SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF ECONOMICS

INTERNAL TEST (Academic Year 2023-24)

Name of the Course : B.A.(H) Economics   Semester: …4..

Name of the Paper   : Introductory Econometrics   Faculty Name   : Nikita Gupta

Duration   : 40 minutes   Maximum Marks: 12

Date of Test   : 03.05.2024

Q1   a) Define multicollinearity. Why could t-ratios be insignificant in presence of high multicollinearity?   (3)

        b) Data was collected on 344 corporate executives to find out the effect of MBA degree and work experience on their salary. The following model was estimated:

$$Y_i = 2.3501 + 3.6306 D_{1i} - 2.6354 D_{2i} + 0.8527 X_i + 1.634 (D_1 * X)_i$$

t =   (1.263)   (2.1805)   (- 3.457)   (7.605)   (2.98)

$R^2 = 0.8968$

Y: Annual Income in Lakhs of Rupees

D_1 and D_2 are MBA and gender dummies respectively

X: Work experience in years

D_1 = 1 if one has MBA degree

     = 0 otherwise

D_2 = 1 for a female executive

   = 0 for a male executive

  i. Write the regression equations for female MBA executives and male MBA executives separately.

  ii. Find the mean income level for the reference category and interpret it.

 iii. Test the statistical significance of differential intercept coefficient between female MBA executives and Male MBA executives at 5% level of significance.

 iv. Interpret the coefficient of $D_1 * X_i$.   (6)

Q2   Describe the assumptions of the White's test for heteroscedasticity.   (3)

Nikita

Faculty Signature: Nikita Gupta