Ministry of Higher Education & Scientific Research

Salahaddin University-Erbil
College of Administration and Economics
Department: Statistics and Informatics
Stage: 4rd Year

Subject: Processing Econometric Problems
Date: 12 / 5 / 2024
Time: 2 Hours

Final Exam- Second Semester: First Trial 2023- 2024

Q1// Choose the **Correct** answer **(10 Marks)**

1- Which of the following best describes multicollinearity in regression analysis?

a) It occurs when there is a perfect linear relationship between two or more independent variables.

b) It refers to the situation where the dependent variable is correlated with one of the independent variables.

c) It indicates that the residuals of the regression model are normally distributed.

d) It suggests that the coefficients of the independent variables are significantly different from zero.

2- Which of the following statements is correct if |X'X| = 0.

a) Perfect correlation, b) Partial correlation , c) Semi perfect correlation , d)Non-of them.

3- If an independent variable in a multiple linear regression model is an exact linear combination of Error term, the model suffers from the problem of.

a)Perfect collinearity, b) Homoscedasticity, c) Heteroscedasticity, d)Autocorrelation.

4-When the residuals are correlated you have:

a) Mullticolinearity , b) Homoscedasticity, c) Residuals, d)Autocorrelation

5- Which of the following method used to detecting Autocorrelation Problem.

a) Spearman rank correlation , b) Durbin Watson test, c)GLS method , d) Cline method.

Q2// From the following data, test **heteroscedasticity** problem between errors variances by using **Goldfeld – Quandt** test, if you know (**15 marks**)

***n* = 10 , Tab F(0.05, 2, 2) = 19**

e_i	-2	3	-4	1	-5	6	7	-8	11	-9

Q3// what are the **reasons** or sources of autocorrelation problem. **(15 marks)**

Q4// From the following information test **Autocorrelation** Problem Using **Durbin-Watson** test if you know the tabulated value for (D.W) under significant level 5% and degrees of freedom (1,9) are: dL =0.824 , dU = 1.032. (**20 marks**)

x_i	6.3	6	5.9	3	5	6.3	5.6	3.6	2.5	2.9
y_i	2.7	4.7	8.75	7.78	6.18	9.5	5.14	4.76	16.7	15.7
e_i	-2.38	-0.97	2.88	-3.75	-1.44	4.42	-1.31	-5.6	4.19	3.97

Good Luck

Lecturer
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