MEASURES OF CENTRAL TENDENCY

(Theoretical aspect)

MEDIAN

The median is a point on a scale which divides the distribution into equal halves. It is that value of the variable which divides the group into two equal parts, one part comprising of all the values greater than the other, all values less than the dividing point. Median can also be defined as the 50^{th} percentile, which is the point that divides the group into fifty-fifty in each half. It is the middle value in the distribution when scores are arranged in magnitude. As against mean, which is based on all the scores in the distribution, the median is only positional average, i.e.it depends upon the position occupied in the frequency distribution. It is also known as counting average. It is determined by arranging the scores in order of size and counting upto (or down to) the midpoint of the set of scores.

Its value is calculated in two ways:

1. Calculation through ungrouped data, and

2. Calculation through grouped data

Merits of Median

1. It is rigidly defined.

2. It is easy to compute and understandable for every individual.

3. It is not affected by extreme observations.

4. It can be sometimes located by making simple observation.

5. It can be used with qualitative characteristics which cannot be measured quantitatively.

6. It is not affected if any of extreme values is missing provided total number of values is known.

7. It is used when exact midpoint of distribution is desired.

8. It can be calculated graphically

9. It can be computed while dealing with a distribution of open-ended class intervals.

10. In skewed distribution, where arithmetic man will be distorted by extreme values, the median is the most useful.

Demerits of Median

1. It is not suitable for further mathematical treatment.

2. It is less stable than mean.

3. It is affected by sampling fluctuations.

4. In even number, we estimate it by taking an average of two middle terms. We cannot estimate the value directly.

5. It is erratic if the number of scores is small.

MODE

It is a value which occurs most frequently in a set of scores and around which the other scores cluster densely. It is a value at a point around which the scores tend to be heavily concentrated. It may be regarded as the most typical of a series of values. It is a score which occurs with greatest frequency. For example, the occurrence of a particular fashion at a place, the popularity of particular garment, the average size of shoes sold etc. can be estimated by calculating the values of mode.

Merits of Mode

1. It is easy to calculate the value of mode.

2. It is easy to understand.

3. It is not affected by extreme observations.

4. It is not essential to know all the items for calculating the value of mode.

5. It is most useful in everyday life i.e. in our talk, in finding typical type of fashion prevalent, in finding out types of clothes etc.

6. It is the quickest approximate method.

7. It can be calculated by mere observation also.

8. It can be calculated graphically.

9. It is useful for qualitative data.

Demerits of Mode

1. It is not rigidly defined.

2. It is ill defined if the maximum frequency is repeated, or when the distribution is irregular.

3. It is not stable for further mathematical treatment.

4. It is affected by fluctuations of sampling.

5. Since mode is the value corresponding to the maximum frequency, it is not based on all observations of the series.

6. It is very unstable.

7. It is of limited practical value.

8. It has little meaning unless the number of measurements under consideration is fairly large.

9. In some situations no single well-defined mode exists.