**Cutlet diameter assumption**

**Test Statement :-** A F&B manager wants to determine whether there is any significant difference in the diameter of the cutlet between two units.

* Inferences are as below
* Y continues
* Two populations Unit A and Unit B
* X - Final diameter
* 5% significant level it means confidence level is 1-alpha = 95%
* Both Unit A and Unit B are proved normalized by Shapiro test
* External condition with respect to time is no
* Variance are equal
* will apply 2 sample T test for equal variance
* Null Hypothesis-> Diameter of the cutlet are same from both the unit
* Alternative Hypothesis -> Diameter are not same from both the unit
* We got the p-value = 0.4723
* p-value = 0.4723 which illustrate that there is no enough evidence to reject the null hypothesis

**Tat hypothesis testing**

**Test Statement :-** A hospital wants to determine whether there is any difference in the average Turn Around Time (TAT) of reports of the laboratories on their preferred list. They collected a random sample and recorded TAT for reports of 4 laboratories. TAT is defined as sample collected to report dispatch.

Inferences are below

* Y continue
* Four populations Laboratory 1,2,3,4
* X - TAT based on Y
* 5% significant level it means confidence level is 1-alpha = 95%
* All Y are proven normalized by Shapiro test
* As Y > 2 we need to stack data
* Variance are equal by bartlett.test
* Will apply one way ANOVA Test
* Null Hypothesis -> All average tat is same
* p value 2e-16 < 0.05 means enough evidence to reject the Null hypothesis

**BuyerRation Proportion Testing**

**Test Statement** :- Sales of products in four different regions is tabulated for males and females. Find if male-female buyer rations are similar across regions.

Inferences are as below

* Y is discrete
* Population is more than 2
* We will apply chi-square test
* Null Hypothesis -> Proportion for M and F in different regions are same
* p-value = 0.6603, means there is no enough evidence to reject null hypothesis

**TeleCall Defect Hypothesis testing**

**Test Statement :-** TeleCall uses 4 centers around the globe to process customer order forms. They audit a certain % of the customer order forms. Any error in order form renders it defective and has to be reworked before processing. The manager wants to check whether the defective % varies by centre. Please analyze the data at *5%* significance level and help the manager draw appropriate inferences

Inferences are as below

* Y is categorical, so changed it to numeric once
* Y is discrete
* Population is more than 2
* We need to apply stack function before any test
* We will apply chi-square test
* Null Hypothesis -> error detection percent is same for all centers
* p-value = 0.2771, means there is no enough evidence to reject null hypothesis

**Fantaloons Proportion MvsF Testing**

**Test Statement :-** TeleCall uses 4 centers around the globe to process customer order forms. They audit a certain % of the customer order forms. Any error in order form renders it defective and has to be reworked before processing. The manager wants to check whether the defective % varies by centre. Please analyze the data at *5%* significance level and help the manager draw appropriate inferences

Inferences are as below

* Y is discrete
* Population is two F vs. M or M on Weekend vs. M on Weekday
* We will apply two proportion test.
* We will take population M who comes on weekend
* We will take population M who comes on weekdays
* Null Hypothesis -> Both having same proportion so there mean is equal and

M1 = M2 means M1-M2 = 0

* We got the p1-p2 value is -.135 so we are rejecting null hypothesis