Week 2

Coefficient of Variation (CV)
    Formula
    Relation to distributions
Skewness
Kurtosis

Coefficient of Variation (CV)

Formula

Let μ = Population mean,

σ = Population Standard devation

$$CV = \frac{\sigma}{\mu}$$

Relation to distributions

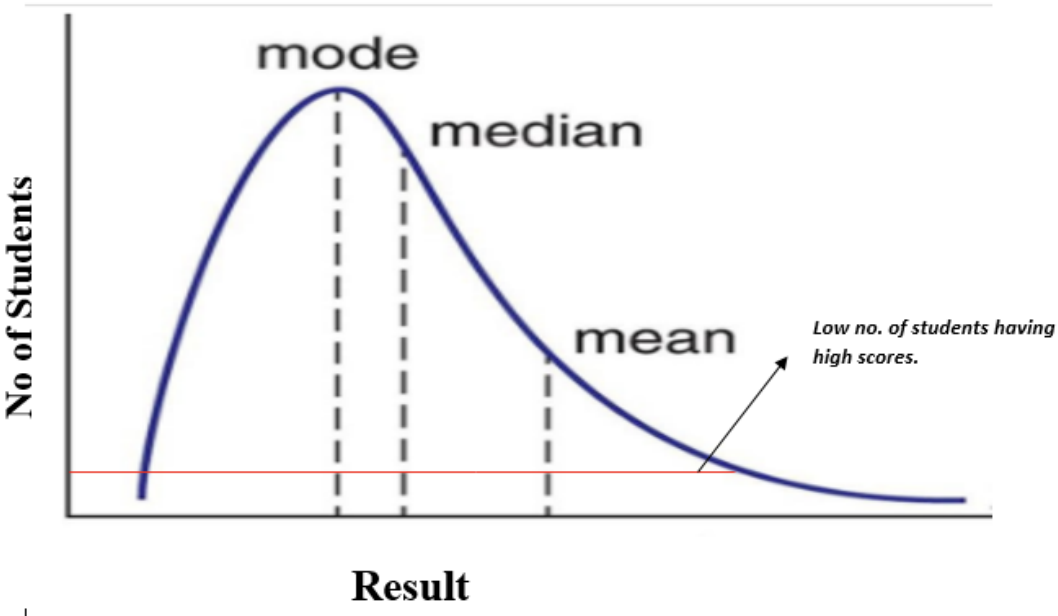
- If CV = 1, it is an exponential distribution.
- The mean and the variance of the Poisson distribution are the same

Skewness

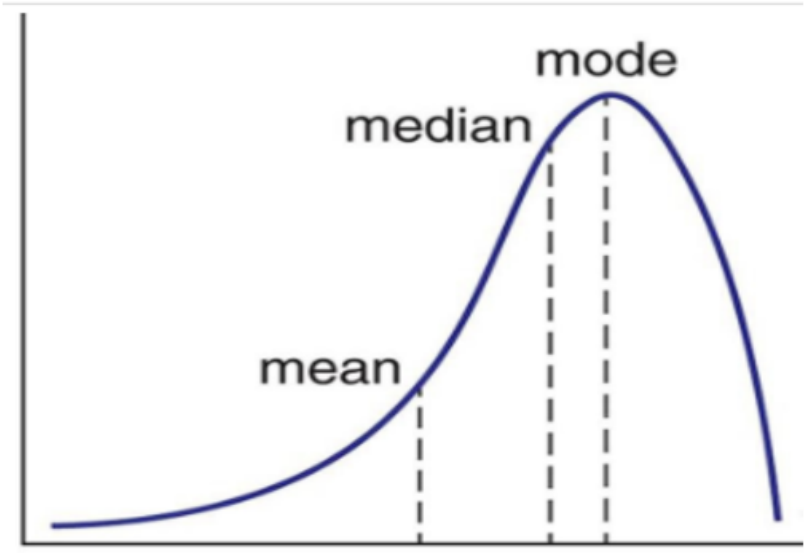
> 💡 measures symmetry of distribution

- If the skewness is between -0.5 & 0.5, the data are nearly symmetrical.
- If the skewness is between -1 & -0.5 (negative skewed) or between 0.5 & 1(positive skewed), the data are slightly skewed.
- If the skewness is lower than -1 (negative skewed) or greater than 1 (positive skewed), the data are extremely

skewed.



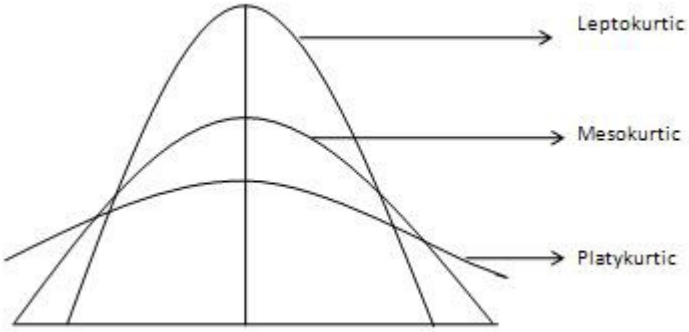
Mean > Median > Mode



Mode > Median > mean

Kurtosis

💡 measures heaviness in the tails/ degree of presence of outliers



The expected value of kurtosis is 3. This is observed in a symmetric distribution. A kurtosis greater than three will indicate Positive Kurtosis. In this case, the value of kurtosis will range from 1 to infinity. Further, a kurtosis less than three will mean a negative kurtosis. The range of values for a negative kurtosis is from -2 to infinity. The greater the value of kurtosis, the higher the peak.

So, if a dataset has a positive kurtosis, it has more in the tails than the normal distribution. If a dataset has a negative kurtosis, it has less in the tails than the normal distribution.