**Transcript: Confidence Intervals for Correlation Tests**

In this video, we will go over how to calculate and interpret confidence intervals for correlation tests. We're going to be doing the same tests that we did in the lab on correlation, which is looking at the relationship between a city's density and its crime rate. We will navigate to “Analyze”, “Correlate”, and “Bivariate”. This is all the same as what we did in the correlation lab, so if you need a refresher, feel free to go back and look at the videos or transcripts for that lab. But we're going to do the same thing in terms of moving our variables into this “Variables” field.

In order to get a confidence interval, we need to click on this “Confidence interval” button. Next, we will check the check box to “Estimate confidence interval of bivariate correlation parameter”. We could specify a different confidence interval level than 95 if we wanted, but we'll just leave it at 95 since that's a pretty standard confidence interval. Once we click “Continue” and “OK”, SPSS will produce our correlation results, including a confidence interval.

Next, we're going to look at the output for both R Commander and SPSS in order to see how to interpret these values. As a reminder, R Commander produces the confidence interval automatically, so you don't need to do anything different in order to obtain it when you're doing correlation analysis in R Commander. You can see the confidence interval here in R Commander, ranging from -0.09 to 0.30. We can see the same values here in SPSS, the lower and upper bound for our confidence interval.

Similar to the last video where we talked about confidence intervals for one-sample *t* tests, it's important to remember that the interpretation of the confidence interval is not particularly intuitive. In this case, we would say that if we took a lot of samples of different cities and measured their density and their crime rate, and we calculated a 95% confidence interval for each sample, we would expect the true correlation (or the relationship in the population) to fall within 95% of those confidence intervals.

Again, similar to the last video, let's look at whether the confidence interval intersects with our null hypothesis value, which in this case is 0. This is because 0 reflects a perfectly zero relationship between the two variables. Our confidence interval in this case overlaps with 0. It goes from - .09 to .30. And that reflects the fact that we have a non-significant *p* value. You can see our *p* value here (.27), and here, in R Commander. So again, we're seeing the same thing from both our significance test and our confidence interval, which in this case is that there's a non-significant correlation between city density and crime rate.