SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107
An Autonomous Institution
Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF MANAGEMENT STUDIES

COURSE NAME : 19BA106 FUNDAMENTALS OF DATA ANALYSIS

I YEAR /I SEMESTER

Unit 3 – HYPOTHESIS TESTING

Topic 2: FDA – HYPOTHESIS TYPES

WHAT IS HYPOTHESIS ?

➢A hypothesis is a precise, testable statement of what the researcher(s) predict will be the outcome of the study.

TYPES OF HYPOTHESIS

Null Hypothesis:-

The null hypothesis states that there is no relationship between the two variables being studied (one variable does not affect the other).

The symbol is denoted by "Ho"

TYPES OF HYPOTHESIS

Alternative Hypothesis

The alternative hypothesis states that there is a relationship between the two variables being studied (one variable has an effect on the other).

The symbol is denoted by "Ha"

HYPOTHESIS TESTING FOR MEAN

A factory has a machine that dispense 80ml of fluid in a bottle. An employee believes that the average amount of fluid is not 80ml. Using 40 samples he measures the average amount dispensed by the machine to be 78ml with standard deviation of 2.5ml.

1) State the null and alternate hypothesis

2) At a 95% confidence Level is there enough evidence to support the idea that the machine is not working properly

HYPOTHESIS TESTING FOR MEAN

1) State the null and alternate hypothesis

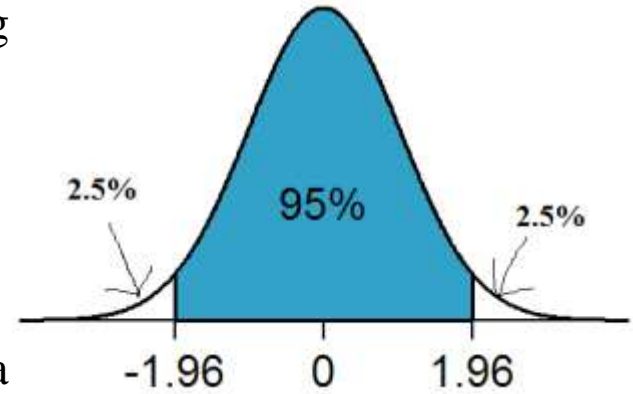   H0 – Average = 80
   H1 – Average Not $\neq$ 80

HYPOTHESIS TESTING FOR MEAN

At a 95% confidence Level is there enough evidence to support the idea that the machine is not working properly?
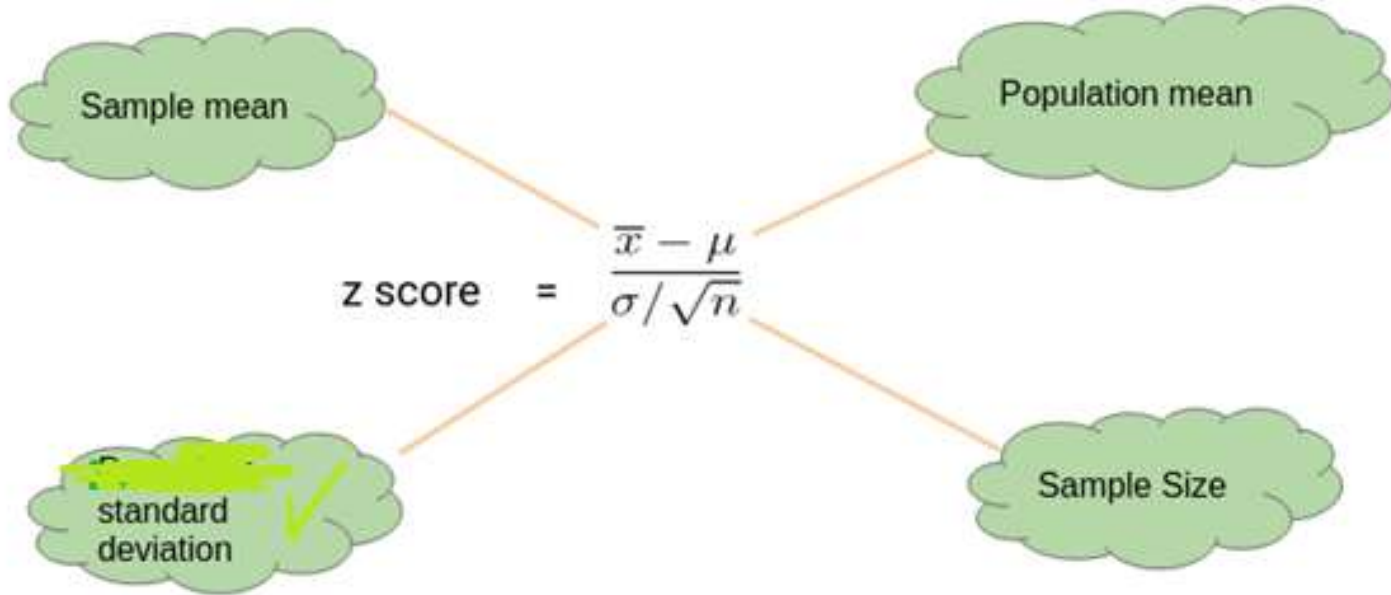
We have to conduct two tail test

Shaded area is the fail to reject area(Ho) and Empty area is a rejection area(Ho)

HYPOTHESIS TESTING FOR MEAN

Sample mean

Population mean

$$\text{z score} = \frac{\overline{x} - \mu}{\sigma / \sqrt{n}}$$

standard deviation

Sample Size

HYPOTHESIS TESTING FOR MEAN

A factory has a machine that dispense 80ml of fluid in a bottle. An employee believes that the average amount of fluid is not 80ml. Using 40 samples he measures the average amount dispensed by the machine to be 78ml with standard deviation of 2.5ml.

Mean(x) = 78
Hypothesis mean = 80
S – Standard deviation = 2.5
N – Number of samples = 40

HYPOTHESIS TESTING FOR MEAN

When we apply this into z test we got the values as -5.06

Which is lies in the rejection region. So we can say that at 95% confidence we cannot accept the null hypothesis. (We should reject the null hypothesis)

So the machine that is Not dispense 80ml of fluid in a bottle at 95 % confidence level.

There is enough evidence to support alternate hypothesis.

RECAP

QUESTIONS???

THANK YOU