Glossary

1. Continuous Random Variable

A continuous random variable maps outcomes to values of an uncountable set (e.g., the real numbers). For a continuous random variable, the probability of any specific value is zero, whereas the probability of some infinite set of values (such as an interval of non-zero length) may be positive.

2. Dispersions

Statistical dispersion (also called statistical variability or variation) is variability or spread in a variable or a probability distribution. Common examples of measures of statistical dispersion are the variance, standard deviation and inter quartile range.

3. Expected Value

The expected value (or population mean) of a random variable indicates its average or central value. It is a useful summary value (a number) of the variable's distribution. Stating the expected value gives a general impression of the behaviour of some random variable without giving full details of its probability distribution (if it is discrete) or its probability density function (if it is continuous). Two random variables with the same expected value can have very different distributions. The expected value of a random variable X is symbolized by E(X) or μ .

4. Inter quartile Range (IQR)

The inter-quartile range (IQR), also called the mid spread, is a measure of statistical dispersion, being equal to the difference between the upper and lower quartiles, $IQR = Q_3 - Q_1$

5. Mean

The mean of a statistical distribution with a continuous random variable, also called the expected value, is obtained by integrating the product of the variable with its probability as defined by the distribution. The expected value is denoted by the lower case Greek letter mu (μ).

6. Median

The median of a distribution with a continuous random variable is the value m such that the probability is at least 1/2 (50%) that a randomly chosen point on the function will be less than or equal to m, and the probability is at least 1/2 that a randomly chosen point on the function will be greater than or equal to m.

7. Mode

The mode is the number that appears most often in a set of numbers. The mode is a way of expressing, in a single number, important information about a random variable or a population. The mode of a continuous probability distribution is the value x at which its probability density function has its maximum value.

8. Population

A population is a collection of units being studied. Units can be people, places, objects, procedures, or many other things. Much of statistics is concerned with estimating numerical properties (parameters) of an entire population from a random sample of units from the population.

9. Probability Distribution

In probability and statistics, a probability distribution assigns a probability to each of the possible outcomes of a random experiment.

10. Random Variables

A random variable is a variable whose value is subject to variations due to chance (i.e. randomness, in a mathematical sense). As opposed to other mathematical variables, a random variable conceptually does not have a single, fixed value; rather, it can take on a set of possible different values, each with an associated probability.

11. Range

For a distribution with a continuous random variable, the range is the difference between the two extreme points on the distribution curve, where the value of the function falls to zero. For any value outside the range of a distribution, the value of the function is equal to 0.

12. Semi-Inter-Quartile Range

The semi-inter quartile range is a measure of spread or dispersion. It is computed as one half the difference between the 75th percentile [often called (Q3)] and the 25th percentile (Q1). The formula for semi-inter quartile range is therefore: (Q3-Q1)/2.

13. Skewed

Skewed means not symmetrical about the mean or placed or turned to one side; asymmetrical or distorted or biased in meaning or effect.

14. Tensile Strengths

Tensile strength measures the force required to pull something such as rope, wire, or a structural beam to the point where it breaks. The tensile strength of a material is the maximum amount of tensile stress that it can take before failure.

15. Variance

Variance is a measure of how far a set of numbers is spread out. It is one of several descriptors of a probability distribution, describing how far the numbers lie from the mean (expected value).