ECON 0150 | Fall 2025 | Homework 4.2

Due: Friday November 7, at 5PM

Homework is designed to both test your knowledge and challenge you to apply familiar concepts in new applications. Answer clearly and completely. You are welcomed and encouraged to work in groups so long as your work is your own. Use the provided datasets to answer the following questions. Then submit your figures and answers to Gradescope.

Q1. Final Project Group Members

List your name with the names of the 1 or 2 group members you have decided to work with. For example: "Taylor Weidman, Molly Kraybill, Maxine Kraybill". If you have decided to work alone, include just your name and when we talked about working alone. For example: "Taylor Weidman, after class".

Q2. Happiness and GDP

This question is based on our work during Exercise 4.1 and Exercise 4.2 in class. Use the happiness dataset `Life_Evaluation_GDP_PerCap.csv` to answer the following questions. The dataset contains the following variables:

- `Year`: year of observation
- `Country`: the country of observation
- `Life_Evaluation`: composite measure of happiness based on survey polling
- `GDP_Per_Cap`: the country's GDP in that year divided by the population

a) Create a scatterplot with GDP Per Capita on the horizontal axis and happiness on the vertical axis for the year 2024.

b) Does there appear to be a relationship between the two variables?

c) Does the relationship appear to be linear?

d) Perform a log transformation of GDP Per Capita and create a scatterplot with log GDP Per Capita on the horizontal axis and happiness on the vertical axis.

e) Fit a linear regression model to predict happiness using log GDP Per Capita. What is the interpretation of the intercept coefficient?

c) What is the interpretation of the slope coefficient?

d) What is the interpretation of the p-value of the slope coefficient?