

Explains stats in simple English.

Measure of Central Tendency

MEAN

- The mean is simply the arithmetic average of a distribution of scores, and researchers like it because it provides a single, simple number that gives a rough summary of the distribution.
- Like it because it provides a single, simple number that gives a rough summary of the distribution.
- It is important to remember that although the mean provides a useful piece of information, it does not tell you anything about how spread out the scores are (i.e., variance) or how many scores in the distribution are close to the mean.
- It is possible for a distribution to have very few scores at or near the mean.
- FORMULA:

$$\mu = \frac{\sum X}{N}$$
$$\bar{X} = \frac{\sum X}{n}$$

- where \bar{X} is the sample mean,
- μ is the population mean.>
- \sum means the "sum of"
- X is an individual score in the distribution
- n is the number of scores in the sample.
- N is the number of scores in the population.

MEDIAN

- The median is the score in the distribution that marks the 50th percentile. That is, 50 percent of the scores in the distribution fall above the median and 50 percent false below it.
- Researchers often use the median when they want to divide their distribution scores into two equal groups (called a median split).
- The median is also a useful statistic to examine when the scores in a distribution are skewed or when there are a few extreme scores at the high end or the low end of the distribution.
- This is discussed in more detail in the following pages.

MODE

- The mode is the least used of the measures of central tendency because it provides the least amount of information.
- The mode simply indicates which score in the distribution occurs most often, or has the highest frequency.

Note:

difference between sample and population. ### sample - Sample is a representative of the population. - Values derived from sample are known as statistics. - In the case of mean, it is represented as \bar{X} .

Population

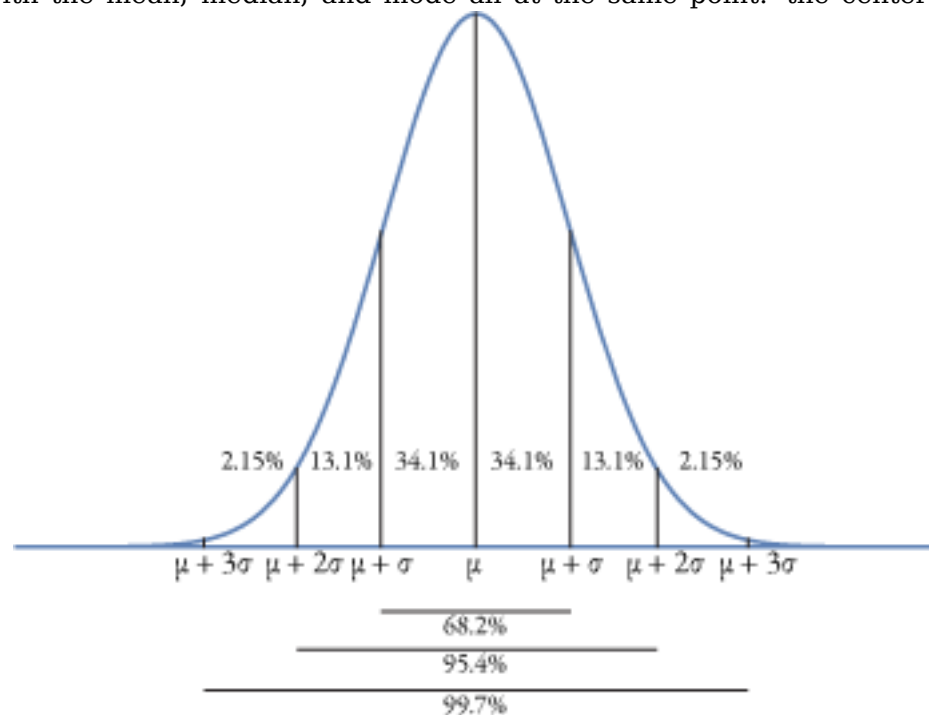
- It defines/represent whole data.
- Values derived from populations are known as parameter.
- In the case of mean, it is represented as μ

Important to note:

- All samples are representative of some population and that all the sample statistics can be used as estimates of population parameters.
- We will try to explain global (population) phenomenon by analysing small part of global (sample). Example we will take 1 million (to analysis)[sample] of people out of 5 million population with heart disease to explain the cause of heart disease.

Distribution

- when scores in a distribution are normally distributed, the distribution forms a bell-shaped curve with the mean, median, and mode all at the same point: the center of



the distribution.

- When most of the members in a sample have scores that are bunched up at one end of the distribution and there are a few scores at the other end, the distribution is said to be skewed $<$ or $>$. When working with a skewed distribution, the mean, median, and mode are usually all at different points.
- A tail toward the higher end. This is known as a positively skewed distribution, because

the tail goes toward the higher end.

