

Problem Set 1

BUAN 6356

Due: Monday, 2017-01-29-11:59pm

Deliverable: an R source-code file named ps1.r

Question 1

Data The data for this question comes from the file Wage1.csv. This data is for various workers at the employee-level. We have data on their average hourly wage along with information about their years of education, experience, tenure (years at the same firm), and some job/industry characteristics.

Analysis

- Read the data Wage1.csv into a new variable using the data.table package (use a data.frame if you still can't install data.table): context1
- Use summary statistics to familiarize yourself with the data.
- Generate a new variable that is the natural logarithm of wage. Name it: lwage
- Run the following linear model using the 'lm' function. Store the result in: model1

$$\text{wage}_i = \beta_0 + \beta_1 \text{educ}_i + e_i \quad (1)$$

- Run the following linear model using the 'lm' function. Store the result in: model2

$$\text{wage}_i = \beta_0 + \beta_1 \text{educ}_i + \beta_2 \text{exper}_i + \beta_3 \text{tenure}_i + e_i \quad (2)$$

- Run the following linear model using the 'lm' function. Store the result in: model3

$$\text{lwage}_i = \beta_0 + \beta_1 \text{educ}_i + \beta_2 \text{exper}_i + \beta_3 \text{tenure}_i + e_i \quad (3)$$

Interpretations a. Interpret the estimated coefficient on educ from model1 (eq 1).

b. Interpret the estimated coefficient on educ from model2 (eq 2).

c. Interpret the estimated coefficient on exper from model2 (eq 2).

d. Interpret the estimated coefficient on tenure from model2 (eq 2).

e. Interpret the estimated intercept from model2 (eq 2).

f. Interpret the estimated coefficient on educ from model3 (eq 3).

g. Interpret the estimated coefficient on exper from model3 (eq 3).

h. Interpret the estimated coefficient on tenure from model3 (eq 3).