Statistics - Points to Remember

1. Measures of Central Tendency:

(i) Mean

(ii) Median and

(iii) Mode

2. Methods of Finding Mean:

(i) Direct method

(ii) Shortcut Method

(iii) Step-deviation method

3. Arithmetic Mean:

If a variate X takes values x1, x2, …, xn with corresponding frequencies f1, f2, …, fn respectively, then the arithmetic mean of these values is given by

(i) $\bar{X}=1N\sum i=1nfixi$, where $N=\sum i=1nfi$

(ii) $\bar{X}=A+1N\sum i=1nfidi$, where $di=xi-A$ and the number A is called the assumed mean.

(iii)If $ui=xi-Ah$, i=1, 2, …, n. Then, $\bar{X}=A+h1N\sum i=1nfixi$

4. Median:

(i) The median is the middle value of a distribution i.e. the median of a distribution is the value of the variable which divides it into two equal parts.

(ii) The median of a grouped or continuous frequency distribution may be computed by using the following formula:

Median $=l+N2-Ff\times h$, where

l= lower limit of the median class.

f= frequency of the median class.

h= width of the median class.

F= cumulative frequency of the class preceding the median class and, $N=\sum i=1nfi$

(iii) Ogive(s) can be used to find the median of a frequency distribution.

5. Mode:

(i) Mode is the value of the variable which has the maximum frequency.

(ii) The mode of a continuous or grouped frequency distribution may be computed by using the following formula:

Mode $=l+f-f12f-f1-f2\times h$, where

l= the lower limit of the model class.

f= frequency of the model class.

h= width of the model class.

f1= frequency of the class preceding the modal class.

f2= frequency of the class following the modal class.

6. Relation Between Measures of Central Tendencies:

Three measures of central value are connected by the following relation: Mode=3 Median-2 Mean