Assignment 9 (Week 9)

Due on 2016-03-26, 19:29 IST

Submitted assignment

1) In multiple linear regression (MLR), the remedy against heteroscedasticity is- ***2 points***

- to transform dependent and independent variables, y and x, and to use Box-Cox method
- to transform dependent variable, y, and to use Box-Cox method
- All of these
- None of these

2) In multiple linear regression (MLR), the remedy against non-linearity is- ***1 point***

- to transform y, x, or both
- to transform x only
- to transform y only
- none of these

3) In MLR, a good leverage point: ***1 point***

- distorts the regression plane
- not distorts the regression plane
- None of these

4) Choose the correct option in defining multi-collinearity in multiple linear regression: ***1 point***

- (•) Independent variables are not truly independent
- ( ) Dependent variables are not truly dependent
- ( ) Both of these
- ( ) None of these

5) Choose the correct relation between tolerance statistics (T), and variance inflation factor (VIF): ***1 point***

- (•) T = 1/(VIF)
- ( ) T = 0.5VIF
- ( ) T= VIF
- ( ) None of these

6) Choose the correct value of VIF for which there exists high collinearity: ***1 point***

- ( ) VIF < 10
- ( ) VIF = 5
- (•) VIF ≥ 10
- ( ) None of these

7) Choose the correct equation to define the multi-collinearity number (MCN): ***1 point***

- ( ) MCN = Smallest Eigen value/ Largest Eigen value
- (•) MCN = Largest Eigen value/ Smallest Eigen value
- ( ) MCN = Largest Eigen value/ (Largest Eigen value + Smallest Eigen value)
- ( ) None of these

8) In a MLR study, suppose n = 50 observations were collected. The sum square total (SST) = 7500, and sum square of error (SSE) = 1501. The calculated F-value is- ***3 points***

- ( ) 45.56
- (•) 61.28

- 43.56
- None of these

9) Let $y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$. A sample of size n = 50 were collected. Compute the correct t-statistic values for $\hat{\beta}_1, \hat{\beta}_2, \hat{\beta}_3$ for the data given below, where , $\hat{\beta}_1, \hat{\beta}_2, \hat{\beta}_3$ are the estimated value of co-efficient of regression. Choose the correct independent variable(s), which is/are significant (α = 0.05): ***4 points***

Variables	Coefficients	Standard Error (SE)
X1	1.3	0.75
X2	2.65	0.43
X3	0.81	0.83

- X_1
- X_2
- X_3
- $X_1 and X_3$