Assignment I: Simple & Multiple Linear Regression

Econometrics I

Assigned: Feb 15, 2022
To submit: Mar 1, 2022

Write down the answer of each problem:

Problem 1

Use the data in **CHARITY.RAW** [obtained from Franses and Paap (2001)] to answer the following questions:

1. What is the average gift in the sample of 4,268 people (in Dutch guilders)? What percentage of people gave no gift?
2. What is the average mailings per year? What are the minimum and maximum values?
3. Estimate the model
$$gift = \beta_0 + \beta_1\ mailsyear + u$$
by OLS (Ordinary Least Squares)¡ and report the results in the usual way, including the sample size and R-squared
4. Interpret the slope coefficient. If each mailing costs one guilder, is the charity expected to make a net gain on each mailing? Does this mean the charity makes a net gain on every mailing? Explain
5. hat is the smallest predicted charitable contribution in the sample? Using this simple regression analysis, can you ever predict zero for $gift$?

Problem 2

Use the data in **WAGE2.RAW** to...

1. Run a simple regression of IQ over $educ$ in order to obtain the slope, for example $\hat{\delta_1}$
2. Run a simple regression of $log(wage)$ over $educ$ in order to obtain the slope $\hat{\beta_1}$
3. Run a multiple regression of $log(wage)$ over $educ$ and IQ in order to obtain slope coefficients β_1, β_1

Note: *Dataset are available in our GitHub repository class or by searching them on Google.*