

LEARNING CHECK

1. By using your SPSS printout for the Spearman correlation between prescription rate for Autism Spectrum Disorder and per capita GDP, answer the following questions:
 - a) What is the precise significance level of relationship between these two ordinal variables?
A: $p = .001$
 - b) Where is the sample size provided on this printout?
A: The sample size is denoted by the capital letter N . The N in this example was 25.
 - c) What is the Spearman correlation coefficient (r_s)?
A: $r_s = .607$
 - d) Interpret this result in plain English.
A: There is a relationship between GDP and prescription rates for Autism Spectrum Disorder, such that countries with larger GDPs tend to have higher prescription rates for this disorder. Stated differently, countries with smaller GDPs tend to have lower prescription rates for this disorder.
2. What is the difference between a Pearson correlation and a Spearman correlation? Stated differently, when would a researcher use a Pearson correlation and when would a researcher use a Spearman correlation?
A: We use the Pearson correlation when we have two scale variables. We use the Spearman correlation when we have two ordinal (ranked) variables. It is possible you will see a Spearman correlation reported in published research when the variables being correlated are scale variables. This will happen when one or more of the assumptions of the Pearson correlation have been violated.
3. What is the difference between a Spearman correlation and a chi-squared (χ^2) test for independence? Stated differently, when would a researcher use each one of these two tools?
A: Whereas the Spearman correlation requires two ordinal variables, the χ^2 test for independence requires two nominal variables.
4. If I select an alpha level of .035, what does that mean in plain English?
A: It means that we are accepting a 3.5% chance that our statistical result is a Type I error; that is, we accepted a 3.5% chance that we find a relationship between variables in our sample that does not exist in the population from which that sample was drawn.