**Compute Pearson's r**

In this video, I’m going to show you how to run a Pearson’s r correlation coefficient in SPSS. Now for this particular test, both of our variables should be continuous. Continuous variables should be labelled as scale in SPSS. So examples of this would be my competency scores because you can see here this is numbers its continuous, it’s not coded or grouped. Also income and age would be acceptable because they are continuous scale variables. Now there is one exception to the rule and that is if you want to use a categorical variable with only two categories, such as gender and this is called a dichotomous variable because I only have two groups: male and female. And it is permissible to use a continuous variable and a dichotomous variable for a Pearson’s r, but consider if you have the situation and whether or not a t-test would be more appropriate. For our example, we’re going to use two continuous variables, so I’m going to use total competency, and I’m going to correlate that with age to see if there’s a relationship between age and how competent someone is before they start their job.

Now before we run a Pearson’s r test, there are a couple of things we have to check. So if we go here to my output file, the first thing is we need to check for normality and that’s because Person’s r test is called a parametric test so we’re assuming the data has this particular distribution, and we can see roughly speaking its approximately normal, not perfect but no variable will be, but its close enough. If you want to check further, so if you can’t really tell from your histogram, you can also run a normality test instead.

Now if I come up here to age, again not perfect but close enough, it would be fair to use the mean of standard deviation to represent this data, so I’m going to go ahead and say its normally distributed or close enough. The last thing we need to check is linearity. Now the Person’s r test is looking at the strength of the linear relationship between two variables, so its essential that when we make our scatter plot it has a linear relationship, I mean straight line relationship, there’s no curves, it doesn’t curve down, it doesn’t curve up, it doesn’t look exponential, and this is roughly speaking linear relationship. So we’re good to do our test, let’s go ahead. From the Analyse menu, and you can do this from the output or the data file. If we go down to correlate and choose Bivariate. We’re going to put in our two variables: age and competency. And make sure that Person’s r is ticked. We have two other options here. We’ll be looking at Spearman’s in a different video. You also have the option to choose a two-tailed or one-tailed test and this will be determined based on your alternate hypothesis, so if you don’t know in advance what the relationship will be, you just think there will relationship so you choose two-tailed. However if before you run the test, or before you collect the data, you think there should be a positive or negative relationship, then you need to choose a one-tailed test. Before I collected the data, I didn’t know what to expect, and from this relationship. So I’m going to choose two-tailed. You also have the option to allow SPSS to show you correlations that are significant. So it will put one asterisk if it’s significant .05, two asterisks if it’s significant of .01. This does not change your significance level; SPSS is just trying to help you out. Go ahead and click ‘okay’, and here are the results of our Pearson’s r correlation. Now we’re going to have a look at how to interpret these results in the next video.

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