Stat 2216 Spring 2010

Statistical Methods R. Claycombe

Second Exam

Write all answers in your blue book and show all work there. Return your exam and printout(s) in your blue book.

30 pts.

1) Suppose we have the following data on variables A, B and C.

A	B	C
1	2	3
2	5	8
3	7	9
4	9	11

a) Find the regression coefficients for model where A is a function of B.

b) Find the standard error of the estimate for this model.

c) Find the standard error of the slope and use it to test for the effect of B on A. Show all steps to the test and let $\alpha = .05$.

d) Find r^2 and interpret it.

15 pts.

2) a) Now use the data in 1) to find the regression coefficients for model where A is a function of B and C. Do this by hand using the normal equations.

b) Find the adjusted R^2 for this model and interpret it.

25 pts. **Computer Problem**

3) a) Open the Enquirer data in the Chap 15 folder with SPSS and run a regression where the % passed is a function of the % on ADC, the % on free lunch and the median income.

b) Describe the significance of these variables.

c) Run the regression again but this time only on cities in Lucas county. Ask for collinearity diagnostics and interpret them. What happened to the R^2 compared to part b? Explain why this was.

15 pts.

4) Sketch a scatter diagram for residuals that illustrates an econometric problem. Explain your sketch.

I have neither given nor received unfair aid on this test nor am I aware of anyone else who has.

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