# **Tasks**

**Learners have to develop a dashboard to support the answers to the following questions and suggestions for places for newer restaurants.**

**Objective Questions**:

1. What is the total no. of tables present in the data?

Ans: 2 in the whole worksheet

1. What is the total no. of attributes present in the data?

Ans: 20 (Without adding extra columns and 26 after cleaning), and 3 more in the next worksheet.

1. How many categorical columns are there in the data? [Search about categorical and continuous data, and try to answer this question]

Ans: Total 13 discrete categorical columns present in the data.

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

Ans: Data has been cleaned for missing values in “**Cuisines”** column by using “If, Match, and Mode” function to find the most used data.

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

Ans: Countries have been matched using Vlookup with respect to Country Code.

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

Ans: Created a Pivot table w.r.t Country and Restaurant Count for getting the number of restaurants opened in each Country.

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

Ans: Created another Pivot using “Text to columns” function, by breaking the column **“Datekey\_Opening”** and Pivoted Year vs Restaurant count.

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

Ans: By using the **Countifs** function, we get the data, i.e.,**388**.

1. What is the average number of voters for the restaurants in each country according to the data?

Ans: If we create a pivot using the country name vs Votes and take the average for those, we get the total average value of **157.**

1. Calculate the average rating for all the restaurants that have price\_range < 4 and provide online delivery. Use only the “IF” function, Logical Operators, and Aggregation functions to solve this problem. **[Note: Don’t use Conditional aggregation in this question.]**

Ans: We get the value of **3.27381151** as average by using the below mentioned logic: =AVERAGE(IF(('Raw Data'!$S$2:$S$9552<4)\*('Raw Data'!$P$2:$P$9552="Yes"),'Raw Data'!$W$2:$W$9552)) as per Raw file.

1. Using Conditional formatting highlight the rows of restaurants that are in the countries or cities that you’ve suggested to the management for opening new restaurants.

Ans: Using Conditional formatting, restaurants can be opened where the ratings are higher than 3.6 and count of restaurants are lower than 40,(Marked in Green)



1. Create a new customized price column that consists of the abbreviation/symbol of the currency along with the Average\_cost\_for\_two values. [Use string operations to do this task]

Ans: The column has been created in V1:V9552 by separating the abbreviations first using Text to columns, delimiter “(“, then replaced the “)” by blank, and then joined by CONCATENATE function.

1. How can you create an array formula in Excel or Google Sheets to count the number of restaurants listed that do not offer online delivery, are in the lowest price range, and have an average cost for two people less than or equal to 250 Indian Rupees?

Ans: The answer to this question is **1685**, and this is the formula that was used: =COUNTIFS('Raw Data'!$P$2:$P$9552,"No",'Raw Data'!$S$2:$S$9552,1,'Raw Data'!$U$2:$U$9552,"<=250",'Raw Data'!M2:M9552,"Indian Rupees"

**Subjective Question:**

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: Using pivot table and charting, we can check, restaurants can be opened where the ratings are higher than 3.6 and count of restaurants are lower than 40.

For example, such countries would be Australia, Canada, Indonesia, Philippines, Qatar, Singapore, and Sri Lanka

|  |  |  |
| --- | --- | --- |
| **Country** | **Average of Rating** | **Restaurant Count** |
| Australia | 3.7 | 24 |
| Canada | 3.6 | 4 |
| Indonesia | 4.3 | 21 |
| Philippines | 4.5 | 22 |
| Qatar | 4.1 | 20 |
| Singapore | 3.6 | 20 |
| Sri Lanka | 3.9 | 20 |

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

Ans: We can easily determine this easily by filtering out on basis of factors like as follows: 1. Selecting restaurants that doesn’t have online Table booking or Online delivery, thus we can initiate those services and try opening some, 2. Then we need to filter out the suggested countries based on the previous criteria to get lesser count. 3.Then if we select the average rating value as 3.6 or above as per the basic criteria, we get these :

|  |  |  |
| --- | --- | --- |
| **Restaurant Name** | **City** | **Country** |
| The Giggling Goat | Dicky Beach | Australia |
| Stillwater on Belmore | Lorn | Australia |
| Anchorage Cafe Restaurant Wine Bar | Victor Harbor | Australia |
| Ponderosa | Doha | Qatar |
| Cafe Arabelle | Santa Rosa | Philippines |
| The Paddington | Colombo | Sri Lanka |

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

Ans: As per the ratings, quality is pretty decent as I have taken the restaurants 3.6 or higher for considerations.



