SESSION 7 OF

STATISTICS FOR BUSINESS

DR. SURESH KUMAR GADI
UNIVERSIDAD DE LAS AMÉRICAS PUEBLA

TODAY'S TOPIC

HYPOTHESIS TESTING

BY THE END OF CLASS, WE SHOULD KNOW

- Null and alternative hypothesis
- Hypothesis testing
- Significance level (α)
- One and two tailed tests

NULL HYPOTHESIS (H_0)

STATUS QUO

ALTERNATE HYPOTHESIS (H_A)

PROPOSING

EXAMPLES

H_0

- The average monthly salary of a European adult is EUR 3000.
- The average height of the kids under seven years is less than hundred centimeters.
- The average house-rent in los angels is greater than or equal to 2000 USD.

H_A

- The average monthly salary of a European adult is not equal to EUR 3000.
- The average height of the kids under seven years is grater than or equal to hundred centimeters.
- The average house-rent in los angels is less than 2000 USD

HYPOTHESIS TESTING

TYPE-1 ERROR

H_0 is true but we reject it.

SIGNIFICANCE LEVEL (α)

$$\alpha = P(\text{TYPE} - 1 \text{ ERROR})$$

TYPE-2 ERROR

H_0 is false but we failed to reject it.

$\beta = P(\text{Type} - 2 \text{ error})$

EXAMPLE

Which error is acceptable for the following?

H_0: Average battery life of a pacemaker is 300 days or less.

EXAMPLE ONE TAILED TEST

EXAMPLE TWO TAILED TEST

THANK YOU

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