

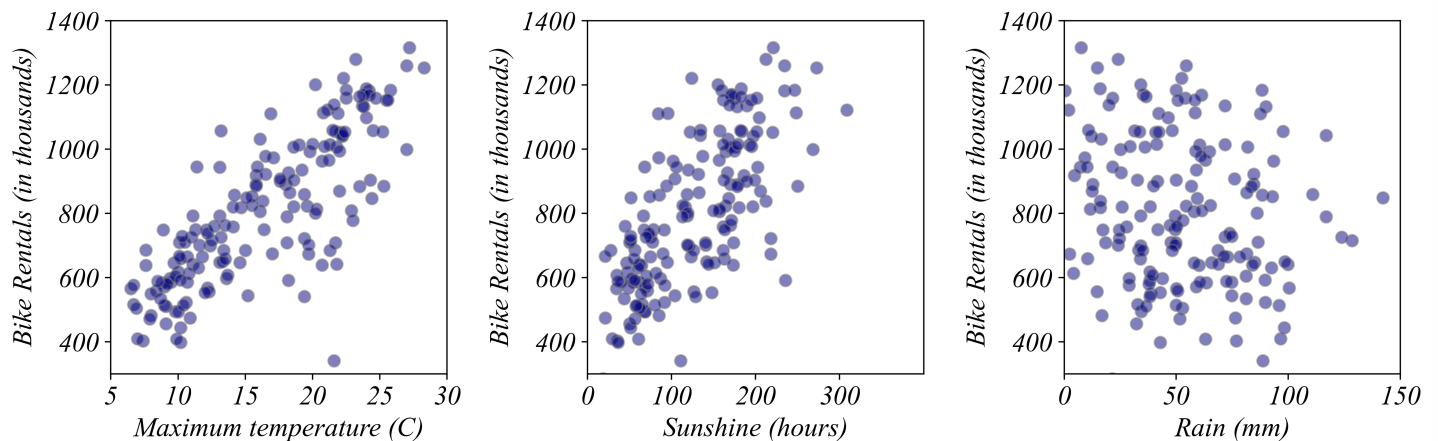
ECON 0150 | Spring 2026 | Homework 2.1

Due: Friday, February 13 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. Submit your figures and answers to Gradescope.

Q1. Bike Rentals and Weather

In the following questions, we'll analyze a data set that includes the monthly number of bike rentals in London as well as monthly weather data: minimum and maximum temperature in degrees Celsius, rain in millimeters, and hours of sunshine.



a) From the list below, how much did it rain in the month with the largest number of bike rentals?

- 7.6 mm
- 27.6 mm
- 137.6 mm
- 157.6 mm

b) When were bikes most popular?

- In very sunny months
- In moderately sunny months
- In cloudy months
- Sunshine and bike rentals were not strongly related

c) In months with what maximum temperatures were bikes most popular?

- Between 5 C and 10 C
- Between 15 C and 20 C
- Between 25 C and 30 C
- Maximum temperature and bike rentals were not strongly related

Q2. Coffee Production and Agricultural Employment

The dataset `coffee_prod_agr.csv` provides information on coffee production and employment in agriculture across different countries, merged from data available at [Our World In Data](#) and [The World Bank](#).

a) Briefly describe the organizations that collected the data reported in each source using the links provided.

b) Identify one potential limitation in the data.

c) Create a log transformation of the `Coffee_Prod` as the new variable `Log_Coffee_Prod`. Then visualize the relationship between `Employment_in_agriculture` and `Log_Coffee_Prod`.

d) Describe the relationship: positive, negative, unclear.

e) Why might we see this relationship between log coffee production and employment in agriculture?