Let P be the ture population proportion of customers are satisfied with the service they receive.

Given that,

Sample of size ,n=100 ,Point estimate of p, p^=0.73

No. of success,x=n\*p^=73

Significance level, α=0.04 i.e 4%

a)

**Claim: Is to test that, whether 79% of customers are satisfied with the service they receive.**

**The null and alternative hypotheses,**

**Ho;P=0.79 Vs H1:P≠0.79**

>n=100;p\_hat=0.73;x=n\*p\_hat;x

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> prop.test(x,n,p=0.79,conf.level=0.96)

1-sample proportions test with continuity correction

data: x out of n, null probability 0.79

X-squared = 1.8234, df = 1, **p-value = 0.1769**

alternative hypothesis: true p is not equal to 0.79

96 percent confidence interval:

0.6256055 0.8147827

sample estimates:

p

0.73

**Decision rule : (P-value approach)**

**We reject Ho at α % significance level if**

**P-value ≤ α**

Here, **P-value=0.1769** (from output)

Here P-value is greater than significance level , hence we fail to reject Ho at 4% significance level.

**Conclusion: Threre is not sufficient evidence to reject the CEO’s hypothesis that 79% of customers are satisfied with the service they receive**.

b)

**Claim: Is to test that, whether the at least 79% of customers are satisfied with the service they receive.**

**The null and alternative hypotheses,**

**Ho:P≥0.79 Vs H1:P<0.79**

> prop.test(x,n,p=0.79,conf.level=0.96,alternative="less")

1-sample proportions test with continuity correction

data: x out of n, null probability 0.79

X-squared = 1.8234, df = 1, p-value = 0.08846

alternative hypothesis: true p is less than 0.79

96 percent confidence interval:

0.0000000 0.8044379

sample estimates:

p

0.73

**Decision rule : (P-value approach)**

**We reject Ho at α % significance level if**

**P-value ≤ α**

Here, **P-value=0.08846**  (from output)

Here P-value is greater than significance level , hence we fail to reject Ho at 4% significance level.

**Conclusion: Threre is not sufficient evidence to reject the CEO’s hypothesis that at least 79% of customers are satisfied with the service they receive.**