<u>Glossary</u>

1. Attribute

A characteristic of a system for which numerical measurements cannot be made and therefore cannot be treated as a variable in quantitative analysis.

2. Alternative Hypothesis

The alternative hypothesis, H_1 , is a statement of what a statistical hypothesis test is set up to establish. For example, in a clinical trial of a new drug, the alternative hypothesis might be that the new drug has a different effect, on average, compared to that of the current drug.

3. Bernoulli Distribution

In probability theory and statistics, the Bernoulli distribution, named after Swiss scientist Jacob Bernoulli, is a discrete probability distribution, which takes value 1 with success probability p and value 0 with failure probability q = 1-p

4. Bernoulli Trial

A Bernoulli trial is an experiment whose outcome is random and can be either of two possible outcomes, success and failure.

5. Dichotomy

Division into two usually contradictory parts or opinions is called dichotomy.

6. 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

7. Normal distribution

In probability theory, the normal (or Gaussian) distribution is a continuous probability distribution that has a bell-shaped probability density function, known as the Gaussian function or informally as the bell curve.

8. Null Hypothesis

The null hypothesis, H_0 , represents a theory that has been put forward, either because it is believed to be true or because it is to be used as a basis for argument, but has not

been proved. For example, in a clinical trial of a new drug, the null hypothesis might be that the new drug is no better, on average, than the current drug.

9. One Sided Test

A test of a statistical hypothesis, where the region of rejection is on only one side of the sampling distribution, is called a one-sided test.

10. Proportion

Proportion is the comparative relation between things or magnitudes as to size, quantity, number, etc.; ratio

11. Probability distribution

Probability distribution is a function that gives the probability of all elements in a given space.

12. Two-Sided Test

A two-sided test is a hypothesis test in which the null hypothesis is rejected if the observed sample statistic is more extreme than the critical value in either direction (higher than the positive critical value or lower than the negative critical value). A two-tailed test has two critical regions.

13. Significance level

The significance level of a statistical hypothesis test is a fixed probability of wrongly rejecting the null hypothesis H_0 , if it is in fact true.

14. Standard deviation

This is the most commonly used measure of statistical dispersion. It is the square root of the variance, and is generally written as sigma.

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).