5.4: Multicollinearity

Topic 5.4: Multicollinearity

Read Sections 9.1 to 9.3 of your textbook. As you read, take notes on the following.

1. Describe, using your own words, what multicollinearity is.

2. How does multicollinearity affect the variance of regression coefficients? How does multicollinearity affect statistical inference? How does multicollinearity affect predictions?

3. What happens to the matrix $(X'X)^{-1}$ when a subset of the predictors are linearly dependent?

4. Describe, using your own words, the four ways in which multicollinearity occurs.

Refer to this file to see a couple of numerical examples that show the effect of having uncorrelated predictors versus having perfectly correlated predictors.

mod5_correlated.pdf
Multicollinearity When Predictors Are Uncorrelated and When Predictors Are Perfectly Correlated