

CHAPTER 14

Statistics

Graphical representation of cumulative frequency distribution:

We know that, graphical representation helps us in understanding the given data at a glance. In this topic, we shall represent the cumulative frequency distribution graphically, which is nothing but a s – shaped curve, known as cumulative frequency curve or an ogive.

There are two types of ogives.

- Less than ogive
- More than ogive

Drawing of less than ogive:

We plot the upper limits of the class intervals on the x – axis and their corresponding cumulative frequencies on the y – axis. Then we plot the points on a graph paper and join them by a free hand smooth curve. The curve we get is called a cumulative frequency curve (or) Less than ogive”.

Example:

The following distribution gives the daily income of 50 workers of a factory.

Daily income (in Rs.)	100 – 120	120 – 140	140 – 160	160 – 180	180 – 200
No. of workers	12	14	8	6	10

Convert the distribution above to a less than type cumulative frequency distribution and draw its ogive.

Sol.

Less than type cumulative frequency distribution table for the given data is as follows.

Age (In years)	Frequency	Cumulative frequency (C.f)
Less than 120	12	12
Less than 140	14	$12 + 14 = 26$
Less than 160	8	$26 + 8 = 34$
Less than 180	6	$34 + 6 = 40$
Less than 200	10	$40 + 10 = 50$

For less than type ogive, mark the upper limits on x – axis and cumulative frequencies on y – axis, by choosing a suitable scale.

Then plot the points (120, 12), (140, 26), (160, 34), (180, 40), (200, 50) and join them by a free hand to obtain a smooth curve as shown in figure.

