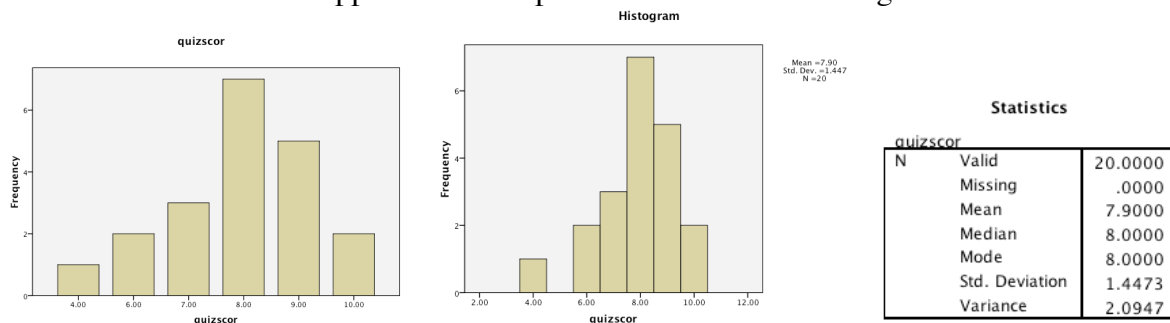
quizscore				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	5.0	5.0	5.0
6	2	10.0	10.0	15.0
7	3	15.0	15.0	30.0
8	7	35.0	35.0	65.0
9	5	25.0	25.0	90.0
10	2	10.0	10.0	100.0
Total	20	100.0	100.0	

As you'll note in the middle window above, you also have three options for output (*Statistics...*, *Charts...*, and *Format...*).

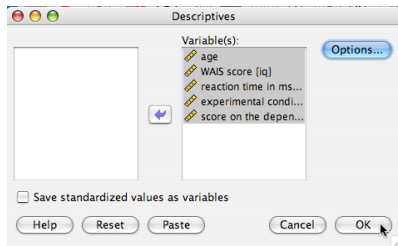
If you chose *Statistics...*, you'd see the choices below left. (Note that I've chosen to output some measures of variability, or dispersion, and central tendency.) If you chose *Charts...*, you'd see the choices below middle. If you chose *Format...*, you'd see the choices below right.



Visual displays are quite helpful, so even though SPSS doesn't produce "pretty" graphs, you can see the difference between a bar chart (below left) and a histogram (below middle). The statistical choices would appear in the output as seen below on the right.



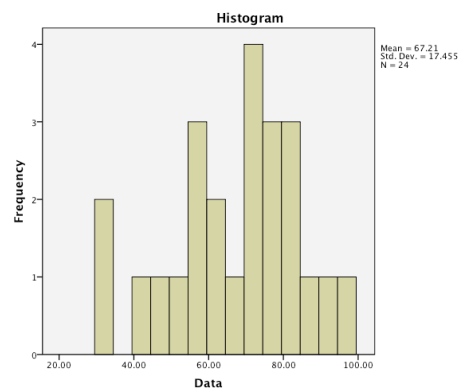
Now, let's consider the original (more complex) data file. Another approach is to choose *Descriptive Statistics->Descriptives...* As you can see below, I've moved all the variables to the right, so that they might be included in the analysis. SPSS knows that it can't compute these descriptive statistics on the nominal variable (*gender*), but it gives results for the other variables.



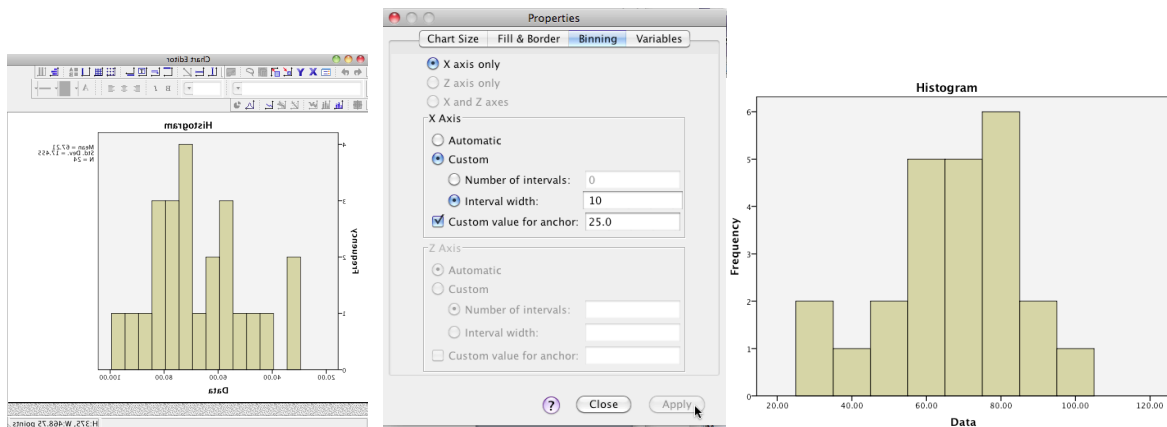
	N	Minimum	Maximum	Mean	Std. Deviation
age	12	18.00	21.00	19.3333	.98473
WAIS score	12	107.00	132.00	117.4167	8.34983
reaction time in ms	12	375.90	491.20	424.5250	37.22719
experimental condition	12	1	3	2.00	.853
score on the depende...	12	31.00	48.60	38.6583	5.22311
Valid N (listwise)	12				

Alternatively, let's consider the data set from Table 2.3 (p. 59). These data are quite spread out, as illustrated below right in the frequency table. You'll note that SPSS chooses to group the data for you. However, you might prefer a different grouping of the data.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 32	1	4.2	4.2	4.2
33	1	4.2	4.2	8.3
42	1	4.2	4.2	12.5
46	1	4.2	4.2	16.7
52	1	4.2	4.2	20.8
56	1	4.2	4.2	25.0
57	1	4.2	4.2	29.2
59	1	4.2	4.2	33.3
62	1	4.2	4.2	37.5
63	1	4.2	4.2	41.7
68	1	4.2	4.2	45.8
71	1	4.2	4.2	50.0
73	1	4.2	4.2	54.2
74	2	8.3	8.3	62.5
76	2	8.3	8.3	70.8
78	1	4.2	4.2	75.0
81	1	4.2	4.2	79.2
82	1	4.2	4.2	83.3
83	1	4.2	4.2	87.5
85	1	4.2	4.2	91.7
93	1	4.2	4.2	95.8
97	1	4.2	4.2	100.0
Total	24	100.0	100.0	



To do so, double-click on the Histogram output, which brings up the Chart Editor (below left). At the top, toward the right end, is an icon to control the bin width (window seen below middle). As you can see, I've chosen a starting point of 25 and bins of width 10. And your resulting histogram would appear as seen below right.



5. To print out your output, choose **Print** from the **File** menu. When you are through with SPSS, choose **Quit** from the **SPSS** menu (or close the data file).