**Interpret Pearson's r**

Let’s have a look at the results of our Pearson’s r correlation from SPSS. You can see here in our table, we’ve got ones across the diagonal and that will always happen because it’s a variable correlated with the self. So age correlated with age will always be perfectly positive and the same thing here, our competency correlated with itself. So we never report these, we’re just going to leave them alone. You’ll notice that the other diagonal has the same exact information in both boxes and that’s because this is competency with age and this one here is age with competency, so the exact same correlation. So we’re just going to choose one of those boxes to report from. So if we have a look here, our first value is our Pearson correlation coefficient value of .228. Now a correlation can be between -1 and +1, so it can positively or negative. Our value is positive, and if we have a look up here at our scatterplot, we can see that when we looked at the relationship between age and competency, the older people were, the more competent they tended to be starting the job, so this was an increasing relationship. Now there are a few extra dots here. These are kind of outliers. But our general trend was upwards. So this was a positive one. Now we need to know how strong that positive relationship is. I would recommend either using your lecture notes or use the statistics book you were given for your module or course to determine how strong or weak the relationship is. I’m going to show you a standard table that I took from a statistics text book. So these values here for a positive relationship tell me what would be considered strong, moderate weak or none. And the same thing for negative values, so I could have a strong negative relationship, moderate negative, weak negative or saying no relationship at all.

So if we go back to our SPSS output, our value of .228, that’s going to fall into the weak category, so I have a weak positive relationship between age and competency. Now the next statistic is our significance value which is also known as P value and it’s going to tell us whether or not we should conclude whether there is a relationship or not. Now like with any statistical test that we do, what we’re trying to establish is if the results happen by chance in our sample or is there enough evidence to suggest that what we found exists in the population. So we found it looks like a weak, positive relationship between age and competency, did that just happen because of the employees we surveyed, or would we expect to find that relationship existing population. So if we look down here at our p-value, .060, we’re going to compare that to our alpha value. Now my alpha value is .05. Your alpha value might be different, for example .01. Now this is bigger than .05, so that means I cannot reject my null hypothesis and I have to say there’s not enough evidence to say there’s a relationship between my two variables. If this value is less than .05 of my alpha value, then I could reject each zero and conclude there is a significant relationship between my variables.

Now a common thing that happens, which kind of throws students, off is that you’ll get a p-value that says .000. All that means is that your p value is very small, but it never equals 0. So never report that as p=0. And if you want to see an interpretation of a significant correlation, have a look at the video for interpreting a Spearman’s r correlation.

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