Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

- Goodness of fit measure, Anova and hypothesis testing Part - 1
- Goodness of fit measure, Anova and hypothesis testing Part - 2
- Goodness of fit measure, Anova and hypothesis testing Part - 3
- Goodness of fit measure, Anova and hypothesis testing Part - 4
- Goodness of fit measure, Anova and hypothesis testing Part - 5
- Introduction to Econometrics : Week 3 Feedback Form
- Quiz : Assignment 3
- Lecture materials

Week 4

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Assignment 3

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

Due on 2021-02-10, 23:59 IST.

Click here to download the useful data for Assignment 3

Use the data file "consumption income" to perform a regression analysis in STATA where consumption depends on income. Based on the results obtained answer questions 2-5.

1) The value of the intercept (α) is *1 point*

- 24.54
- -24.54
- 24.45
- -24.45
- 24.35

No, the answer is incorrect.
Score: 0
Accepted Answers:
24.45

2) The value of the slope ($\hat{\beta}$) is *1 point*

- 0.601
- 0.509
- -0.509
- -0.601
- 0.519

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.509

3) The value of the slope ($\hat{\beta}$) implies that *1 point*

- For one unit change in income, consumption on an average changes by ($\hat{\beta}$) units
- For one unit change in income, income changes by ($\hat{\beta}$) units
- For one unit change in income, consumption changes by ($\hat{\beta}$) units
- For one unit change in consumption, income on an average changes by ($\hat{\beta}$) units
- There is no relationship between income and consumption

No, the answer is incorrect.
Score: 0
Accepted Answers:
For one unit change in income, consumption on an average changes by ($\hat{\beta}$) units

4) How much is the variation in the dependent variable explained by the independent variable in the above model? *1 point*

- 50%
- 60%
- 51%
- 24%
- 96%

No, the answer is incorrect.
Score: 0
Accepted Answers:
96%

5) In double log model, elasticity of Y with respect to X is given by *1 point*

- β_2
- $\beta_2(X/Y)$
- $\beta_2 X$
- $\beta_2(1/Y)$
- $\beta_2 Y$

No, the answer is incorrect.
Score: 0
Accepted Answers:
β_2

Given below is the ANOVA results for a two variable regression model for a sample of 10 observations

$Source$	SS	df	MSS
$Model$	8552.7272	-	-
$Residual$	-	-	-
$Total$	8890	-	

6) The value of residual sum of squares is *1 point*

- 337.2727
- 337.2827
- 338.2772
- 338.2727
- 337.2772

No, the answer is incorrect.
Score: 0
Accepted Answers:
337.2727

7) Degrees of freedom of the Model, residual and total is given respectively as *1 point*

- (9,1,8)
- (1,9,8)
- (8,9,1)
- (9,8,1)
- (1,8,9)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(1,8,9)

8) MSS of the model is *1 point*

- 8552.7272
- 8552.700
- 1069.0909
- 950.303
- 855.2727

No, the answer is incorrect.
Score: 0
Accepted Answers:
8552.7272

9) MSS of the source of variation due to RSS is *1 point*

- 33.7272
- 337.2727
- 42.1590
- 37.4747
- 339.2727

No, the answer is incorrect.
Score: 0
Accepted Answers:
42.1590

10) F-statistics of the model is equal to *1 point*

- 201.87
- 202.87
- 203.90
- 202.78
- 201.78

No, the answer is incorrect.
Score: 0
Accepted Answers:
202.87

Use the data set "capital-labour" where output is a function of capital and labour. Transform the model to a lin-log model to perform a regression analysis. Use the results obtained to answer the following questions 11 and 12

11) For one percent change in labour, output changes by *1 point*

- 33607.36 units
- 336.07 units
- 33607.36 %
- 336.07 %
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
336.07 units

12) For one percent change in capital, output changes by *1 point*

- 12059.19 units
- 120.59 units
- 12059.19 %
- 120.59 %
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
120.59 units

Use the same data set "capital-labour" where output is a function of capital and labour. Transform the model to a log-lin model to perform a regression analysis. Use the results obtained to answer the following questions 13 and 14.

13) For a unit change in labour, output changes by *1 point*

- 0.0065 units
- 0.0065%
- 0.65 units
- 0.65%
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.65%

14) For a unit change in capital, labour changes by *1 point*

- 0.0016 units
- 0.0016%
- 0.000016 units
- 0.000016%
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.0016%

Use the same data set "capital-labour" where output is a function of capital and labour. Transform the model to a log-log model to perform a regression analysis. Use the results obtained to answer the following questions 15 and 16.

15) The percentage change in output for a percentage change in labour is *1 point*

- 1.49%
- 1.49 units
- 149%
- 149 units
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
1.49%

16) The percentage change in output for a percentage change in capital is *1 point*

- 0.48%
- 0.48 units
- 48%
- 48 units
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.48%

17) The t-statistic is given by *1 point*

- $t = \frac{(\hat{\beta}_0 - \hat{\beta})}{S.E(\hat{\beta})}$
- $t = \frac{(\hat{\beta}_0 - \hat{\beta})}{S.E(\hat{\beta}_0)}$
- $t = \frac{(\hat{\beta} - \beta_0)}{S.E(\hat{\beta})}$
- $t = \frac{(\hat{\beta} - \beta_0)}{S.E(\hat{\beta}_0)}$
- $t = (\hat{\beta} - \beta_0)/S.E(\hat{\beta})$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$t = \frac{(\hat{\beta} - \beta_0)}{S.E(\hat{\beta})}$

18) Accepting a false hypothesis results in *1 point*

- Type I error
- Type II error
- Structural error
- Hypothesis error
- Both B and C

No, the answer is incorrect.
Score: 0
Accepted Answers:
Type II error

19) Suppose that you want to test the claim made by an accountant that he is able to complete a standard tax return in under an hour. For a random sample of 24 tax returns, the accountant averages 63.2 minutes with standard deviation of 7.7 minutes. The appropriate null and alternative hypothesis is *1 point*

- $H_0 : \mu = 60$ and $H_1 : \mu^2 = 60$
- $H_0 : \mu = 0$ and $H_1 : \mu > 0$
- $H_0 : \mu = 60$ and $H_1 : \mu < 60$
- $H_0 : \mu > 60$ and $H_1 : \mu^2 \leq 60$
- $H_0 : \mu = 60$ and $H_1 : \mu \geq 60$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$H_0 : \mu = 60$ and $H_1 : \mu < 60$

20) Which of the following is/are correct statement in the context of hypothesis testing? *1 point*

- The power of a test increases as the Type II error probability does
- It is not possible to decrease both Type I and Type II error at the same time
- The significance level is always equal to the probability of Type II error
- A test is significant if it fails to reject the null hypothesis
- All the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
It is not possible to decrease both Type I and Type II error at the same time