Texting During Class and GPA

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September 30th, 2015

Abstract

This is my first time merging RStudio and LyX together to test my ability to perform basic econometric functions in R and format the results and proceeding analysis at a competitve level.

I will be using this for the remainder of my Econ 104 work and perhaps more for converting my TIM work into something more comprehensive. Note I like using sections and subsections. One issue I see is that paragraphs are bold... Also the separator doesen't do anything. Labeling is for one word terms.

1 Introduction

The data set contains 3 variables and 61 observations. The first binary variable *Male* is 1 if the subject is male or 0 indicating female. *Texts_ class* is the number of times a person sends a text during a given class. Lastly, *GPA* is the student's grade point average.

2 Read Data into R

To perform regressions in R, one must first read in data from a given file. File *testing_ survey.csv* is read in based on the file path on my local hard drive. The

.csv file is saved as *texting*. The code also tells R the headers are saved in the csv file and will be kept as variables for later use. It also explains that the .csv file uses commas to separate values so it knows where each data point begins and ends.

Attach the data so when we refer to columns, rows and data we can do so by invoking "texting" as opposed to its full path.

We are now ready to explore the data set through graphs to familiarize with trends and prepare for running regressions.

3 Display Data

To check distributions and practice with histograms, we are plotting different data points and inferring what we can from each one.

This histogram plots the *Male* frequency distribution and gives it its title. It confirms *Male* is binary, with all values either being 0 or 1. We learn this data set has about 20 females and 40 males, a 1:2 ratio. See the Appendix, Figure 3.1.

Applying similar code, we examine the *Texts_ class* distribution graph. Make sure the x-axis breaks at 50 so the histogram focuses on where we have the highest frequency of texts per class. Most subjects send up to 10 texts per class, but there are definitely a significant number of students who send more. See the Appendix, Figure 3.2.

Again, we create the *GPA* distribution graph and break it at 50. Most studends have a GPA of 3.0 or higher, but there are a significant number with lower GPAs. This is a similar trend as with *Texts_ class*. See the Appendix, Figure 3.3.

Lastly, plot *GPA* against *Texts_ class* to better understand their relationship. There is clearly a decrease in GPA when texts per class increases, or a seemingly

negative correlation. To test this, run a regression.

4 Run Basic Regression

Regress *Texts_ class* onto *GPA*. Looking at the regression's summary statistics. [Go over estimates/equation, std. error, t-value, Pr(>|t|), p-value, etc.]

5 Conclusion

There is a negative correlation between sent texts per class and GPA. This makes sense, as being distracted during class would likely cause your grades to decrease.

This exercise was a great introduction into using LyX, performing basic econometric functions in R Studio, and setting a standard format for my portfolio of projects. From here, I can strongly move forward with homework assignments and papers.

References

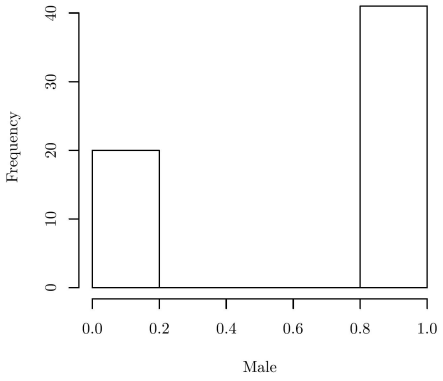
Carlos Dobkin. Economics 104 spring quarter 2015, 2015. http://people.ucsc.edu/ cdobkin/Econ104.html.

Marek Hlavac. stargazer: Well-formatted regression and summary statistics tables, 2015. http://CRAN.R-project.org/package=stargazer.

Stephen Wolff and Liviu Andronic. *Essentials of LyX*, 2011. http://wiki.lyx.org/uploads/LyX/tutorials/essentials/LyX_Essentials.pdf.

A Graphs

Figure 3.1 — Male Distribution



B R Code

```
### Section 2 ###
texting <- read.csv(file="/Users/alenamclucas/Dropbox/ECON/104(Dobkin)
/Data/1_texting_survey/texting_survey.csv",head=TRUE,sep=",")
attach(texting)
### Section 3 ###
hist(Male,main = "Figure 3.1 - Male Distribution")
hist(Texts_class,breaks = 50,main = "Figure 3.2 - Texts per Class
Distribution")
hist(GPA,breaks = 50,main = "Figure 3.3 - GPA Distribution")
plot(Texts_class,GPA,pch=21,bg="blue",xlab="Texts per Class",ylab="GPA
for Quarter",main="Correlation Between Texting and GPA")
### Section 4 ###
reg1 <- lm(GPA ~ Texts_class)
summary(reg1)
reg1_f <- predict(reg1)
lines(Texts_class,reg1_f)
```