DATA COLLECTION

Statistics is all about data; collecting it, analysing it, interpreting it and presenting it. As such we can see that the first core step in statistics is proper data collection.

Data collection is the technique of gathering and measuring information on particular variables in a systematic manner, which then enables one to answer relevant questions, and evaluate outcomes.

If data is wrongly taken then the proper aim for data analysis would not be achieved. As such data must be collected properly using the proper method or technique.

Population versus Sample

The term 'population' is used in statistics to represent all possible measurements or outcomes that are of interest to us in a particular study. Example: automobiles with four wheels.

The term ‘sample’ refers to a portion of the population that represents the population from which it was selected. Example: 20 sample automobiles from each make (e.g. GM, Ford, Toyota, Honda, etc.).

The Concept of Sampling

Sampling is a statistical procedure that is concerned with the selection of the individual observations; it helps us to make statistical inferences about the population.

In sampling, we assume that samples are drawn from the population, and that sample means and population means are equal. A population can be defined as a whole that includes all items and characteristics of the research taken into study. However, gathering all this information is time consuming and costly. We therefore make inferences about the population with the help of samples. Samples are best collected randomly.

Quantitative Data Collection

There are a variety of techniques that can be used to collect data in a quantitative research study. However, all of them are geared towards numerical collection.

These numerical data can be collected by means of: observation, interview, questionnaires, scales, physiological measurement, etc.

In essence, quantitative data can be taken through counting, and measurement for discrete and continuous quantitative data respectively.

Qualitative Data Collection

As it is that qualitative data is descriptive data, collecting it's kind of data usually involves:

i. Direct interaction with individuals on a one to one basis, or
ii. Direct interaction with individuals in a group setting.

The main methods for collecting qualitative data are:

i. Individual interviews
ii. Focus groups
iii. Observations
iv. Action research