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

Ans: As per the current calculation if we issue a pivot chart for average price range vs ratings and number of restaurants suggested, we can see that most of them falls between 2 and 3, and only Qatar and Singapore are at 4, where the ratings are good but no’s of restaurants are less.

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:

* Restaurants that are our biggest competitors in suggested countries: 72 in total are above 4.0 Rating.

|  |  |
| --- | --- |
| **Restaurant Name** | **Rating** |
| Mainland China Restaurant | 4.9 |
| Ooma | 4.9 |
| Ministry of Crab | 4.9 |
| Spiral - Sofitel Philippine Plaza Manila | 4.9 |
| Talaga Sampireun | 4.9 |
| Sushi Masa | 4.9 |
| Talaga Sampireun | 4.9 |

* Restaurants that are rated below 3: Only 7 found.

|  |  |
| --- | --- |
| **Restaurant Name** | **Rating** |
| Pier 70 | 2.6 |
| Consort Restaurant | 3 |
| Makansutra Gluttons Bay | 3 |
| Poets Cafe | 2.4 |
| Star Buffet | 2.9 |
| Elite Indian Restaurant | 2.4 |
| Queen's Cafe | 2.5 |

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: Cuisines with the highest votes are the ones we should focus on and yes, choice of cuisines definitely affects restaurant ratings.

|  |  |  |  |
| --- | --- | --- | --- |
| **Cuisines** | **Count of Votes** | **Country** | **Ratings** |
| Japanese, Sushi | 18 | Philippines | 4.9 |
| American, Tex-Mex | 5 | Qatar | 3.8 |
| American, Mexican | 3 | Singapore | 3.2 |
| Filipino | 3 | Philippines | 4.8 |
| Indian, Street Food | 3 | Qatar | 3.4 |
| Japanese, Korean | 3 | Philippines | 4.8 |
| Pizza, Bar Food | 3 | Australia | 4.6 |
| Sunda, Indonesian | 3 | Indonesia | 4.9 |

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

Ans: If we use a filter on Online delivery/ Table booking category, we get mixed responses along with exceptionally good ratings. So as per my calculations, we should try for these options as these to be considered most versatile of them all and people likes versatility, and this data is based on suggested countries only.



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: As per the data, the more the rate, the better the votes and the ratings as well, so keeping the rates high is the move here and this is correlated, the correlation index is 0.34.

Here, for 4 price range, rating is 3.8 which is highest, and votes are better too.

|  |  |  |  |
| --- | --- | --- | --- |
| **Price\_range** | **Average\_Cost\_for\_two** | **Average of Votes** | **Average of Rating** |
| 1 | 275 | 45 | 2.4 |
| 2 | 597 | 148 | 3.1 |
| 3 | 5177 | 444 | 3.7 |
| 4 | 1849 | 369 | 3.8 |
| **Grand Total** | **1199** | **157** | **3** |

1. What is the distribution of the number of restaurants of different price ranges in all the countries?

Ans: By this comparison in a pivot table and chart, we can see the distribution between number of restaurants vs price ranges in all countries.

1. Explain your approach in brief for suggesting countries/cities in order to open new restaurants, if the objective and subjective questions would have been given to assist you. **[you have to give bullet pointers in order to answer this question]**

Ans:

**Analyzing Market Demand**:

* + Use the "Number of Restaurants" and "Average Rating" metrics to identify countries/cities with high demand and positive reception for restaurants.
  + Utilize "Average\_Cost\_for\_two" to understand the affordability factor in different areas.
* **Identifying Untapped Markets**:
  + Examine countries/cities with fewer existing restaurants, potentially indicating underserved markets.
  + Look for locations with low competition but high population density or tourism traffic.
* **Assessing Economic Viability**:
  + Consider the currency and average cost for two to evaluate the economic feasibility of opening a restaurant in different countries/cities.
  + Analyze GDP per capita and economic growth indicators of potential locations.

**The dashboard must consist of Year-wise and country slicers.**