

Regression Assignment

Assignment Overview

You will perform 3 regression analyses in this assignment. The variable types for the coefficients are pre-specified so that you can practice interpretations of different types of variables. **You must use the variable types listed here**

1. Multiple Linear Regression: $Q \sim Q + B$ (one quantitative and one binary predictor)
2. Logistic Regression: $\text{logit}(B) \sim Q + B$
3. Either of the two above analyses (or a new model) add a third categorical (more than 2 levels) variable e.g.: $Q \sim Q + B + C$. (one quantitative, one binary, one categorical)

Instructions

0. Use the template provided: [RMD]
1. Identify variables under consideration.
2. Write the mathematical model being fit by using LaTeX script (example below) directly in the Rmarkdown file. (Not in a code chunk, and yes the two dollar signs are necessary.)

$y_i \sim \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \epsilon_i$

3. Fit the model and calculate confidence intervals for the coefficients.
4. Interpret all regression coefficients except the intercept.
 - For logistic regression, calculate and interpret the Odds Ratios