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1. **HYPOTHESIS TESTING**

A statistical hypothesis, sometimes called confirmatory data analysis, is a hypothesis that is testable on the basis of observing a process that is modelled via a set of random variables. A statistical hypothesis test is a method of statistical inference. Hypothesis testing is an act in statistics whereby an analyst tests an assumption regarding a population parameter. One of the main goals of statistical hypothesis testing is to estimate the p-value, which is the probability of obtaining the observed results, or something more extreme, if the null hypothesis were true

1. **DIFFERENCE BETWEEN CLASSICAL AND P-VALUE APPROACH FOR HYPOTHESIS TESTING**

The Classical Approach to hypothesis testing is to compare a test statistics and a critical value. It is best used for distributions which give areas and require you to look up the critical value rather than distributions which have you look up a test statistic to find an area.

**THE CLASSICAL APPROACH**

This approach also has three different decision rules, depending on whether it is a left tail, right tail, or two tail tests.

A problem with Classical Approach is that if a different level of significance is desired, a different critical value must be read from the table

**THE P-VALUE APPROACH**
The P-Value Approach which is short for Probability Value, approaches hypothesis testing from a different manner. Instead of comparing z-scores or t-scores as in the classical approach, you are comparing probabilities or areas.

The level of significance (alpha) is the area in the critical region i.e. the area in the tails to the right or left of the critical values

The P-value is the area to the right or left of the test statistic. If it is a two tails test, then look up the probability in one tail and double it.

If the test statistic is in the critical region, then the p-value will be less than the level of significance. It does not matter whether it is a left tail, right tail, or two tail tests. This rule always holds.

The P-Value approach is best suited for the normal distribution when doing calculations by hand. However, many statistical packages will give the p-value but not the critical value and this is because it is easier for a computer or calculator to find the probability than it is to find the critical value.

Another benefit of the p-value is that the statistician immediately knows at what level the testing becomes significant. That is, a p-value of 0.06 would be rejected at a 0.10 level of significance, but it would fail to reject at a 0.05 level of significance.

1. **IMPORTANCE OF HYPOTHESIS TESTING IN RESEARCH**

A hypothesis testing is known to be the pillar of true research findings. This write-up substantiates the role of a hypothesis, steps in hypothesis testing and its application in the course of a research exercise. Hypothesis testing is an act in statistics whereby an analyst tests an assumption regarding a population parameter. The methodology used by the analyst depends on the nature of the data used and the reason for the analysis.

Hypothesis testing is used to assess the plausibility of a hypothesis by using simple data.

Hypothesis testing is done to help determine if the variation between or among groups of data is due to true variation or if it is the result of sample variation. With the help of sample data we form assumptions about the population, and then the assumptions are tested statistically.

Hypothesis testing has been said to be one of the most important concepts in statistics because it is how we decide if something really happened, or if certain treatments have positive effects, or if groups differ from each other or if one variable predicts another. It is also used to assess the plausibility of a hypothesis by using sample data. Such data may come from a larger population, or from a data-generating process.