

Data Collection, Processing and Analysis Merits of the Mode, Growth of Population in India Part 5

Merits of the Mode

- It is the most typical value of a series. Mode can be located easily by the inspection and can be used by common people also.
- The occurrence of a few extreme values does not affect the mode, since it is the most typical value of series.

It is, however, not a significant measure of central tendency unless the number of observations is large. Both in case of uniform as well as skewed distributions, mode ceases to be a measure of central tendency.

Percentiles: Percentile is a measure which divides a series into 100 equal parts. It helps to understand various classes or categories that constitute a distribution. It is expressed as:

$$P_j = L_1 + \frac{P_j N / 100 - C}{f} \cdot h$$

Where, P is the percentile and N is the number of observations.

There are 99 percentiles, P_1, P_2, \dots, P_{99}

L_1 = The lower limit of the j^{th} percentile class, this is frequency of this class,

C = is the cumulative frequency of the class preceding the percentile class,

h = the magnitude of the j^{th} percentile class, and

f = the frequency of the percentile class.

Distribution of Monthly Income Among Households of a Locality.

	<u>Actual Number</u>	<u>Percentage Distribution</u>
Economically weaker sections (Below Rs.500)	112	56.0
Lower Income Group (500-999)	41	20.5

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Middle Income Group (1000-4999)	29	14.5
High Income Group (5000 and above)	18	9.0
Total	200	100 = 0

DISTRIBUTION OF MONTHLY INCOME AMONG HOUSEHOLDS OF A LOCALITY

Distribution of Per Capita Monthly Income of the Households of a Locality.

<u>Income group in Rs.</u>	<u>No. of Households Frequency</u>	<u>Cumulative Frequency</u>
Below 500	112	112
500-999	41	153
1000-4999	29	182
5000 and above	18	200
Total	200	

DISTRIBUTION OF PER CAPITA MONTHLY INCOME OF THE HOUSEHOLDS OF A LOCALITY

Let us calculate 60th percentile as P_{60} .

$$\text{Now, } P_{60} = 60 \times 200 \div 100 = 120$$

The 120 the income lies in the group 500–999 so that,

$$L_1 = 500, f = 41, C = 112, \text{ and } h = 500$$

$$P_{60} = 500 \left[\frac{120 - 112}{41} \right]$$

$$P_{60} = 500 \left[\frac{8}{41} \right]$$

$$P_{60} = 500 + 97.56$$

Ans. = Rs. 597.56

It means that 60 percent of the monthly incomes are below Rs. 597.56 and remaining 40 percent are above it.

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Cartographic Presentation of Data: The primary data collected through the field survey may be presented cartographically. The representation of data in visual form refers either to time, space, or to both. The cartographic presentation refers to the display of data by constructing graphs, diagrams and maps. The set of data is transformed into some form of figure which is used for illustrations. These figures could be graphic, geometric or theme specific maps. A brief discussion on different form of cartographic presentation is given here.

Graphical Presentation of Data: The graph refers to the arrangement of horizontal as well as vertical lines in inch or centimetre's divisions. These divisions are in an arithmetic sequence. A graph is used to locate the position of a given characteristic with respect to two variables represented by two axes of the graph. While ordinate or X axis represents independent variable, abscissa or Y axis represents the dependent variable. Due care is needed in the construction and interpretation of graphs. Theoretically, a phenomenon could be either increasing or decreasing or keeping constant trend of change across time. However, the observed facts may represent the change in a mixed fashion. For example, we can make use of simple line graph to represent the profile of Indian population during the past ten decades i.e. 1901 to 2001. Although we can see changes in the data, the presentation of the same on a line graph provides better comprehension.

Growth of Population in India (1901-2001).

(Population in million persons)

<u>Year</u>	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
<u>Pop.</u>	238.4	252.1	251.4	279.0	318.7	361.1	439.3	548.2	683.4	846.5	1028.8

GROWTH OF POPULATION IN INDIA (1901-2001)

 Growth of Population in India (1901 - 2001)

Image of Growth of Population in India (1901 - 2001)

Compound Graphs: These graphs are being used to represent two or more dependent quantities at the same time. Different quantities represented by curves are either superimposed on the top of each other or placed on the each other in a cumulative way. For example, compound graphs of male and female population or rural and urban population can be used to represent the two segments of population. Similarly, variables having three or four segments can also be represented through compound graph. For example, energy production (thermal, hydel, and nuclear), migration streams (rural-rural, rural-urban, urban-rural, and urban-urban) and religious composition of population (Hindus, Muslims, Sikhs, Christians, Jains, Buddhists, etc.) represent various segments of the variable.

Sex Ratio of Population of India

(Population in million)

Years	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
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Male	120.9	128.3	128.5	142.9	163.7	185.5	226.2	284.2	354.3	439.2	532.1
Female	117.4	123.7	122.7	135.9	154.9	175.5	212.9	264.1	307	407.1	496.4

SEX RATIO OF POPULATION OF INDIA

 Sex Composition of Population of India (1901 - 2001)

Sex Composition of Population of India (1901 - 2001)

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