

# POLS 6481 - Methods 2 - Lab 6

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# Overview

1 Followup Code

2 Survey Questions

3 Recommendations

# Diagnosing Heteroskedasticity Section

## Question

In Part 1: Diagnosing Heteroskedasticity, the script gave me the error code of: Error in...replacement has 0 rows, data has 50. The worksheet code worked.

## Note

There are three frames here, with a solution, a note about debugging, and a note about coding related to this issue.

## Diagnosing Heteroskedasticity Section: 2

### Solution

*I think I sent a message in the lab Teams because I ran into the same thing when I tried running the whole script at once. Sorry the message didn't get to everyone before they tried this.* The issue here is that the lines immediately above that need to be run one at a time. One of the plots requires you to manually hit return in the Console 4 or 5 times to move to the next plot. If you don't hit those returns, it doesn't generate what you need to run that line and you end up with zero rows of data. So, the script does work, but you can't highlight this big block and hit run because you have to actually interact with part of it.

# Diagnosing Heteroskedasticity Section: 3

## Debugging Lesson

If your code has an error when you run it all at once, go back to the last line of the code that worked correctly and move forward one line at a time until you get an error.

## Coding Lesson

Periodically run the new code in the smallest chunks possible.

# Easy White Test

## Question

In the "easy" white test in R, does it automatically calculate for you? I didn't see anywhere we created a value for that but it seemed to know how to run the model.

## Solution

Actually, I'm going to defer to Dr. Basinger on this since he wrote the script. I believe that the way he wrote the script, it computes the necessary values without always naming them explicitly, but I haven't actually taken the script apart line by line.

# The here package failing

## here, Git, RStudio Projects

If anyone is having issues with *here*, RStudio Projects, or Git, let me know.

- 1 Git has to be working or you have to copy files manually to the right place.
- 2 Do a fresh Git pull and use the latest updated script.
- 3 Don't alter the relevant parts of the script.
- 4 Open the original Project created using Git each time you start working on a lab.
- 5 **Overall solution if all else fails:** create a new project from scratch using version control *in a new location on your computer*.

## Question 2

Question

Recommendation

Answer

These are on several slides at the end. I've lived here for 9 or 10 years now and I got some ideas.



# Questions 4,5,6 and EC 1

## Question

Since these were all on your own data, I'm going through them individually but getting your homeworks back is a higher priority. From a quick scan, they all looked good. If you want any specific feedback or had any issues still unresolved, let me know. If any of these are something you are working on for another class and would like help with sooner, let me know.

## Question 7

### Question

In lines 24 and 25, you run a Breusch-Pagan test on the model. What is the null hypothesis? At a 95% confidence level, do you retain or reject the null hypothesis for this model? After running all the tests, at a 95% level of confidence, is heteroskedasticity an issue?

### Answer

The null hypothesis is homoskedasticity. We reject it in this case at the 95% confidence level. Yes, heteroskedasticity is an issue here.

## Question 8

### Question

After running all the tests, at a 95% level of confidence, is heteroskedasticity an issue?

### Answer

Yes

## Question 9

### Question

From the worksheet: Although the F-statistic allows you to reject the null hypothesis of homoscedasticity, neither coefficient for  $\hat{y}$  or for  $\hat{y}^2$  is statistically significant. Why do you think that might be?

### Answer

The variables are highly correlated. There is multicollinearity. The result is that they split the significance that either one alone would show.

## Question 10

### Question

From Worksheet: Remember that the estimated variances of the estimated coefficients are on the main diagonal. Does any version of the variance-covariance matrix contain systematically larger variances? Does any version of the variance-covariance matrix contain systematically smaller variances?

### Answer

The robust standard error version has is systematically larger variances. The normal version has systematically smaller variances.

# Recommendations Wanted

- Restaurants
- Museums
- General native perception of Houston

# Recommendations List

- Museum of Fine Arts - 3 recommendations
- Natural Science Museum - 4 recommendations
- Holocaust Museum
- NASA - The Space Center
- The Galleria
- Tiger Den - ramen restaurant
- Agora and Sweet Paris for coffee
- Campesino - Mexico City themed coffee shop with great tamales

## Tom's Recommendations

December marked my 9th year in Houston and I came here with a lot of native and long time Houstonian friends. Here are a few great spots:

- West Alabama Icehouse - great traditional patio beer bar owned by wonderful people
- The Houston Zoo - free to UH students but worth paying for
- The Rice Box - any location (great value and quality)
- Tacos del Gato on Westheimer - The off campus food truck scene generally
- Pink's Pizza - *off campus locations are better*
- Whole Foods Post Oak Upstairs lounge area (reopening soon) great for working, better coffee than SB, good pizza
- Bubba's Texas Burger Shack - Westpark near Rice Avenue
- Roegel's BBQ - Best in the world - Voss Road north of Westheimer



# Recommendations 1

*My favorite coffee shop in Houston is Campesino. It is in what used to be a house so it is very cozy and they make great coffee and tamales (it's Mexican themed - like Mexico City Mexico) Dinner on the 2nd or 3rd floor of Buffalo Bayou Brewing Co. offers a great view of the city skyline at night (and during the day) and they have some amazing beer and a great loaded tots meal. Highly recommend walking around Hermann Park to anyone, it's beautiful and not usually too crowded (though sometimes). The Centennial Gardens there are beautiful.*

## Recommendations 2

*For night life, Barbarellas is good fun; 90s night is Thursday, 80s night is Saturday, new music is Friday, and there is also an emo night once a month. Menil is nice. 19th street and the heights is fun shopping and eating. White oak, not far from there, is also nice. There is an Italian place near there, Coltivare, that is some of the best I've ever had. I've been here for a while, so I have many more, but I'll share those in person.*

# The End