Understanding Least Squares Estimation - Quiz

Question 1

1/1 point (graded)

Match each of these definitions with the correct terms:

a. $\hat{\beta}_0 + \hat{\beta}_1 X$

Regression line (fitted line) ✔ **Answer:** Regression line (fitted line)

b. $\hat{\beta}_0 + \hat{\beta}_1 X_i$

Fitted value Yi ✔ **Answer:** Fitted value Y_i

c. $Y_i - \hat{Y}_i$

Residual (ϵ^) ✔ **Answer:** Residual $(\hat{\epsilon})$

Explanation

The residual $(\hat{\epsilon}\,)$ is the deviation from an ordered pair (x, y) and the fitted regression line. The regression line is also known as the fitted line and is defined above as (b). The fitted value (Y_i) is the value of Y associated with a particular value X_i on the regression line.

- Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression
- Module 6: Special Distributions, the Sample Mean, the Central Limit Theorem, and Estimation
- 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

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 2

1/1 point (graded)

True or False: $\boldsymbol{E}[\hat{\beta}_0] = \beta_0$

- a. True ✔
- b. False

Explanation

As mentioned during our discussion of least squares estimators, one of the favourable properties of OLS is that the estimators are unbiased. This means that $\boldsymbol{E}[\hat{\beta}_0] = \beta_0$ and $\boldsymbol{E}[\hat{\beta}_1] = \beta_1$.

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

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

Discussion

Topic: Module 8 / Understanding Least Squares Estimation - Quiz

Show Discussion