**Statistics Additional Resources**

Statistics

A discipline that allows researchers to evaluate conclusions derived from sample data.

Nominal Scale

A type of measurement scale. Values assigned to variables represent a descriptive category, but have no inherent numerical value with respect to magnitude.

Ordinal Scale

A type of measurement scale. Each value has a unique meaning, and it has an ordered relationship to every other value on the scale.

Interval Scale

A type of measurement scale. A type of measurement scale that is characterized by equal intervals between scale units.

Ratio Scale

A type of measurement scale. It is characterized by equal intervals between scale units and a minimum scale value of zero.

Variable

Any characteristic observed in a study.

Data

Characteristics or information, usually numerical, that are collected through observation.

Skewness

Distortion or asymmetry in a symmetrical bell curve, or normal distribution, in a set of data.

Gaps in Graphs

Areas of a graphic display where there are no observations.

Outlier

A data point that diverges greatly from the overall pattern of data.

Frequency Table

A listing of possible values for a variable, together with the number of observations for each value.

Pie Chart

A circle having a "slice of the pie" for each category.

Bar Chart

A chart that presents categorical data with rectangular bars with heights proportional to the values that they represent.

Histogram

A graph of vertical bars representing the frequency distribution of a set of data.

Population

The total group about whom you want to make conclusions.

Sample

A subset of the population for whom you actually have data.

Parameter

A measurable characteristic of a or a population, such as a mean or a standard deviation .

Statistic

A numerical measurement describing some characteristic of a sample

Mean

It is equal to the sum of the values in the dataset divided by the number of values.

Median

It is the middle score for a dataset that has been sorted from small to large.

Mode

It is the most frequent score in a dataset.

Range

It is difference between the biggest and smallest random variable.

Standard Deviation

It is a statistic that measures the dispersion of a dataset relative to its mean and is calculated as the square root of the variance.

Variance

It is a measurement of the spread between numbers in a data set.

Interquartile Range (IQR)

It is a measure of variability, based on dividing a data set into quartiles.

Correlation

It is a statistical technique that determines how one variable changes with another variable.

Covariance

It is a measure of the strength of the correlation between two or more sets of random variates.

Probability

It is the branch of mathematics concerning numerical descriptions of how likely an event is to occur or how likely it is that a proposition is true.

Permutation

It is an arrangement of all or part of a set of objects, with regard to the order of the arrangement.

Combination

It is a selection of all or part of a set of objects, without regard to the order in which objects are selected.

Intersection

It is the set of elements that belong to two or more sets.

Union

It is the set that contains all of the elements that are in at least one of the two sets.

Complement

It is the subset of outcomes in the sample space that are not in the event.

Conditional Probability

The probability that event A occurs, given that event B has occurred

Random Variable

It is the set of possible numerical values in a random experiment.

Probability Distribution

It is a table or an equation that links each outcome of a statistical experiment with its probability of occurrence.

Binomial Distribution

A probability distribution for independent events for which there are only two possible outcomes such as a coin flip.

Sampling Distribution

It can be thought of as a relative frequency distribution with a very large number of samples.

Null Hypothesis (H0)

It is a hypothesis tested in significance testing. It is typically the hypothesis that a parameter is zero or that a difference between parameters is zero.

Alternative Hypothesis (Ha)

It is the hypothesis used in hypothesis testing that is contrary to the null hypothesis.

Significance Level

It is the highest value of a probability value for which the null hypothesis is rejected.