What Is the Mode?

The mode is the number that appears most frequently in a data set. A set of numbers may have one mode, more than one mode, or no mode at all. Other popular measures of central tendency include the mean, or the average (mean) of a set, and the median, the middle value in a set.

Understanding the Mode

In statistics, data are distributed in various ways. The most often cited distribution is the classic normal (bell-curve) distribution. In this, and some other distributions, the mean (average) value falls at the mid-point, which is also the peak frequency of observed values. For such a distribution, this value is also the mode—the most frequently occurring value in the data.

Examples of the Mode

For example, in the following list of numbers, 16 is the mode since it appears more times in the set than any other number:

1. 3, 3, 6, 9, 16, 16, 16, 27, 27, 37, 48

A set of numbers can have more than one mode (this is known as bimodal if there are two modes) if there are multiple numbers that occur with equal frequency, and more times than the others in the set.

1. 3, 3, 3, 9, 16, 16, 16, 27, 37, 48

In the above example, both the number 3 and the number 16 are modes as they each occur three times and no other number occurs more often.

If no number in a set of numbers occurs more than once, that set has no mode:

1. 3, 6, 9, 16, 27, 37, 48

A set of numbers with two modes is bimodal, a set of numbers with three modes is trimodal, and a set of numbers with four or more nodes is multimodal.

Advantages and Disadvantages of the Mode

Advantages:

2. The mode is easy to understand and calculate.
3. The mode is not affected by extreme values.
4. The mode is easy to identify in a data set and in a discrete frequency distribution.

5. The mode is useful for qualitative data.
6. The mode can be computed in an open-ended frequency table.
7. The mode can be located graphically.

Disadvantages:

8. The mode is not defined when there are no repeats in a data set.
9. The mode is not based on all values.
10. The mode is unstable when the data consist of a small number of values.
11. Sometimes data have one mode, more than one mode, or no mode at all .

Mode

The mode refers to that value in a distribution, which occur most frequently. It is an actual value, which has the highest concentration of items in and around it. It shows the centre of concentration of the frequency in around a given value. Therefore, where the purpose is to know the point of the highest concentration it is preferred. It is, thus, a positional measure.

Its importance is very great in agriculture like to find typical height of a crop variety, maximum source of irrigation in a region, maximum disease prone paddy variety. Thus the mode is an important measure in case of qualitative data.

Computation of the mode

Ungrouped or Raw Data

For ungrouped data or a series of individual observations, mode is often found by mere inspection.

Example 8

Find the mode for the following seed weight

2 , 7, 10, 15, 10, 17, 8, 10, 2 gms

∴Mode = 10

In some cases the mode may be absent while in some cases there may be more than one mode.

Example 9

(1) 12, 10, 15, 24, 30 (no mode)

(2) 7, 10, 15, 12, 7, 14, 24, 10, 7, 20, 10

the modal values are 7 and 10 as both occur 3 times each.

Grouped Data

For Discrete distribution, see the highest frequency and corresponding value of x is mode.

Example:

Find the mode for the following

Weight of sorghum in

gms (x)

No. of ear head(f)

50 4

65 6

75 16

80 8

95 7

100 4

Solution

The maximum frequency is 16. The corresponding x value is 75.

∴ mode = 75 gms.

Continuous distribution

Locate the highest frequency the class corresponding to that frequency is called the modal c