Visual Displays of Data
Program Transcript

MATT JONES: It's often said that a picture is worth a thousand words. Visual displays of data can be invaluable. And SPSS provides you with a number of options. To obtain our visual displays of data, we first click on Graphs.

You will see several options here. But what you will most commonly be using is the Chart Builder. Once I click on this, I get a little warning box that comes up. SPSS is warning me that my measurement levels should be properly set for each of the variables.

It is doing this, because SPSS make some assumptions about the proper use of charts for given levels of measurement for each variable. So it's important to go to your Variable View and make sure that your measured columns are properly set. You'll see SPSS provides you with a number of options, bar, line, area, pie, scatter, histogram, high-low, box, plot, and dual axis. We're just going to go over a couple of the most common.

Let's start out with a bar chart. I can hover over Simple Bar, click it, and drag it into the Chart Gallery. A bar chart would be suitable for a categorical variable. I would like a bar chart of the respondent's highest degree level. So I can scroll down my variables column until I see that variable.

Here, I can hover over it and see respondent's highest degree. Notice once I click on it, right below in the left-hand side, SPSS provides me with information on how this is measured or the attributes of that variable. Once again, I can click on the variable. And I will drag it over in the x-axis.

There, you will see the chart gallery self-populate. I can go ahead and click OK for a simple bar chart. Scrolling down, you can see on the x-axis, I have respondent's highest degree and on the y-axis, the frequency of that count. I can see for those whose highest degree is a high school diploma, there are approximately 750 cases or respondents in this data set.

Next, we will do a line chart. Again, going to the Chart Builder, clicking OK past my warning, and resetting from my previous request. I can click Line and also, again, over here. And then drag this over to the Gallery Chart area.

A line chart might be appropriate for a metric level variable. I will choose Age of Respondent, and drag that over to the x-axis. Once again, I can click OK. Looking to the left for our y-axis, we can see the frequency. Looking at our x-axis, is where we see the actual variable or the attributes of our variable, Age of respondent.

Next, will request a pie chart. Again, going to Graphs, Chart Builder, moving past our warning about levels of measurement, resetting, requesting pie, clicking on the visual display of pie and moving it into the gallery. For a pie chart, the most appropriate variable would be a categorical variable.

So let's choose respondent's highest degree again. I will just simply drag that over to the box Slice By. Click OK. And here, you see that SPSS has provided a color coded pie chart for me sliced by respondent's highest degree.

If I want some additional information for the specific figure or any in SPSS, I can double click on the chart. For this chart, I'm going to go ahead up to the Menu and click on Show Data Labels. You can see right away that SPSS has self-populated each slice now with the percentage that make up the sample.

This provides you with just a little bit more information and can be helpful. If you don't like where your percentages are, that is inside the pie, you can go ahead and move them outside of the pie by moving over to your Properties tab, which is open for you already, looking at Label Position, clicking on Custom. Below custom, you'll see two options. If I hover over those, one will say outside, one will say inside.

They're already inside. So let's go ahead and choose outside to see how that looks. I click Apply, and then close our properties. And we can now see that the percentages have been moved outside of the pie.

The next chart that we'll cover is the scatter plot. Again, going up the Graphs, Chart Builder, moving past our Warning box, resetting from our previous request, selecting Scatter. You'll see there are a number of different options for scatter. And let's use the most commonly used one, simple scatter, dragging that over into the Chart Gallery.

Scatter plots are often used for visual depiction of bivariate analysis or bivariate relationships. Let's go ahead and examine visually a bivariate relationship between respondent's occupational prestige score and the number of hours they worked last week. We'll move respondent's occupational prestige score over to the x-axis. Go up and select number of hours worked last week, and move that over to the y-axis.

I can click OK. And I'm provided with a visual display of this relationship. So I can also add a third variable, a grouping variable, to my scatter plot as well. So from my Chart Gallery if I click on Groups, Point ID, and then select the Point ID Label, I might want to categorize these by respondent's gender. If I click on respondent's sex and move it over to the Point Label Variable and click OK, here you will see similar scatter, but each of the individual points are labeled either male or female.

The last graph or chart we'll use is the histogram, one of the most commonly used figures in statistical analysis and visual displays of data. Once again, going to Graphs and Chart Builder, moving past our warning, and resetting from our previous request. I will select Histogram.

From the visual displays here, select Simple Histogram and drag that into the gallery. Histograms are appropriate for metric level variables. So I'm going to choose the age of the respondent. Click OK. Here on the y-axis, you will once again see the frequency. And on the x-axis, the actual variable along with the values for that variable. You might find it useful to rescale your chart.

As you will see on the x-axis, increments appear in 20. That is every 20 years of the respondent. It might be useful for your purposes to rescale to every 10 years of the respondent. To do this, we can go back into our Church Builder, select Element Properties if not already selected for you, click on the X-axis under Editing Properties.

Under the Scale Range for Major Increment, unselect the Default, and in the Custom area, enter 10. Click Apply. OK And you now have a new figure, where the x-axis appears in increments of 10 years of age.

SPSS provides you with a number of different options for visually displaying your data. We've gone over just a few of the most commonly used displays. Now, it's your turn. I certainly encourage you to go into SPSS and play around with the data and the different options you have. Most important, have fun with it.