Andrew Plum

Professor Hickman

Econ 453

10/11/2023

Exam 1 Review

Start time: 10:45 pm

End time:

1. A then C
2. D then B
3. B then C then A
4. C then D then B then A
5. B
6. A then C
7. A
8. E then D then C
9. B
   1. For every increase of $1000 to income for a household, household expenditure on clothing increases by $25. The household starts spending on clothing after earing $20,000 in income. It does not make sense that people would only start spending money on cloths past $20,000. I would imagine they would spend some money. I also think the relationship that exists would be more of a variable rate which would mean it is better represented by a quadratic equation and not a linear equation.
   2. Prediction: y = -0.5 + 0.025(110) = -0.5 + 2.75 = 2.25 so they spend $2,250 on clothing

Residual: 5 – 2.25 = 2.75 so $2,750

* 1. Two explanatory variables that I think could be added are hours worked each day and discretionary income. I would think as hours worked each day increase, the amount of money spent on clothing will decrease because the money will be more valuable to them, so they’ll want to spend it wisely. And as discretionary income increases, spending on clothing will increase.
  2. The variance of the residuals is supposed to be constant throughout the residual graph. As people’s income (and discretionary income) increases, some people are more inclined to spend more of their income on clothes than others. This leads to a the heteroskedasticity of the residual graph.

Concepts to still cover:

1. Parabola coefficients and shape
   1. Suppose we believe that the relationship between X and Y is as shown in the graph below. If we estimate a model as: ( ) 2 Y = β 0 + β1X + β 2 X , what signs do you expect for each of the coefficients? a. 0 ˆ 0, ˆ β1 < β 2 > b. 0 ˆ 0, ˆ β1 < β 2 < c. 0 ˆ 0, ˆ β1 > β 2 > d. 0 ˆ 0, ˆ β1 > β 2 < 0
2. Correlation matrix
3. Chat GPT compare answers