12.1: Introduction to Bivariate Correlation

The **bivariate correlation** is used when you want to test whether two quantitative variables are related. Related in this sense refers to there being a linear pattern between the two variables. This is conceptually distinct from what we have seen so far in this book. In our prior chapters (Chapters 7 through 11) we focused on comparing something quantitative between groups or conditions. However, not all hypotheses and data sets have a qualitative grouping or condition variable. Instead, there are times when the data are only quantitative and we wish to analyze those variables together. When this occurs, bivariate correlation may be the best fit to the hypothesis and data. For example, a bivariate correlation could be used to test whether income is related to level of happiness or whether hours spent exercising is related to amount of stress. In each of these examples the relationship between two quantitative variables (income and happiness in the first example and exercise and stress in the second example) is the being proposed and, thus, would be tested.

The version of correlation which is the focus of this chapter is known as a Pearson's Product Moment Correlation (PPMC) or a Pearson's Correlation. Because it is so commonly used, it is often simply referred to simply as a correlation without specifying the full name.