Mode.

Mode:The mode or model value of a distribution is that value of the variable for which the frequency is maximum. For continuous series, mode is calculated as, Mode

$$= l_1 + \left[\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right] \times i$$

Where, l_1 = The lower limit of the model class

- f_1 = The frequency of the model class
- f_0 = The frequency of the class preceding the model class

 f_2 = The frequency of the class succeeding the model class

i = The size of the model class.

Symmetric distribution:A symmetric is a symmetric distribution if the values of mean, mode and median coincide. In a symmetric distribution frequencies are symmetrically distributed on

both sides of the centre point



A distribution which is not symmetric is called a skewed-distribution. In a moderately asymmetric the interval between the mean and the median is approximately one-third of the interval between the mean and the mode i.e. we have the following empirical relation between them Mean – Mode = $3(Mean - Median) \Rightarrow Mode = 3 Median - 2 Mean$. It is known as Empirical relation.

Important Tips

Some points about arithmetic mean

- Of all types of averages the arithmetic mean is most commonly used average.
- It is based upon all observations.
- If the number of observations is very large, it is more accurate and more reliable basis for comparison.

Some points about geometric mean

- It is based on all items of the series.
- It is most suitable for constructing index number, average ratios, percentages etc.
- G.M. cannot be calculated if the size of any of the items is zero or negative.

Some points about H.M.

- It is based on all item of the series.
- This is useful in problems related with rates, ratios, time etc.
- A.M. \geq G.M. \geq H.M. and also $(G.M.)^2 = (A.M.)(H.M.)$

Some points about median

- It is an appropriate average in dealing with qualitative data, like intelligence, wealth etc.
- The sum of the deviations of the items from median, ignoring algebraic signs, is less than the sum from any other point.

Some points about mode

- It is not based on all items of the series.
- As compared to other averages mode is affected to a large extent by fluctuations of sampling,.
- It is not suitable in a case where the relative importance of items have to be considered.