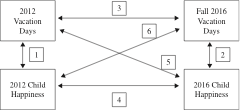
Group Exercise: Multivariate Research

Dr. O’Toole is a counseling psychologist who researches family dynamics. He is curious as to whether there is a causal link between the amount of time families spend together on vacation and children’s happiness. More specifically, he thinks that spending more time together as a family on vacation causes children to be happier. He designs a study where he samples 63 single-child families in December 2012 and measures how many days the family spent on vacation in the past year as well as the child’s happiness. He then contacts the same families in December 2016 and measures those two variables again. The results of his study are below.

|  |  |  |
| --- | --- | --- |
|  | Variable A | Variable B |
| Correlation 1 | 2012 vacation days | 2012 child happiness |
| Correlation 2 | 2016 vacation days | 2016 child happiness |
| Correlation 3 | 2012 vacation days | 2016 vacation days |
| Correlation 4 | 2012 child happiness | 2016 child happiness |
| Correlation 5 | 2012 vacation days | 2016 child happiness |
| Correlation 6 | 2012 child happiness | 2016 vacation days |



1. There are three types of correlations discussed in longitudinal designs. From Dr. O’Toole’s study, provide an example of each of the following: a cross-sectional correlation, an autocorrelation, and a cross-lag correlation. Make sure you use the variable names and not just the correlation numbers (e.g., the correlation between 2012 vacation days and 2012 child happiness).

2. There are three possible causal patterns that can be found in a study like Dr. O’Toole’s. Choose one causal pattern and explain which correlations need to be significant, which ones should not be significant, and what type of causal claim can be made. Make sure you use the variable names and not just the correlation numbers (e.g., Correlation 1).