

→ Concept of Central Tendency :-

Statistical averages or measurement of central tendency are the important tools of statistical analysis. Averages are defined as "measures of central tendency" because they describe the tendency of items to a group around the middle in a frequency distribution of numerical values.

→ Measures of Central Tendency :-

An average reduces the large no. of observations to one figure. Averages are defined as 'measures of central tendency' because they describe the tendency of items to a group around the middle in a frequency distribution of numerical values. This tendency of items to a group around the middle is a characteristic which lends itself of measurement and the measurement of that tendency is called 'average'.

→ A/c to Simpson and Kafka ; "A measure of central tendency is a typical value around which other figures congregate".

→ A/c to C.T. Clark and L.L. Schkade, "Average is an attempt to find one single figure to describe whole of figures".

→ Importance of Average :-

The average occupy an important place in statistics. Many other techniques of statistical analysis depend upon this measure. This is the reason for "Dr. Bowley" defining statistics "as the science of average". It is because 'average' summarise the salient features of most data so usefully that they are widely employed in statistics. J.K. Keynes observes, "The importance of the taking of average in statistical investigation can not be exaggerated this is so fully realised by some writers that one of the definitions proposed for is 'Statistics is the science of average'". Average are widely used than any other statistically measures, because of their many applications. Prof. L.C. Tippet observes, "The average has its limitations, but provided they are recognised, there is no single statistical quantity more valuable, than an average".

→ properties and functions of Averages:

An average is the precise and simple indicator of the central tendency of a group, as it represents the whole group. The functions of an average are:

(i) To present the salient features of a mass of complex data:

It is difficult to assimilate a mass of detailed information expressed in numerical form, even if it has been substantially reduced by tabulation. An average makes it convenient to express the data in more abbreviated numerical form, yet in such a way that the salient features of the tables are clearly brought out. An average reduces a mass of data into a single typical figure to enable one to draw a general conclusion about the characteristics of the phenomena under study. It is difficult to generalise anything from the ages of 63 cricketers of Indian people, but if it is said that the average age of an Indian is 62 years, one can draw conclusions about health conditions of the people.

(ii) To facilitate comparison: An average provides a 'common denominator' for comparing one set of data with others, and conclusions can be drawn about the characteristics of the separate sets of data.

If the average monthly sales of Department A are compared with the average monthly sales of Department B, a quick and easy comparison of the sales of the two departments can be made.

(iii) To know about universe from a sample: Average also help to obtain a picture of a complete group by means of sample data. In statistical enquiries, very frequently, sample method is used. The mean of a sample gives a good idea about the mean of the population.

(iv) To have mathematical relationship: When it is desired to trace the mathematical relationship b/w different groups or classes, an average becomes essential. Simply, saying that expected life an average Englishman is more than that of an average Indian, is something abstract and vague. Definitely can only come if expected lives are expressed in averages.

(v) To help in decision-making: In the making of decision or in the process of experimentation and research it is often of utmost importance to know the average values of a variable. Ex: - A sales manager may need to know the average no. of calls made per day by salesman in the field. A railway officer will require information about the average no. of passengers carried by rails on the various passenger runs. Averages are valuable in setting standards, estimating and planning and other managerial decision areas.