**Bar/Line chart of means for repeated measures data (w/error bars)**

In this video I’m going to show you how to make a bar chart of means and a line chart of means for repeated measures data. Now both of these graphs also show error bars, and I’ve chosen 95% confidence intervals. Now my repeated measures are competency scores of employees and I have competency before they started their job, after six months and then after one year. Let’s have a look at the data in SPSS. You can see I have my three competency scores at my three different time periods and all three of these variables are scale in SPSS because they’re numbers and they’re not categorised. This will only work if you’re data is scale and you’ve defined it as scale in the variable view, so you can see here that all three are scale. So let’s go to the graphs menu and the chart builder.

I’m going to do a bar chart first, so choose the first bar option, drag it into your gallery. Now this graph is a little bit tricky and not very intuitive. Now what we need to do is highlight all three of our competency scores together, and I can do that by holding down the control key on my keyboard and then clicking on the next two competency scores. Now I need to click and drag, so I’m going to click, and I’m going to take it to the y-axis and you’ll see there’s a plus sign. Now if you ever forget where to drag, if you just try dragging it to the x-axis, you’ll see it says ‘No’, I can’t drop it there, but I can drop it here, and then SPSS tells me that it’s going to take these three variables and make them my categories along the x-axis which is exactly what I want. Click ‘okay’. Now for any graph of means that I do, it’s usually a good idea to also show error bars. I’m going to tick this option here, and I’ve got three different options for my error bars. I have a 95% confidence interval for the mean, I can also show plus or minus standard errors, or plus or minus standard deviations. I recommend that you have a look at your lecture notes or recommended textbooks, even journal articles produced in your subject area to know which of these that you should be showing on your graph. Go ahead and click ‘apply’, and your competence interval should show up in your gallery. Now remember this is just an image, it’s not what your graphs going to look like so don’t worry if it doesn’t right. Click ‘okay’. Here’s my bar chart of means with 95% confidence intervals for the mean. The height of each bar is the average competency, at each time point and my error bars shown. Now let’s do this for a line chart of means. Go back to the graphs menu in chart builder. I’m going to hit reset and choose ‘line’, and we want the first line graph, so double click or drag it in and we’re going to do the same thing, so click on the first one and hold down control, click on the second and third, and click and hold, and drag it to the y-axis. Click ‘okay’, and again, because this is a chart of means, I want error bars, I’m going to leave it with a 95% confidence interval for the mean. Click ‘apply’, and then click ‘okay’. Each point on the line is a mean, and these bars here show me a 95% confidence interval for that mean.

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