

CVEN 626 – Highway Safety

Assignment #6

This assignment is due on Friday, November 14th, 2025. Please be ready to discuss the topic in Friday's lecture.

Use the same team as for Assignment 4.

All questions are 20 points.

Question 1

Using the “Assignment 6 Dataset,” estimate the change in the predicted number of collisions using the naïve before–after study. For this question, just adjust for the time period. How confident are you about the change in safety you estimated?

Question 2

A predictive model was estimated using data collected for the control group. The predicted model is given by the following:

$$\text{Crashes/year} = \exp(-8.04) \times (F_1)^{0.5} \times (F_2)^{0.43}$$

The inverse dispersion parameter (ϕ) is equal to 2.30.

Using the same data, now assume that and adjust for the changes in traffic flow. You do this by taking the ratio between the predicted model using the traffic flows for the before and after time periods. How confident are you about the change in safety you estimated?

Question 3

Repeat the exercise in Questions 1 and 2, but use the EB method. Follow the steps described in the slides and textbook. How confident are you about the change in safety you estimated? Compare the estimates calculated in all three questions and comment on this comparison.