

## **DOE Practice File**

- 1. An full factorial experiment with 16 runs is conducted to find out the factors impacting the time taken by data entry operator to complete a particular documentation. There are 3 factors:
  - i. Factor 1 Software = Current or Alternate
  - ii. Factor 2 Lighting = Low or High
  - iii. Factor 3 Keyboard = Current keyboard or Ergonomic Keyboard
  - a. Why there are 16 runs for 3 factors?
  - b. File : DOE Practice File.xls. Find out the significant factors and interactions
- 2. A business owner is very eager to conduct design of experiments to identify factors that impact the productivity is his operators.

She has gathered 15 factors that can impact the productivity from a 'Fish-bone' diagram.

- a) Further to screen these factors, what experimental design will you propose keeping in mind the lesser runs, better it is!
- b) What will be resolution, number of runs, how many main factors and what level of interactions can be studied?
- c) What may be your key concerns?
- d) To address the concerns what is the overall strategy that you propose to identify the critical factors by using all the tools that you have learnt in the BB Curriculum so far.
- 3. A handset service center wishes to study its new marketing campaign. They seek to upsell extended warranty at end the time of sale. Out of 1000 customers, following are the number customers who opted for extended warranty.

There are 4 factors and 2 levels each in the experiment

- Factor A Location of Service Center Urban or Rural
- Factor B Time of Campaign Month Beginning or Mid-Month
- Factor C Nature of Transaction Financial or Non-financial
- Factor D Gender of Customer Male or Female

Following number of customers who opted for extended warranty, listed in the Standard Order:

456, 476, 612, 599, 345, 546, 725, 482