**Bar/Line chart of means (w/error bars)**

In this video I’m going to show you how to create a bar chart of means and a line graph of means. Now for both of these types of graph, your x-axis variable should be categorical and that means it needs to be defined as either nominal or ordinal in SPSS. Now typically we choose a bar chart when our categories are not a series over time or not related to each other, so here I just have average coffees sold, each day of the week, whereas for my line chart of means, it is showing a progression over time because it’s consecutive weeks. Now in my SPSS data file, I’ve got my days of the week variable and I’m going to use Coffees Sold, so this is showing me the numbers of coffees sold each on day of the week and I’m going to use it to compute an average. So if we go to ‘Graphs’ and ‘chart builder’, and I’m going to choose the first bar chart option. Go ahead and double click or drag it into your gallery. Our categorical variable always goes along the x-axis, so that’s my day of the week and I’ve defined it here as nominal. On your y-axis, you drag your scale variable for which you’d want to compute a mean. This will not work if your variable has not been defined as scale. Now anytime that you compute a bar chart or line chart of means, it’s usually a good idea to include arrow bars so take this box and you have three different arrow bars to choose from. You can show a confidence interval for the mean, you can show plus or minus a number of standard errors or you can show plus or minus the number of standard deviations. The one that you choose will depend on how you will interpret, so make sure you choose the correct one and I would suggest having a look at your lecture notes or recommended statistics text books, or even journal articles in your field to see what is most commonly used.

Go ahead and click ‘apply’, and when you do you should see your arrow bars appear on your graph. Now remember this is just an image, it’s not your data, so don’t worry if it doesn’t look correct. Go ahead and click ‘okay’ and here’s our bar chart of means, so the height of the bar represents the mean, and then I’ve got my 95% confidence interval for the mean.

Now let’s go back and create our line chart. Hit the reset button. So I’m going to choose ‘Line’ from the left and I want the first line chart. Again my categorical variable always goes along the x-axis, and my scale variable goes along the y-axis. Again, because this is a chart of means, I do want to display arrow bars and I’m going to continue with a confidence interval for the mean, and click ‘apply’. Go ahead and click ‘okay’, and this shows me on the line, the mean number of coffees sold for each week number, and these bars here give me a 95% confidence interval for my mean.

END.