

Homework #6
RPAD 316
Professor Stephen Holt

Instructions: You will be doing the problems in this assignment by hand. For the problems by hand, show your work for each step. For any Stata questions, when asked for graphs, save the graph as a .png file and paste the image into the appropriate section of the word document. Paste your code that produced the graph below the graph. When asked for tables, use the esttab process covered in class to create the "csv" tables and paste them into the homework. Paste the code used to create the table under the table.

Using dataset one, find the mean and standard deviation of hours worked per day. For the following questions, use the sample mean and standard deviation in the dataset as the population mean and standard deviation.

1. If you work 10 hours in a day, what proportion of workers work less time than you on average?
2. You take a sample of 900 workers and calculate the average time they spend working per day. What is the probability that the average time they spend working is below 6.5 hours per day?
3. You take a sample of 1,600 workers and calculate the average time they spend working per day. What is the probability that the average time they spend working is below 6.5 hours per day?
4. You take a sample of 400 workers and calculate the average time they spend working per day. What is the probability that the average time they spend working is above 6.5 hours per day?
5. What is the distribution of all possible means of 2,500 workers?
6. You find out your co-worker works an average of 4 hours each day. What proportion of workers spends more time working in the average day?
7. In a sample of 6,400 workers, the average time spent working is 7 and a half hours per day. What is the 95% confidence interval of the sample?

Extra credit

1. Create a histogram of time spent working per day in the education and health industry.
2. Create a table that presents the average and standard deviation time spent working per day (worktime) and the average time spent playing sports or exercising per day (sprtime) using esttab for the full sample, only the education and health industry, and the business and professional services industry. NOTE: Your resulting table should have 3 columns.

3. Create a scatter plot where the time someone spends exercising or playing sports is the dependent variable and the time someone spends working is the independent variable.
4. Create a scatter plot just like for extra credit problem 3, but only for people who spent at least one minute exercising or playing sports.