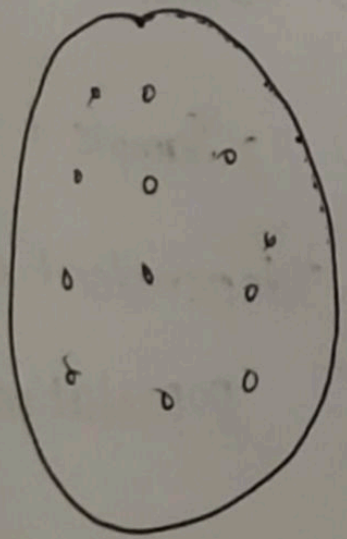
10/11/25

$H_0$ : The Avg salary of Banglore IT employees is 27k.

$H_A$ : No The Avg salary of Bang IT employees is not 27k.



Sample 1

1) 28 k
2) 35 k
3) 18 k
4) 15 k
:

Two tail

$H_0$ : salary = 27k.

$H_A$ : Salary ≠ 27 k.

1 Sample t test

depends on population.

## percentaile and Quartile :

percentaile is the value below which certain percent of observation will ~~learn~~ lie.

Ex :

= { 1, 1, 2, 3, 4, 5, 5, 6, 7, 7, 8 }.

How much % of data will come below 6 ?

*) percentile rank of $x = \frac{\#\text{ no of value below}}{N} \times 100.$

$$= \frac{7}{11} \times 100$$

$$= 63.63$$

Observation of data value is <6.

## Quartile :

Quartile helps to find the value which is present at the given percentile Rank.

Ex :

=

{ 1, 1, 2, 3, 4, 5, 5, 6, 7, 7, 8 }

Which value is present at 25% ?

$$\text{value} = \frac{\text{percentile}}{100} \times n+1$$

$$= \frac{25}{100} \times 12$$

$$= 3. \rightarrow \text{Index}$$

Value = 2

∴ The Avg sal of BNG of IT emp is 32 k.

2)

$H_0$ : More than 70% of people are married in India.

$H_A$ : No more than 70% of people are not married in India.

$H_0$ : > 70 %
$H_A$ : < 70 %
} one Tail test.

1 Sample

Are you married.

1) yes
2) yes
3) No
4) No
5) Yes
6) No
7) No
⋮
100) Yes

60% married
40% un married.

∴ 1 Sample proportion test is dependent on population.

3) $H_0$ : Covidshield is better than co-vaxin. (vaccine)

$H_A$ : No covidshied is Not better than co-voxin

Covidshied
Sample 1
1) 2 hr
2) 4 hr
3) 1.5 hr
⋮
3.5 hr

co-vaxin
Sample 2
1) 3 hr
2) 6.5 hr
3) 4 hr
4) 5 hr
⋮

} 2 Sample t test
Idependent on population

So we have to accept Ho.

Because we got 3.5 hr reaction time for covidshield.

7.2 hr for co-vaxin (vaccine)

4) Ho: New Beauty treatment is better than older one.

HA: No the New Beauty treatment is Not better than older one.

| New | old |
|---|---|
| Sample 1 | Sample 2 |
| 1) Yes | Yes |
| 2) No | Yes |
| 3) Yes | Yes |
| 4) No | No |
| 5) Yes | No |
| 50) No. | Yes. |
| 50% Yes | 80% Yes |
| 50% No | 20% No. |

2 Sample Proportion.

It is also independent on population.

We can Reject the Ho.

Because 80% of people like older treatment.

8) Ho: By Joining New weight loss program you can Significant difference in your weight.

HA: No By Joining New weight loss program there is no no Significant difference in your weight.

## Sample 1

| Before | After |
|---|---|
| 1) 78 | 1) 65 |
| 2) 93 | 2) 81 |
| 3) 110 | 3) 90 |
| 4) 90 | 4) 68 |
| ⋮ | ⋮ |
| 100) 85 | 100) 87 |

We can accept the Ho because majority got weight loss.

1 Sample paired t test.