

**Project By- Aadarsh Katiyar**

**Objective Questions:**

1. **The data consists of some inconsistent and missing values so ensure that the data used for further analysis is cleaned.**

**Ans-**

**Steps followed in Data Cleaning are:**

* **Replacing Error Values:** I used the Find and Replace function to replace the error value, **"I9956"** that was present in Columns R, S, and U with 0.
* **Formatting the Dates:** The “datekey\_Opening” Column was having dates in it which were not in correct format. So used the Formatting option from the Ribbon tab in Number section and selected a Date format it was previously in “2015\_8\_13” format then replaced it with “13-08-2013”.

Subsequently, I have taken out three additional columns out of the “datekey\_Opening” starting column. DAY, MONTH, and YEAR are the three new columns. The formula which was used for filling the values in Day, Month and Year Column are as follows:

**Day Column-** =DAY(U735)

**Month Column-** =TEXT(U735,"mmmm")

**Year Column-** =YEAR(U735)

* **Table formatting-** Added borders all around the table, which improved its appearance and made it simpler to see how the rows and columns differed from one another.
* **Currencies conversion to Indian Currency-** I've made a table in the "country description" worksheet with the suggested country's currency exchange rates, dated as of **January 17, 2024**. This is being done in order to convert all international currencies to Indian Rupees (INR). The newly created column is called "**Cost for Two in Indian Rupees**." and for filling the values the formula is used – **Average cost for two \* Currency Rate = Cost of Two in Indian Rupees.**

1. **Using the Lookup functions, fill up the countries in the original data using the country code.**

**Ans-**

Using the country codes from the "Country Description" worksheet, I filled in each country in the original data using the VLOOKUP function. Formula **- =VLOOKUP(C735,'country description'!$A$2:$B$16,2,0).**

1. **Create a table to represent the number of restaurants opened in each country.**

**Ans-**

To get the total number of restaurants opened in each country, I used the function COUNTIF to set up a table in a worksheet called "Objectives Que."**Formula - =COUNTIF('Raw Data Cleaned'!D2:D9552,"India")**

1. **Also, the management wants to look at the number of restaurants opened in each year, so provide them with something here.**

**Ans-**

For this I have created the table which shows the Year and Number of Restaurants and using the function COUNTIF for taking the values in Number of restaurants section.

**Formula- =COUNTIF('Raw Data Cleaned'!X2:X9552,"2010")**

1. **What is the total number of restaurants in India in the price range of 4?**

**Ans-**

As there are multiple criteria to look for so I have used the COUNTIFS Function to obtain the Number of restaurants in the price range of 4 and form it in one small table in Worksheet “Objectives Que”

**Formula- =COUNTIFS('Raw Data Cleaned'!D2:D9552,"India",'Raw Data Cleaned'!Q2:Q9552,"4")**

1. **According to the data, what is the average number of voters for the restaurants in each country?**

**Ans-**

Here we have to find out the average of voters on the basis of the country, so here I have used an AVERAGEIF Function.

**Formula- =AVERAGEIF('Raw Data Cleaned'!$D$2:$D$9552,"India",'Raw Data Cleaned'!$R$2:$R$9552)**

**Subjective Questions:**

1. **Suggest a few countries where the team can open newer restaurants with lesser competition. Which visualization/technique will you use here to justify the suggestions?**

**Ans-**

**Steps used-** Firstly, I created a pivot table using all of the data from "Raw Data Cleaned," and then I arranged the restaurant names in the Value section for the number of restaurants and countries in Rows. Data was sorted in ascending order, and the five countries at the top of the table were copied. A regular table was then made, and the data was pasted in.

**Observation-** Based on my analysis, I concluded that countries with fewer restaurants overall—as compared to those with a large number of restaurants—are likely to have less competition. Given the increased opportunities for restaurant growth. **Australia, Canada, Qatar, Indonesia, and Singapore** were the suggested nations.

**Chart Used-** I have used the **Clustered Column** chart to visualise the number of restaurants in the suggested countries.

**Location-** “1. Lesser Competition”

1. **Come up with the names of States and cities in the suggested countries suitable for opening restaurants.**

**Ans-**

**Steps used-** Using the data from the "Raw Data Cleaned" part, I created a pivot table and included the restaurant name, aggregated as count, in the Values section, along with the ratings, aggregated as average, and the countries and cities in a row column. To view the ratings that were below 3.5, used conditional formatting in a column named "Average Ratings" with the colour red.

