**ZOMATO RESTAURANT EXPANSION**

**OBJECTIVE QUESTIONS**

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

Solution:

The total number of tables present in the data is **one**. Although the workbook contains 11 worksheets, the cleaned data is consolidated into a single table, which can be found in the "Raw Data" worksheet. This table is structured for dynamic use across the entire workbook.

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

Solution:

There are **31** attributes present in the cleaned dataset.

1. **How many categorical columns are there in the data?**

Solution:

Categorical columns contain discrete, limited values. In this dataset, there are **21** categorical columns: RestaurantID, RestaurantName, CountryCode, CountryName, City, Address, Locality, LocalityVerbose, Cuisines, Currency, SYMBOL, Has\_Table\_booking, Has\_Online\_delivery, Is\_delivering\_now, Switch\_to\_order\_menu, Price\_range, Rating, Opening Year, Uniques\_cuisines, Uniques\_city, and Unique\_country.

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

**Country Name:** Column Added and filled up values using VLOOKUP.  
**SYMBOL:** Symbol Column added entered the symbols using XLOOKUP.  
**Date of Opening:** Column created and entered the date format.  
**Opening Year:** Column created and added the year using LEFT function.  
**Average cost of two value:** Column created as per guidelines and added the symbol using CONCATENATE function.  
**Price Range:** Described price range using IF functions.  
**Unique Cuisines, Unique Countries, Unique Cities:** Values has been identified with the help of COUNTIF.

1. **Using the LookUp functions, fill up the countries in the original data using the country code.**  
     
   =VLOOKUP(C2,'country description'!$A$1:$B$16,2,0)
2. **Create a table to represent the number of restaurants opened in each country.**

|  |  |
| --- | --- |
| **COUNTRY** | **NUMBER OF RESTAURANTS** |
| India | 8652 |
| United States of America | 434 |
| United Kingdom | 80 |
| Brazil | 60 |
| South Africa | 60 |
| United Arab Emirates | 60 |
| New Zealand | 40 |
| Turkey | 34 |
| Australia | 24 |
| Philippines | 22 |
| Indonesia | 21 |
| Sri Lanka | 20 |
| Singapore | 20 |
| Qatar | 20 |
| Canada | 4 |
| Grand Total | 9551 |

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

|  |  |
| --- | --- |
| **YEAR** | **NUMBER OF RESTAURANTS** |
| 2010 | 1080 |
| 2011 | 1098 |
| 2012 | 1022 |
| 2013 | 1061 |
| 2014 | 1051 |
| 2015 | 1024 |
| 2016 | 1027 |
| 2017 | 1086 |
| 2018 | 1102 |
| Grand Total | 9551 |

This table and chart provide an overview of the yearly restaurant openings, with a total of 9,551 restaurants opened between 2010 and 2018.

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

**Solution:** **388**

**Formula:** =COUNTIFS('Raw Data'!D:D,"India",'Raw Data'!R:R,"4")

This formula counts the number of rows in the "Raw Data" worksheet where the country is India (column D) and the price range is 4 (column R). The result is 388, indicating that there are 388 restaurants in India with a price range of 4.

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

|  |  |
| --- | --- |
| **COUNTRY** | **AVERAGE NUMBER OF VOTERS** |
| Indonesia | 772.10 |
| United Arab Emirates | 493.52 |
| Turkey | 431.47 |
| United States of America | 428.22 |
| Philippines | 407.41 |
| South Africa | 315.17 |
| New Zealand | 243.03 |
| United Kingdom | 163.80 |
| Qatar | 163.80 |
| Sri Lanka | 146.45 |
| India | 137.21 |
| Australia | 111.42 |
| Canada | 103.00 |
| Singapore | 31.90 |
| Brazil | 19.62 |
| Grand Total | 156.91 |

For each country, the table provides the average number of voters for restaurants. This data is presented as the mean number of voters recorded for each country's restaurants, giving a clear picture of voter engagement across different regions. The table allows for direct comparison between countries, showing which regions have higher or lower average voter participation.

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.]**

**Approach:**

Identify Criteria:

Price Range: The price range should be less than 4.

Online Delivery: The restaurant should offer online delivery.

Use the AVERAGEIFS Function:

**Solution:**

To find the average rating of restaurants with a price range of less than 4 and that provide online delivery, you can use the following formula:

=AVERAGEIFS('Raw Data'!U:U, 'Raw Data'!R:R, "<4", 'Raw Data'!O:O, "Yes")

**Explanation:**

'Raw Data'!U:U: The column containing ratings.

