

Using Correlation to Measure Relationships between Continuous Variables

By definition, two continuous variables are correlated if there's a linear association between them, but remember that it's possible to have strong associations that are nonlinear in nature. To interpret the correlation that we observe in our scatter plot, we use correlation statistics, which measure the degree, or strength, of linear association between two variables.

We'll use the Pearson correlation coefficient as our correlation statistic. The correlation coefficient ranges from -1 to +1. The closer the value is to -1, the stronger the negative linear relationship between the two variables. A negative linear relationship between two variables means that, as the values of one variable increase, the values of the other variable decrease. The closer the value is to 0, the weaker the linear relationship is, and a correlation coefficient equal to 0 means that no linear relationship exists between the two variables. In other words, the variables are uncorrelated. The closer the value is to +1, the stronger the positive linear relationship between the two variables. That is, as the values of one variable increase, the other tends to increase as well.

Statistics 1: Introduction to ANOVA, Regression, and Logistic Regression

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