

A.P. SHAH INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering Data Science



Subject: Statistics for ATLDS Academic Year: 2023 2024.

Example 1:

A company manufactures ear batteries with an average life span of a or more years. An engineer beleires this value to be less. Using 10 samples, he measures the average life span to be 1.8 years with a standard deviation of 0.15.

(a) State the null and alternale hypothesis.

(b) At a 99% confidence level is there enough evidence to discard the null hypothesis?

Solution:

Ho: 472

H1: M<2

Since in alternate hypothesis M<2, we choose

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6.99. d=0.0} 1-2.82.

Confidence level = 99%.

Elnce the sample no = 10; we we +-test.

Givendala: n=10, X=1.8, S=0.15, H=2.

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$$t = X - \frac{40}{8}$$

$$= \frac{1.8 - 2}{0.15 / \sqrt{10}} = \frac{-0.2}{0.047}$$

$$t = -4.22$$

Calculated + = -4.22 < -2.82

We reject the null hypothesis. Yes there are enough evidence to discard the null hypothesis.

If the sample mean and expected mean value of Example2: the marks obtained by 15 students in a class test is 290 and 300 respectively. What is the 4-score if the sol of the marker is 50? (x=1.761) -

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