**Wilson Favour Uwem**

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**Pharmacology**

**Sta 312(demography and biostatistics) ASSIGNMENT**

1. Hypothesis testing is an act in statistics whereby an analyst [tests](https://www.investopedia.com/terms/w/wilcoxon-test.asp) an assumption regarding a population parameter. The methodology employed by the analyst depends on the nature of the data used and the reason for the analysis.
2. There are two general approaches toward setting up and testing specific hypotheses: the "classical approach" and the "p-value" approach.

The steps in the classical approach:

1. define or state the null and alternative hypotheses.
2. select a test statistic.
3. select a significance level, or a specific probability level, which if exceeded, signals that the test statistic is large enough to consider significant.
4. delineate the "rejection region" under the pdf of the appropriate distribution for the test statistic, (i.e. determine the specific value of the test statistic that if exceeded would be grounds to consider it significant.
5. compute the test statistic.
6. depending on the particular value of the test statistics either a) reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha), or b) fail to reject the null hypothesis.

**while**

The steps in the "p-value" approach are:

1. define or state the null and alternative hypotheses.
2. select and compute the test statistic.
3. refer the test statistic to its appropriate reference distribution.
4. calculate the probability that a value of the test statistic as large as that observed would occur by chance if the null hypothesis were true (this probability, or *p-value*, is called the significance level).
5. if the significance level is small, the tested hypothesis (Ho) is discredited, and we assert that a "significant result" or "significant difference" has been observed.
6. hypothesis testing, also called confirmatory data analysis, is often used to decide whether experimental results contain enough information to cast doubt on conventional wisdom. For example, at one time it was thought that people of certain races or color had inferior intelligence compared to Caucasians.