SPSS has a tool that makes frequency tables, bar graphs, and pie charts. There are some complications when using this tool with ordinal data. The following instructions address these complications, and therefore assume your data are ordinal. If they are nominal or scale, then please see the documents Frequency tables for nominal data click here and Frequency tables for “scale” data click here, as appropriate.

Preparation

1. Open your data file or type in your data. Take particular care of the level of Measurement. In this document, data are assumed to be ordinal, so please make sure the Measurement column says Ordinal. Your data may be accompanied by frequencies, relative frequencies, or percents. If so, please make sure their level of Measurement is Scale.

Weighting the cases

2. Are your data actual, individual measurements (that is, “raw” data)? If so, skip to Step 3. If instead you have data values and their frequencies, you must weight the cases. This tells SPSS which frequency goes with which data value.\(^1\) This way, SPSS knows how many of each measurement you have, and can correctly calculate statistics and create graphical displays. To weight the cases,…

   • Look on the button bar for a picture of an old-fashioned “pan balance” type of scale (for weighing things), and click it. A dialog appears.

   • In the dialog, click the radio button for Weight cases by….

   • Identify the variable that contains the weights (frequencies, relative frequencies, or percents), select it, and click the arrow button to move that variable to the Weight cases by… box.

   • Click OK. Nothing will change on your screen. If you want to check your work, you can click the “weight the cases” button again and see whether you’ve done it right.\(^2\) You are now done weighting the cases.

Coding the categories (to put them in order)

3. What to do next depends on the nature of your data. Some ordinal data are numeric; some are not. If they are numeric, you can skip to Step 6. If your data are not numeric, then you need to “recode” them in a new variable. You see, you may know which order your variable’s categories go in. But SPSS does not. (For example, in the Army, a private is of lower rank than a major, and a major is

\(^1\)Relative frequencies and percents are OK, too.

\(^2\)One reason for having the right level of Measurement for each variable is that SPSS will not allow you to accidentally use a non-Scale variable to weight the cases with.
of lower rank than a general. If you use these three categories, SPSS will put them in alphabetical order, which will put the general between the private and the major.) So you recode, as follows...

- In the Transform menu, click Recode into Different Variables... The Recode into Different Variables dialog appears.
- Select the variable you want and click the arrow button, to move your variable to the Input Variable -> Output Variable: box.
- Click in the Output Variable box and type the name of a new variable. (This is where your coded data will go. The name of this variable needs to be different than that of your original variable, but should still indicate what the data are.)
- Click the Change button. The name of your new variable appears in the Input Variable -> Output Variable: box.
- Click the Old and New Values button. The Recode into Different Variables: Old and New Values box appears. (This is where you will tell SPSS how to put your categories in order.)
- In the Old Value area, in the left half of the dialog, find the Value box. In the Value box, type the name of the lowest category your variable can have. (For example, “private”.)
- In the New Value area, in the right half of the dialog, find the Value box. In the Value box, type the number 1. The Add button will light up.
- Click the Add button. An entry will appear in the Old->New: box. (In our example, it will say, “private’ --> 1”)
- Go back to the Value box of the Old Value area of the dialog and type in the name of your second lowest category.
- In the New Value area, in the right half of the dialog, find the Value box. In the Value box, type the number 2. The Add button will light up.
- Click the Add button. An entry will appear in the Old->New: box. (In our example, it will say, “major’ --> 2”)
- Continue in this way until you have set up codes for all your categories.
- Click Continue. SPSS returns you to the Recode into Different Variables: Old and New Values dialog.
- Click OK. Depending on the version of SPSS you have, you may or may not be taken to the Output viewer. If so, there will be a short report about the way SPSS coded your data. If not, it’s OK.

4. Go to the Variable View in the Data Editor window. Make sure your new variable is of Numeric type, adjust the decimal places, if desired, and change the Measure entry to Ordinal.

Category labels

5. You need to tell SPSS to show the category names when it puts anything in the Output viewer. To do this...

- In the row for your new variable, click the cell under Values. A button that says “…” will appear.
- Click on the “…” button. The Value Labels dialog appears.
- Type a 1 in the Value box, and type the name of category #1 in the Label box. The Add button lights up.

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3 Yes, I know it’s not this simple. But let’s keep it simple here, OK?
4 Note: This box may be called something else, like String Variable -> Output Variable, depending on the nature of your data.
• Click the Add button.
• Type a 2 in the Value box, and type the name of category #2 in the Label box. The Add... button lights up.
• Click the Add button.
• Continue in this way until you have created labels for all your coded

Getting the frequency table and graphics

6. In the Analyze menu, click on Descriptive Statistics. A submenu will appear.

7. In the submenu, click Frequencies... The Frequencies dialog will appear.

8. In the Frequencies dialog, SELECT THE NAME OF THE VARIABLE CONTAINING THE NUMERIC CODES for your categories, and click the arrow that points to the Variables box. The name of your variable will move from the one box to the other. (This tells SPSS which variable you want to use.) If you want to analyze more than one variable, move the names of all the variables of interest to the Variables box.

9. If you want a bar graph or a pie chart, then...
   • ...click the Charts button. The Frequencies: Charts dialog will appear.
   • Click the radio button for either Bar charts or Pie charts, as desired. (If you are analyzing more than one variable, you will get the same type of graph for all the variables you use in this analysis.) DO NOT SELECT Histogram. Histograms are for scale data only!
   • If you want your graph to be labeled with Frequencies or Percentages, click the appropriate radio button. (The default is Frequencies.)
   • Click Continue. SPSS returns you to the Frequencies dialog.

10. If you want a frequency table, make sure the Display frequency tables checkbox has a check mark in it. (Clicking on the box will toggle back and forth between having and not having a check mark in the box.)

11. Click OK. The Frequencies dialog closes, and the Output or Viewer window opens.

12. Reading the output:
   • The first thing in the output is a collection of commands like GET and FREQUENCIES VARIABLES. This is just SPSS’s report of what it thinks you asked it to do. You can skip this, if you like.
   • Next is the output from the Frequencies dialog, headed up by a small table called Statistics. This table tells you how many of your measurements were valid and how many were not. ALWAYS CHECK THIS to make sure all your data got used. (There is a column in this table for each variable in your analysis.) If not, there’s something wrong with your data. Go to the Data View, fix the problem(s), and come back to the Frequencies dialog.
   • Next is a table showing the frequencies, percentages, and cumulative percentages of the various categories that appear in your data. The categories should be in the correct order, so the cumulative percents should make sense.\(^5\) (There will be a separate table for each variable in your analysis.)
   • The table also contains a column for Valid Percent You will not need this, if all your data were valid. If some were not, then comparing the entries of this column with those of the Percent column can help identify invalid measurements.

\(^5\)If not, check your codes and your labels.
Finally, if you asked for a bar graph or pie chart, it will appear after the frequency table. If it's a bar graph, the bars should be in the correct order. If it's a pie chart, the categories will appear in the correct order in the legend of the chart. (There will be a separate graph for each variable in your analysis.)

As always, if you have questions, please ask them!