SESSION 8 OF STATISTICS FOR BUSNESS

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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

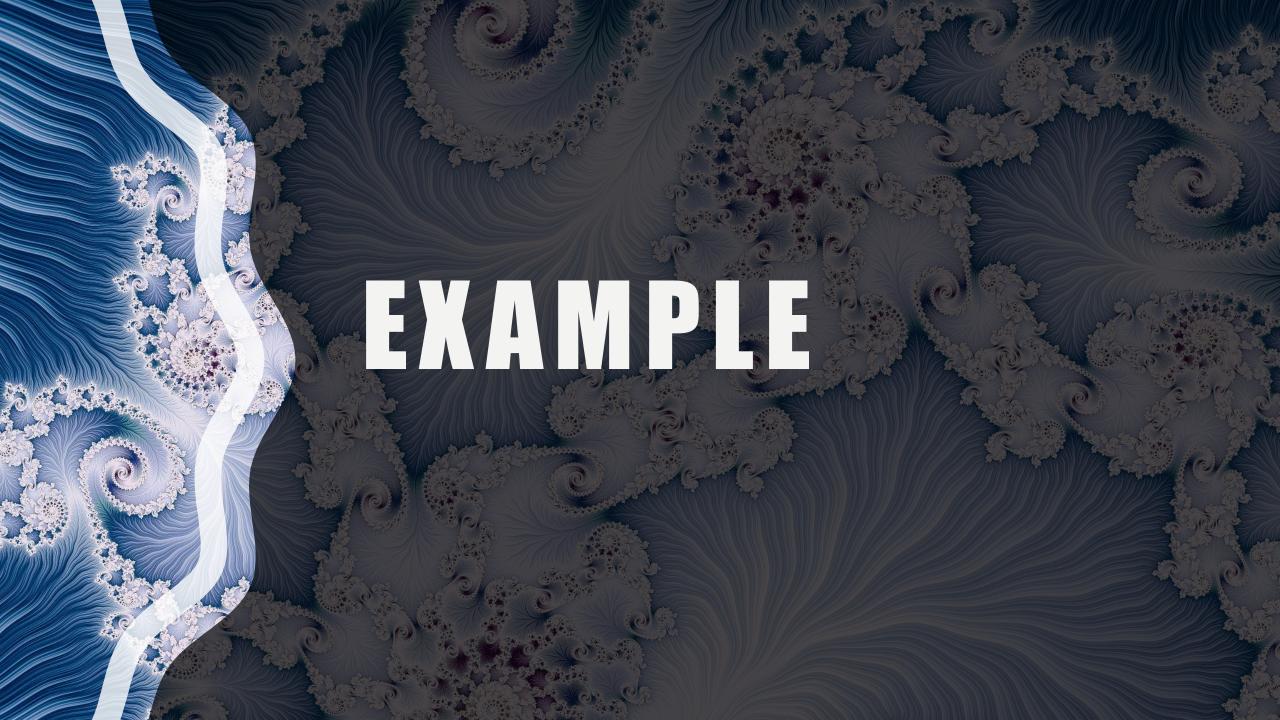
Description	Mathematical symbol
Sample size of population I	n_1
Sample size of population 2	n_2
Sample mean of population I	\overline{x}_1
Sample mean of population 2	\overline{x}_2
Sample standard deviation of population I	σ_1
Sample standard deviation of population 2	σ_2
Standard error for population I	$\sigma_{\overline{x}_1} = \frac{\sigma_1}{\sqrt{n_1}}$
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 I	n_1
Sample size of population 2	n_2
Population portion of population I	\overline{p}_1
Population portion of population 2	\overline{p}_2
Standard error for population I	$\sigma_{\bar{p}_1} = \sqrt{\frac{\bar{p}_1(1-\bar{p}_1)}{n_1}}$
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	$\sigma_{\bar{p}_1 - \bar{p}_2} = \sqrt{\sigma_{\bar{p}_1}^2 + \sigma_{\bar{p}_2}^2} = \sqrt{\frac{\bar{p}_1(1 - \bar{p}_1)}{n_1} + \frac{\bar{p}_2(1 - \bar{p}_2)}{n_2}}$



THANK YOU

