Chapter 14 : STATISTICS

The three measures of central tendency are :

i. Mean

ii. Median

iii. Mode

• Mean Of grouped frequency distribution can be calculated by the following methods.

Direct Method

Where Xi is the class mark of the ith class interval and fi frequency of that class

Assumed Mean method or Shortcut method

Where a = assumed mean

And $d_i = X_i - a$

Step deviation method

Where a = assumed mean

h = class size

And $u_i = (X_i – a)/h$

• Median of a grouped frequency distribution can be calculated by

Where

l = lower limit of median class

n = number of observations

cf = cumulative frequency of class preceding the median class

f = frequency of median class

h = class size of the median class.

• Mode of grouped data can be calculated by the following formula.

Where

l = lower limit of modal class

h = size of class interval

f1 = Frequency of the modal class

fo = frequency of class preceding the modal class

f2= frequency of class succeeding the modal class

•Empirical relationship between the three measures of central tendency.

3 Median = Mode + 2 Mean

Or, Mode = 3 Median – 2 Mean

• Ogive

Ogive is the graphical representation of the cumulative frequency distribution. It is of two types:

(i) Less than type ogive.

(ii) More than type ogive

• Median by graphical method

The x-coordinated of the point of intersection of 'less than ogive' and 'more than ogive' gives the median.