Unit 9 - Week 8

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

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Week 8

- Maximum Likelihood Estimation- I
- Maximum Likelihood Estimation-II
- LOGISTIC REGRESSION- I
- LOGISTIC REGRESSION-II
- Linear Regression Model Vs Logistic Regression Model
- Important data files
- Quiz : Assignment 8
- Solution : Assignment 8

Week 9

Week 10

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Week 12

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Assignment 8

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-25, 23:59 IST.

1) Likelihood contribution (L_i) is defined as – *1 point*

- The height of the observed data
- The width of the observed data
- The height of the density function
- The width of the density function

No, the answer is incorrect.
Score: 0
Accepted Answers:
The height of the density function

2) Likelihood function (L) is defined as – *1 point*

- Summation of likelihood contribution to all the observation
- Multiplication of likelihood contribution to all the observation
- Both (a) and (b)
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Multiplication of likelihood contribution to all the observation

3) Suppose that we have the data with y = 14 and x= 8 and we are interested in estimating the model: y = β_0+β_1 x+u ; Assume that u follows the normal distribution with mean 0 and variance σ2 and the density function of u is u=1/√(2πσ^2) e^(⟦-u⟧ ^2/(2σ^2)). What is the likelihood contribution for the given dataset? *1 point*

- 1/√(2πσ^2) e^(⟦-(14-β_0-8β_1)⟧ ^2/(2σ^2))
- 1/√(2πσ^2) e^(⟦(14-β_0-8β_1)⟧ ^2/(2σ^2))
- 1/√(2πσ^2) e^(⟦-(8-β_0-14β_1)⟧ ^2/(2σ^2))
- 1/√(2πσ^2) e^(⟦(8-β_0-14β_1)⟧ ^2/(2σ^2))

No, the answer is incorrect.
Score: 0
Accepted Answers:
1/√(2πσ^2) e^(⟦-(14-β_0-8β_1)⟧ ^2/(2σ^2))

4) Which python module that provides classes and functions for the estimation of many different statistical models, as well as for conducting statistical tests, and statistical data exploration – *1 point*

- statsmodels
- statsmodels.api
- Both (a) and (b)
- None of these

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

5) The purpose of G-statistics and Wald tests in logistic regression is – *1 point*

- To check the overall significance of the model
- To verify the overall significance of the model and an individual independent variable's significance respectively
- To check individual independent variable's efficiency and overall accuracy of the model respectively
- To check each independent variable's significant contribution to the model

No, the answer is incorrect.
Score: 0
Accepted Answers:
To verify the overall significance of the model and an individual independent variable's significance respectively

6) What does the odds ratio measures? *1 point*

- The impact on the odds of a one-unit increase in only one of the independent variable
- The impact on the odds of a one-unit increase in the only dependent variable
- The impact on the odds of a one-unit increase in more than one of the independent variables
- Both (a) and (c)

No, the answer is incorrect.
Score: 0
Accepted Answers:
The impact on the odds of a one-unit increase in only one of the independent variable

7) Select the correct statement- *1 point*

- The odds ratio for each independent variable is computed while holding all the other independent variables constant
- In logistic regression error term follows the binomial distribution
- In logistic regression error term follows Normal distribution
- Both (a) and (b)

No, the answer is incorrect.
Score: 0
Accepted Answers:
Both (a) and (b)

8) The significance of each parameter's contribution is tested with the help of – *0 points*

- Z- test
- Wald Test
- G-statistics
- Both (a) and (b)

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

9) Choose the correct statement *1 point*

- In logistic regression dependent variable must be continuous data
- In logistic regression dependent variable must be categorical data
- In logistic regression, both dependent and independent variables must be categorical data
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
In logistic regression dependent variable must be categorical data

10) Which estimation technique used by the logistic regression model? *1 point*

- Maximum Likelihood Estimates (MLE)
- Ordinary Least Square methods (OLS)
- G – Statistics and Wald test
- Z- test

No, the answer is incorrect.
Score: 0
Accepted Answers:
Maximum Likelihood Estimates (MLE)