

ECON 282 Assignment 4

(1) For this assignment, you can pick your own data set. Try to find one with more than 100 rows and several columns. If you prefer, you can use the sample dataset linked on the syllabus or the data on Australian rules football in the textbook reading.

(2) Describe the dataset in words. Write down your hypothesis, and explain why you think a correlation might exist.

(3) Some generic R Instructions: If you're not in the correct directory, set it to the right one with

```
>setwd("directory"). If your dataset is in .txt use >DataSetName<-read.delim("DataSet.txt",  
header=TRUE). If your dataset is in .csv use >DataSetName<-read.csv("DataSet.csv", header=TRUE). If  
your dataset is in another format like from Stata, SAS, etc, you may need to download the "foreign" package to handle it.
```

(4) Since we are only working with one dataset, we may not want to specify our the data frame every time we use a variable. You can use the attach command to let R know that all variable names now refer to that dataset: >attach(DataSetName).

(5) Using your hypothesis from (2), run the following commands using just one dependent variable and one independent variable:

```
> plot(DependentVariable ~ IndependentVariable, xlab = "X Label", ylab = "Y Label")  
> modell <- lm(DependentVariable ~ IndependentVariable)  
>summary(modell)  
>abline(modell)
```

(6) Now try a multiple regression where you use more than one independent variable. Remember to add a + sign between each independent variable in the lm command.

(7) Do you have a significant p-value (is your p-value less than .05)? Does this mean your hypothesis is definitely correct? Can you think of possible confounding variables? Is your r-squared value low are high? Why do you think this is? If your r-squared is low, check your plot. Does the plot look linear? Is there a different curve that should be used? If it's not linear, perhaps try a squared term.

(8) Some generic instructions for formatting this assignment: You will probably want to copy and paste from the R console to a word processor since you will also be adding your own text describing what you are doing. The plot you draw can also be exported, either via the system clipboard or by saving as a graphics file and then inserting into your document. Notice the little "Export" dropdown menu above the plot in RStudio.