

STATISTICS WORKSHEET-3

Question) Which of the following is the correct formula for total variation ?

- a) Total Variation = Residual Variation – Regression Variation
- b) Total Variation = Residual Variation + Regression Variation
- c) Total Variation = Residual Variation * Regression Variation
- d) All of the mentioned

Answer) Total Variation = Residual Variation + Regression Variation

Question) Collection of exchangeable binary outcomes for the same covariate data are called outcomes.

- a) random
- b) direct
- c) binomial
- d) none of the mentioned

Answer) Binomial

Question) How many outcomes are possible with Bernoulli trial ?

- a) 2
- b) 3
- c) 4
- d) None of the mentioned

Answer) 2

Question) If H_0 is true and we reject it is called

- a) Type-I error
- b) Type-II error
- c) Standard error
- d) Sampling error

Answer) Type-1 error

Question) Level of significance is also called:

- a) Power of the test
- b) Size of the test
- c) Level of confidence
- d) Confidence coefficient

Answer) Size of the test

Question) The chance of rejecting a true hypothesis decreases when sample size is:

- a) Decrease
- b) Increase
- c) Both of them
- d) None

Answer) increase

Question) Which of the following testing is concerned with making decisions using data ?

- a) Probability
- b) Hypothesis
- c) Causal
- d) None of the mentioned

Answer) Hypothesis

Question) What is the purpose of multiple testing in statistical inference ?

- a) Minimize errors
- b) Minimize false positives
- c) Minimize false negatives
- d) All of the mentioned

Answer) All of the mentioned

Question) Normalized data are centred at and have units equal to standard deviations of the original data

- a) 0
- b) 5
- c) 1
- d) 10

Answer) 0

Question) What Is Bayes' Theorem ?

Answer) Bayes' theorem is a formula that describes how to update the probabilities of hypotheses when given evidence. It follows conditional probability.

Question) What is z-score ?

Answer) A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values. Z-score is measured in terms of standard deviations from the mean. If a Z-score is

0, it indicates that the data point's score is identical to the mean score. A Z-score of 1.0 would indicate a value that is one standard deviation from the mean. Z-scores may be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean.

Question) What is t-test ?

Answer) A t-test is a type of inferential statistic used to determine if there is a significant difference between the means of two groups, which may be related in certain features. It is mostly used when the data sets, like the data set recorded as the outcome from flipping a coin 100 times, would follow a normal distribution and may have unknown variances. A t-test is used as a hypothesis testing tool, which allows testing of an assumption applicable to a population.

Question) What is percentile ?

Answer) A percentile is a measure used in statistics indicating the value below which a given percentage of observations in a group of observations falls. For example, the 20th percentile is the value (or score) below which 20% of the observations may be found.

Question) What is ANOVA ?

Answer) ANOVA stands for Analysis of Variance. One-Way Analysis of Variance tells you if there are any statistical differences between the means of three or more independent groups.

Question) How can ANOVA help ?

Answer) The one-way ANOVA can help you know whether or not there are significant differences between the means of your independent variables (such as the first example: age, gender, income). When you understand how each independent variable's mean is different from the others, you can begin to understand which of them has a connection to your dependent variable and begin to learn what is driving that behaviour.