Assignment-1

Course Instructor: Assoc Prof. Md. Siddikur Rahman

1. First enter the United Airlines Aircraft Operating Statistics and then select a sample of size, n=last two digits of your ID and answer the exercises.

   i) Select an appropriate class interval and organize the "Salaries and Wages" into a frequency distribution.

   ii) Compute the Mean, Median, Mode, Standard Deviation, Variance, Quartiles, 9th Decile, 10th Percentile and Range of "Salaries and Wages" from the raw data of your sample and interpret.

   iii) Develop a histogram (Using the question "i") for the variable "Grouped Salaries".

   iv) Develop a Pie chart and a Bar diagram for the variables "Maintenance" and "Load factor".

   v) Develop a Box plot for the variables "Purchased Goods", "Aircraft Ownerships" and "Daily Utilization per Aircraft".

   vi) What information can you give from these plots?

Note: Comment on all your findings, charts, and diagrams.

2. Refer to the United Airlines Aircraft Operating Statistics data, which reports information on the homes sold in Dhaka, Bangladesh, last year. Use the Salaries and Wages as the dependent variable and determine the regression equation with Pilot Training, Benefits and Payroll Taxes, Per Diem/ Personnel, Maintenance, Aircraft Ownership, Indices, and Daily Utilization per Aircraft as independent variables.

   i) Write out the regression equation. Discuss each of the variables.

   ii) Determine the value of R-square. Interpret.

   iii) Determine the multiple Standard error of the estimate and interpret.

   iv) Develop a correlation matrix. Which independent variables have weak or strong correlations with the dependent variable?

   v) Conduct a global test on the set of independent variables. Interpret.

   vi) Conduct a test of the hypothesis on each of the independent variables. Would you consider deleting any of the variables? If so, which one?

   vii) Write down the new multiple regression equation.