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

**Ans:**

Transform data :

|  | Phillippines | Indonesia | Malta | India |
| --- | --- | --- | --- | --- |
| Error Free | 271 | 267 | 269 | 280 |
| Defective | 29 | 33 | 31 | 20 |

Ans:

Steps for Hypothesis testing

1. Define Null and Alternate hypothesis testing :

H0: Defective % is similar across centers

Alternate Hypothesis

H1: Defective % is NOT similar across centers

1. Identify the test statics to be used for testing validity of Null hypothesis

(Chi-square test)

chi2\_contingency(Cust\_order\_transform\_df)

==>(3.858960685820355,

0.2771020991233135,

3,

array([[271.75, 271.75, 271.75, 271.75],

[ 28.25, 28.25, 28.25, 28.25]]))

3.Significant value(Alpha) to be considered as 0.05

4.Calculate critical value [If the calculated Chi-square(3.85) is greater than the

critical value(7.81) we reject the null hypothesis.]

5.Take the decision to reject or accept Null Hypothesis based on Chi-square and

Critical value

Here Chi-square(1.59) & critical value(7.81)

Accept Null Hypothesis