SESSION 8 OF

STATISTICS FOR BUSINESS

DR. SURESH KUMAR GADI
UNIVERSIDAD DE LAS AMÉRICAS PUEBLA

TODAY'S TOPIC

HYPOTHESIS TESTING FOR TWO POPULATIONS

EXAMPLES

Compare mean salaries between male and female population.

Compare mean quantity packed by two different machines

DIFFERENCE IN MEAN

Description	Mathematical symbol
Sample size of population 1	n_1
Sample size of population 2	n_2
Sample mean of population 1	$\overline{x}_1$
Sample mean of population 2	$\overline{x}_2$
Sample standard deviation of population 1	σ_1
Sample standard deviation of population 2	σ_2
Standard error for population 1	$\sigma_{\overline{x}_1} = \frac{\sigma_1}{\sqrt{n_1}}$
Standard error for population 2	$\sigma_{\overline{x}_2} = \frac{\sigma_2}{\sqrt{n_2}}$
Point estimator of mean difference	$\overline{x}_1 - \overline{x}_2$
Standard error of mean difference	$\sigma_{\bar{x}_1 - \bar{x}_2} = \sqrt{\sigma_{\bar{x}_1}^2 + \sigma_{\bar{x}_2}^2} = \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}$

EXAMPLE

DIFFERENCE IN POPULATION PORTION

Description	Mathematical symbol
Sample size of population 1	n_1
Sample size of population 2	n_2
Population portion of population 1	$\overline{p}_1$
Population portion of population 2	$\overline{p}_2$
Standard error for population 1	$\sigma_{\bar{p}_1} = \sqrt{\frac{\bar{p}_1(1-\bar{p}_1)}{n_1}}$
Standard error for population 2	$\sigma_{\bar{p}_2} = \sqrt{\frac{\bar{p}_2(1-\bar{p}_2)}{n_2}}$
Point estimator of population portion difference	$\overline{p}_1 - \overline{p}_2$
Standard error	$\sigma_{\bar{p}_1-\bar{p}_2} = \sqrt{\sigma_{\bar{p}_1}^2 + \sigma_{\bar{p}_2}^2} = \sqrt{\frac{\bar{p}_1(1-\bar{p}_1)}{n_1} + \frac{\bar{p}_2(1-\bar{p}_2)}{n_2}}$

EXAMPLE

THANK YOU

”