**Observation-** Based on my analysis, the cities with the lowest ratings are the most suitable for the opening of new restaurants. Cities which I have took in suggested countries are: -

* **Australia:** Balingup, Mayfield, Montville, Paynesville, Penola
* **Canada:** Consort, Yorkton
* **Indonesia:** Bogor
* **Qatar:** Doha
* **Singapore:** Singapore

**Location-** “2. Cities in Suggested Countries”.

1. **According to the countries you suggested, what is the current quality regarding ratings for restaurants that are open there?**

**Ans-**

**Steps used-** I've made a pivot table that shows the countries along with their average ratings. I used the entire set of "Raw Data Cleaned" data to create the pivot table, filtering out the Countries that were recommended in a prior analysis and organizing the countries into rows and ratings with the average value aggregated in the values column.

**Observation-** According to the pivot table's average ratings, the suggested countries are those with scores ranging from 3.5 to 4.5, indicating a moderately good to moderately unfavourable rating.

**Chart used-** I have used the **Clustered Column Chart** to visualise the average ratings according to the suggested countries.

**Location-** “3. Average Ratings of Countries”

1. **Also, what is the current expenditure on food in the suggested countries, so we can keep our financial expenditure in control?**

**Ans-**

**Steps used-** I created a table with the names of the suggested countries and a column named "Expenditure of Food" that displays the total amount spent on food in each of the mentioned nations. With the values from the Column **"Cost for Two in Indian Currency,"** I used the SUMIF Function to accomplish this.

**Formula- =SUMIF('Raw Data Cleaned'!D735:D9546,"Australia",'Raw Data Cleaned'!Y735:Y9546)**

**Chart Used-** I have used the **Pie Chart** to visualize all the Expenditure done on the Food in the Suggested Countries respectively.

**Location-** “4. Total Expenditure of Foods”

1. **Come up with the names of restaurants from the recommended states that are our biggest competitors and also those that are rated in the lower brackets, i.e. 1-2 or 2-3.**

**Ans-**

**Steps used-** I have created a Pivot Table containing Countries and Restaurant names in Rows and Cost of Two in Indian Currency in Values section aggregated as Sum, putted the Ratings in a filter to Filter out the ratings below 3. As question asked that the competitors should have ratings bracket lower than 1-2 or 2-3.

**Observation-** According to the question, the restaurants with ratings lower than 1-2 or 2-3 that may be the biggest competitors were identified. Thus, based on the results, I've identified a few restaurants that are the main rivals which are: -

* **Australia-** Pier 70, Poets Cafe, Star Buffet
* **Canada-** Consort Restaurant
* **Singapore-** Makansutra Gluttons Bay

**Location-** “5. Biggest Competitors”

1. **Which cuisines should we focus on in the newer restaurants to get better feedback? Does the choice of cuisines affect the restaurant ratings?**

**Ans-**

**Steps used-** I have created a Pivot Table which contains Countries and Cuisines names in Rows and Ratings in a Values section which aggregated as Average. Filtered the suggested countries and highlighted the cuisines with **Green** which can for better feedbacks to the restaurant.

**Observation-** According to my analysis, the majority of individuals prefer their local cuisine over foreign cuisines, and restaurants that serve local cuisine and have higher ratings tend to receive better feedback. Thus, I've chosen a few regional dishes as well as a few more that received better reviews.

**Location-**“6. Choice of Cuisines”

1. **According to our current data, should we go for online delivery and table booking? Does that affect the customer’s ratings?**

**Ans-**

**Steps used-** For analysing this I have created a table which shows me the mode of bookings restaurants opted in the countries. I have used the COUNTIF function to calculate the number of Yes and No for the Modes.

**Observation-** According to the research, none of the restaurants in the countries were using **Online or Table** booking service. It appears to be a fantastic opportunity to take advantage of. Here restaurants have the opportunity to provide additional booking options to customers in an effort to improve customer satisfaction and build a loyal following.

**Location-** “7. Online and Table Booking”

1. **Should the team keep the rate of cuisines higher? Will that affect the feedback? According to our data are the rates of cuisines and ratings, correlated?**

**Ans-**

**Steps Used-** For this I have created one table which contains Ratings and Rates of Cuisines by which we were able to Correlate them using the CORREL Function and after that I have created the Scatter Plott to visualise it.

**Observation-** On the basis of Correlation it has been observed that there is a negligible correlation between Ratings and Rates of Cuisines which means the rates can be higher.

**Formula- =CORREL(Table5[Ratings],Table5[Rates of Cuisines])**

**Charts Used-** I have used a Scatter Plott to visualise the correlation between Ratings and Rates of Cuisines.

**Location-** “8. Correlation”