

BECE-142 Applied Econometrics
Tutor Marked Assignments

Course Code: BECE-142
Assignment Code: Asst /TMA /2025-26
Total Marks: 100

Assignment 1

Answer the following Descriptive Category questions in about 500 words each. Each question carries 20 marks. Word limit does not apply in case of numerical questions.

1. Explain with illustrations the various steps involved in econometric methodology. What are the consequences of omitting a relevant explanatory variable in a regression model? (20)
2. (a) A research study intends to examine the impact of self-employment scheme for rehabilitation of manual scavengers. Suggest an appropriate research design to undertake such a study giving reasons the kind of research design you have suggested. (10)
- (b) Given the following model:

$$Y_i = \beta_1 + \beta_2 D_i + U_i$$

Where $D_i=0$ for the first 20 observations and $D_i=1$ for the remaining 30 observations. You are also told that $\text{var}(u_i^2)=300$.

- (a) How would you interpret β_1 and β_2 ?
- (b) What are the mean values of the two groups? (10)

Assignment 2

Answer the following Middle Category questions in about 250 words each. Each question carries 10 marks. Word limit does not apply in case of numerical questions.

3. What do you mean by the term 'lags' in the context of economic data? Explain the various methods to estimate the distributed lag models. (10)
4. Distinguish between ordinary least square method and indirect least square method of estimation. Specify the conditions under which indirect least method is applied. (10)
5. Consider the following Keynesian model of income determination (10)

$$C_t = \beta_{10} + \beta_{11} Y_t + U_{1t}$$

$$I_t = \beta_{20} + \beta_{21} t + \beta_{22} Y_{t-1} + U_{2t}$$

$$Y_t = C_t + I_t + G_t$$

Where,

C= Consumption expenditure

I=Investment expenditure

Y=Income

G=Government expenditure

G_t and Y_{t-1} are assumed predetermined

- (a) State the reduced form equations and determine which of the preceding equations are identified.
- (b) Which method will you use to estimate the parameters of the over identified equation and of the exactly identified equation? Justify your answer.

Assignment 3

Answer the following Short Category questions in about 100 words each. Each question carries 6 marks.

(6×5=30)

6. What is panel data? Explain the main advantages of panel data over 'pooled data'. (6)
7. Explain with illustration the computation process of fixed effect estimation method. (6)
8. Differentiate between type I and type II errors. Which among them is relatively a serious one? (6)
9. Distinguish between any three of the following: (2× 3 = 6)
 - (i) Logit Model and probit model.
 - (ii) Fixed effect Model and Random effect model.
 - (iii) One way ANOVA and two way ANOVA.
 - (iv) Heteroscedasticity and homoscedasticity.
10. Write short note on any two of the following: (3× 2 = 6)
 - (i) Autocorrelation.
 - (ii) Empirical Research.
 - (iii) Statistical function.
 - (iv) Multicollinearity.