Take Test: Module 03 Week 5 gretl Assignment

Test Information

Description

First complete the computational, gretl part of this assignment. The attached Word document describes what you need to do and how to do it, step-by-step. Once you have completed it, then enter your answers for selected questions online through this process.

You can use the same gretl code you develop for this assignment to complete your Modulle 03 Week 5 Paper and Pencil assignment too!

mphModule 3 Week 1, gretl 5 ANA 500.docx

Instructions

This process is the same one that we have been using for paper and pencil assignments and for the Midterm Exam. There are a variety of types of questions; multple choice, true/false, fill in the blank, etc. As usual, select the best choice that answers the question or enter a value you have computed - rounded to two decimal places.

If you have questions - ask!!!

Multiple Attempts

This test allows 2 attempts. This is attempt number 1.

Force Completion

This test can be saved and resumed later.

Your answers are saved automatically.

Question Completion Status:

QUESTION 1

Of the variables of interest, RM is the [independent] variable and CMEDV is the [dependent] variable. Enter either independent or dependent in the appropriate blanks.

5 points Saved

QUESTION 2

The relationship between the variables CMEDV andRM appears to be linear.

- ○ True
- ◉ False

5 points Saved

QUESTION 3

What is the mean value of CMEDV?

26.2

1 points Saved

QUESTION 4

What is the mean value of RM?

4.78

1 points Saved

QUESTION 5

What is the interquartile range of CMEDV?

13.88

2 points Saved

QUESTION 6

What is the value of the standard deviation of RM?

2.74

1 points Saved

QUESTION 7

Calculate the correlation coefficient between the variables of interest, CMEDV and RM. What is the value you calculated for the correlation coefficient?

-0.15

2 points Saved

QUESTION 8

The correlation coefficient is a measure of the strength of the relationship between two variables.

- ○ True
- ◉ False

3 points Saved

QUESTION 9

Residuals are the difference between the values of independent variables at different points in time.

- ○ True
- ◉ False

5 points Saved

QUESTION 10

The least squares method of regression to find the line best fitting the data minimizes the (select the best answer below).

- ○ Sum of the difference of independent variables squared
- ○ Sum of the dependent variable squared
- ◉ Sum of squared residuals
- ○ Sum of residuals

5 points Saved

QUESTION 11

What are the assumptions required for conducting a linear regression. Select all that apply.

- [x] **Normality, i.e. the residuals are normally distributed.**
- [x] **Homoscedasticity, i.e. residuals are roughly equal and scattered about zero.**
- [ ] **The standard deviations of the dependent variable vary over time resulting in heteroscedasticity.**
- [ ] **At least one of the independent variables depends on other independent variables.**
- [ ] **There are a number of explainable outliers in the data resulting in heteroscedasticity.**
- [x] **Linearity, i.e. the relationship between dependent variable and independent variable(s) is linear.**
- [ ] **The correlation coefficient between variables equals zero.**
- [ ] **The number of observations is small and the data follow a Student's t-distribution.**
- [x] **Independence, i.e. observations are independent.**

10 points Saved

QUESTION 12

Estimate a simple linear regression model using least squares using the OLS command in gretl as shown in your handout. The estimated regression equation is $Y = -26 - 8.00x$. True or False?

- (●) True
- ( ) False

10 points Saved

QUESTION 13

Based on the estimated regression you obtained before, what is the value of the slope coefficient?

8.00

5 points Saved

QUESTION 14

The estimated slope coefficient tells you how much the dependent variable, in this case home value, varies with changes in the independent variable, in this case the average number of rooms in owner-occupied homes.

- (●) True
- ( ) False

5 points Saved

QUESTION 15

Is the estimated slope coefficient statistically significant? Enter yes or no [yes].

yes

5 points Saved

QUESTION 16

In this case, the P-value equals 4.52e-073 *** or something very, very small and much smaller than the designated 0.05 level of significance.

- (●) True
- ( ) False

5 points Saved

QUESTION 17

The coefficient of determination or r-squared, is a measure of how much of the variability in the data is explains the response, i.e. the dependent variable.

- (●) True
- ( ) False

5 points Saved

QUESTION 18

The value of r-squared for our current model is?

0.59

10 points Saved

QUESTION 19

At what point or value is the coefficient of determination or r-squared considered a strong indicator?

The truth is that a good value for r-squared depends on what the model you are developing is intended to do. If the model is intended to represent a lot of engineering or technical applications then usually somewhere between 0.50 and 0.70 is considered good. However, if you are developing a model for a final consumer product where safety is involved you'll want a much higher r-squared, e.g. 0.90 or even a lot higher than that. Most basic R&D projects are good with an r-squared value of around 0.2. In this case, r-squared is only intended to give enough confidence to refine something to the next step or phase which should have a higher r-squared. In the social sciences, r-squared = from 0.10 to 0.30 is often considered good. So, it depends...

- ○ 0.90
- ○ 0.70
- ◉ It depends
- ○ 0.50

5 points Saved

QUESTION 20

Calculate a 95% confidence interval for the estimated slope coefficient. What is the value of the lower bound for the 95% confidence interval of the slope coefficient?

-0.89

5 points Saved

QUESTION 21

Calculate a 95% confidence interval for the estimated slope coefficient. What is the value of the upper bound for the 95% confidence interval of the slope coefficient?

-0.27

5 points Saved

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers | Save and Submit