

NULL HYPOTHESIS

- NULL HYPOTHESIS simply means "NO DIFFERENCE"
- The hypothesis says that OBSERVED DIFFERENCE IS ENTIRELY DUE TO SAMPLING ERROR i.e. it occurred purely by chance.
- It is denoted by H_0 .

AIM

In the test of significance, null hypothesis is postulated to establish the basis for calculating the probability that the difference occurred purely of chance.

GENERAL PROCEDURE FOR TESTING A HYPOTHESIS

- i. A NULL HYPOTHESIS, suitable to problem is set up
- ii. An alternate hypothesis is defined, if necessary.
- iii. A suitable statistical test, using a relevant formula is calculated.
- iv. The DEGREE OF FREEDOM is determined.

v. Then the probability value (*p value*) is found out, corresponding to the calculated value of test and its degree of freedom

vi. If 'p value' is less than 0.05 - test is NOT SIGNIFICANT.

vii. If 'p value' is more than 0.05- test is SIGNIFICANT

EVALUATION

TEST OF SIGNIFICANCE:

- When the difference is significant-Null hypothesis is REJECTED
- When the difference is not significant-Null hypothesis is NOT REJECTED i.e. approved.

- The null hypothesis is never proved to be completely right or wrong, or true or false.
- But it is only REJECTED or NOT REJECTED at the probability level of significance concerned.

GOALS

- ✓ Technical null hypotheses are used to verify statistical assumptions.
- ✓ Scientific null assumptions are used to directly advance a theory. i.e. to approve it.
- ✓ Null hypotheses of homogeneity are used to verify that multiple experiments are producing consistent result
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- ✓ It asserts the equality of effect of two or more alternative treatments, for example, a drug and a placebo, are used to reduce scientific claims based on statistical noise. This is the most popular null hypothesis; It is so popular that many statements about significant testing assume such null hypotheses.

ALTERNATIVE HYPOTHESIS

- ❖ It is defined as the prediction that there is a measurable interaction between variables
- ❖ It is also called as “**MANTAINED hypothesis**” or “**RESEARCH hypothesis**”
- ❖ It is denoted by $H(a)$
- ❖ Null hypothesis is opposed by alternative hypothesis.
- ❖ When null hypothesis is rejected, ALTERNATIVE HYPOTHESIS is not rejected and vice versa.

*NORMAL
DISTRIBUTION
CURVE*