

MITx: 14.310x Data Analysis for Social Scientists

Heli



- Module 1: The Basics of R and Introduction to the Course
- Entrance Survey
- Module 2:

 Fundamentals of
 Probability, Random

 Variables, Distributions,
 and Joint Distributions
- Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates
- Module 4: Joint,
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Module 9: Single and Multivariate Linear Models > The Linear Model > Goodness of Fit - Quiz

Goodness of Fit - Quiz

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Question 1

1/1 point (graded)

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

a. True

● b. False

Explanation

The formula for \mathbb{R}^2 is 1-SSR/SST. We define \mathbb{R}^2 with the "1 minus" out in front so that a larger \mathbb{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)

- Module 5: Moments of a Random Variable,
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 Intro to Regression
- Module 6: Special
 Distributions, the
 Sample Mean, the
 Central Limit Theorem,
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- Module 7: Assessing and Deriving Estimators - Confidence Intervals, and Hypothesis Testing
- Module 8: Causality,
 Analyzing Randomized
 Experiments, &
 Nonparametric
 Regression
- Module 9: Single and Multivariate Linear Models

The Linear Model

due Nov 28, 2016 05:00 IST

Ø.

Question 2

1/1 point (graded)

$$(n-2)rac{R^2}{1-R^2}$$

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

$$\circ$$
 a. $eta_1
eq 0, \ldots eta_k
eq 0$

$$lacksquare$$
 b. $eta_1
eq \ldots
eq eta_k$

$$\circ$$
 c. $eta_1=\ldots=eta_k$

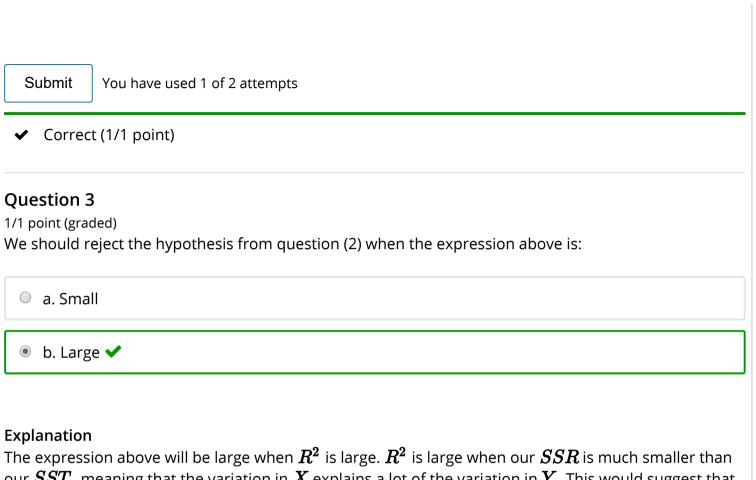
$$ullet$$
 d. $eta_1=\ldots=eta_k=0$ 🗸

Explanation

In addition to using \mathbb{R}^2 as a basic measure of goodness-of-fit, we can also use \mathbb{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 Ø. due Nov 28, 2016 05:00 IST Module 9: Homework Ø. due Nov 21, 2016 05:00 IST Module 10: Practical

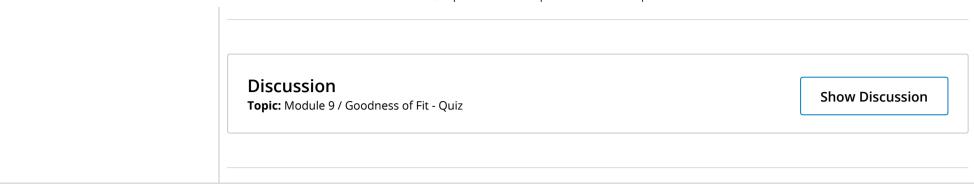
- **Issues in Running** Regressions, and **Omitted Variable Bias**
- Exit Survey



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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Correct (1/1 point)



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