**What is this test used for?**

A chi-square test tests if there is a statistical relationship between two interval or ratio variables. Answers the question of whether two variables are related or not.

H0: There is not a relationship between VARIABLE A and VARIABLE B; *r* = 0.

H1: There is a relationship between VARIABLE A and VARIABLE B; *r* ≠ 0.

**Assumptions**

1. There are two interval or ratio variables for a Pearson Correlation; however, you can run a Spearman Correlation if you have ordinal variables.
2. There needs to be a linear relationship between the two variables. The best way of checking this assumption is to plot a scatterplot and visually inspect the graph.
3. There should be no significant outliers. Can also use the scatterplot to assess for this assumption.
4. Bivariate normality.
5. Data is normally distributed. Look at skewness and kurtosis values (want them to be as close to 1 as possible). Also look at Shapiro-Wilk and Kolmogorov-Smirnov tests. You want the tests to *not* be significant (meaning, you want *p* to be < .05).

**Interpretation**

1. Look at Pearson Correlation value and significance value (the *p* value).
   1. If the *p* value is less than your alpha level (normally .05), then you reject your null hypothesis.
   2. If the *p* value is larger than your alpha level (normally .05), then you fail to reject (or you accept) your null hypothesis.

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| **Coefficient Value** | **Strength of Association** |
| 0.1 < | *r* | < .3 | small correlation |
| 0.3 < | *r* | < .5 | medium/moderate correlation |
| | *r* | > .5 | large/strong correlation |

**Reporting**

A Pearson's correlation was run to assess the relationship between VARIABLE A and VARIABLE B. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk's test (p > .05), and there were no outliers. There [was/was not] a [strength of correlation] [direction of relationship: positive or negative] correlation between VARIABLE A and VARIABLE B, *r* = [Pearson Correlation value], *p* [< .05 OR > .05]. VARIABLE A explained [?]% of the variance in VARIABLE B, *r2* = ?.

**Effect Size Test**

*r2* = *r* x *r*

This value tells you how much variance VARIABLE A explains in VARIABLE B. (i.e., how much of the pie is being explained?).