Measures of Central Tendency

In statistics, central tendency is the descriptive summary of a dataset. Through the single value of the dataset, it reflects the centre of the data distribution. Moreover it does not provide information regarding individual data from the dataset, where it gives a summary of the dataset.

Measures of central tendency are —

ⓐ Mean ⓑ Median ⓒ Mode

→ **Mean** ⇒ The mean represents the average value of a dataset. It can be calculated by doing the individual sum of all the elements in the dataset divided by the total items present in the dataset.

Mathematically, $\bar{x} = \frac{x_1 + x_2 + x_3 + x_4 + \cdots + x_n}{n} = \frac{\sum_{i=1}^{n} x_i}{n}$

→ **Median**: When we arrange the elements present inside the dataset in a specific order either ascending or descending, and then find the middle item in this data, that middle value is known as the median.

When items are even in dataset

1, 2, 3, 4, 5, 6, 7, 8

Median = $\frac{4+5}{2} = 4.5$

When items are odd in dataset

1, 2, 3, 4, 5, 6, 7

Median = 4

→ **Mode**: The mode represents the frequently occurring value in the dataset. Sometimes, the dataset may contain multiple modes and in some cases it does not contain any mode at all.

** If we have symmetrical distribution of continuous data, all the three measures of central tendency hold good. But most oftenly mean is used as it involves all the values present in dataset.

** In case of skewed distribution, median is preferred over mean.

** In case of categorical data, mode is preferred as the best choice.