Goodness of Fit - Quiz

Question 1

1/1 point (graded)

True or False: The formula for $R^2 = SSR/SST$.

a. True

b. False ✔

Explanation

The formula for R^2 is $1 - SSR/SST$. We define R^2 with the "1 minus" out in front so that a larger R^2 means that the fit is better (that more of the variation in Y is explained by variation in X).

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Question 2

1/1 point (graded)

$$(n-2)\frac{R^2}{1-R^2}$$

The expression above has an F-distribution under the null hypothesis. We use the expression above to test that hypothesis that:

a. $\beta_1 \neq 0, \ldots \beta_k \neq 0$

b. $\beta_1 \neq \ldots \neq \beta_k$

c. $\beta_1 = \ldots = \beta_k$

d. $\beta_1 = \ldots = \beta_k = 0$ ✔

Explanation

In addition to using R^2 as a basic measure of goodness-of-fit, we can also use R^2 as the basis of a test of the hypothesis that our coefficients are all zero. (This would mean that our regressors do not explain our dependent variable.)

The Multivariate Linear Model
due Nov 28, 2016 05:00 IST

Module 9: Homework
due Nov 21, 2016 05:00 IST

- Module 10: Practical Issues in Running Regressions, and Omitted Variable Bias
- Exit Survey

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✔ Correct (1/1 point)

Question 3

1/1 point (graded)

We should reject the hypothesis from question (2) when the expression above is:

a. Small

b. Large ✔

Explanation

The expression above will be large when R^2 is large. R^2 is large when our SSR is much smaller than our SST, meaning that the variation in X explains a lot of the variation in Y. This would suggest that the coefficients β on our X's are non-zero with high probability.

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Discussion

Topic: Module 9 / Goodness of Fit - Quiz

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