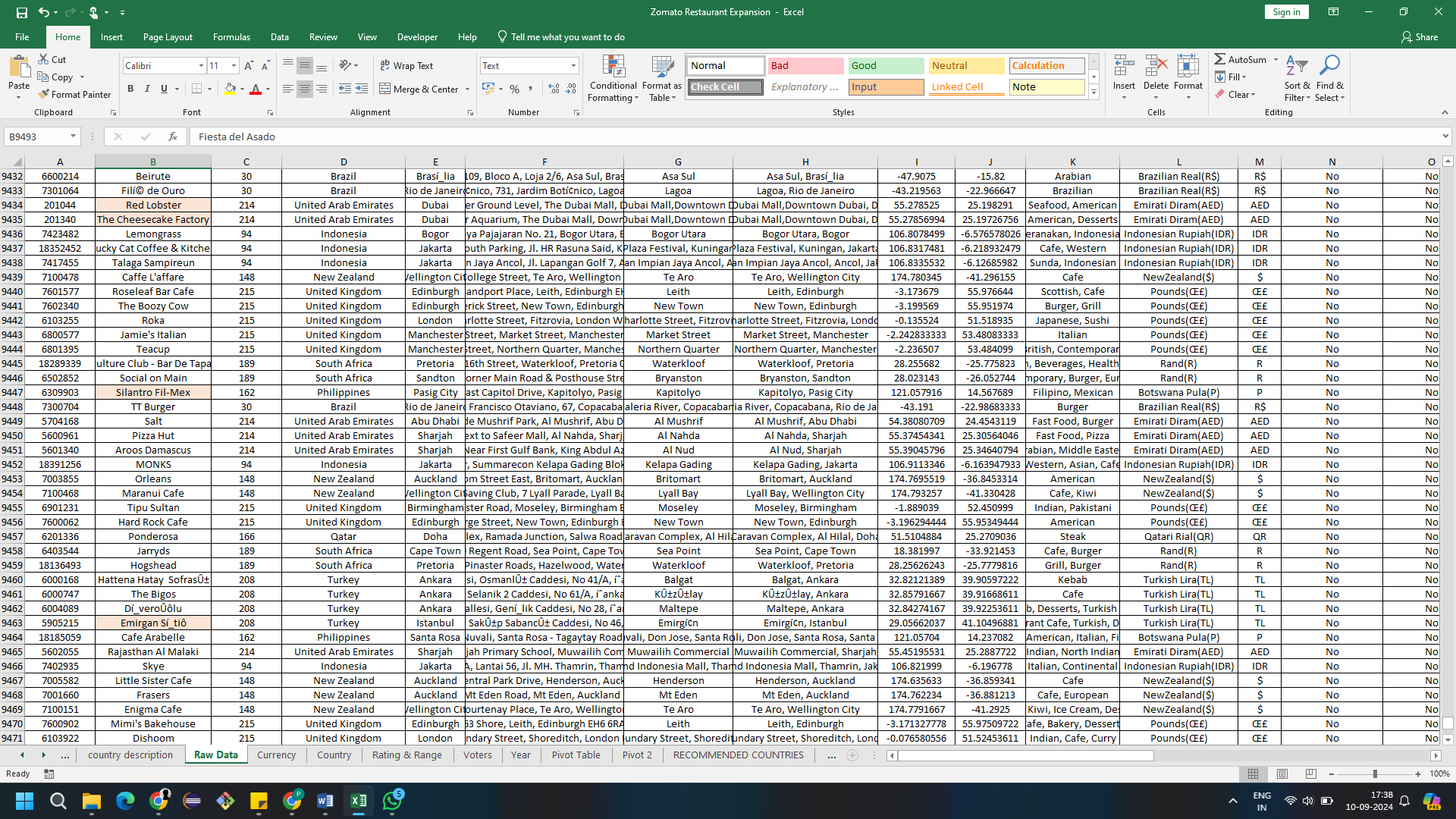
'Raw Data'!R:R, "<4": The condition to filter restaurants with a price range less than 4.

'Raw Data'!O:O, "Yes": The condition to filter restaurants that provide online delivery.

**Result:**

The formula calculates the average rating of the restaurants that meet both conditions, resulting in an average rating of 3.27.

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



* To highlight the rows of restaurants located in the countries or cities suggested for new restaurant openings, use conditional formatting.

Explanation

* Select the "RestaurantName" column.
* Go to Home -> Conditional Formatting -> New Rule.
* Choose Use a formula to determine which cells to format.
* Enter the formula =**OR(E1="Tangerang City", E1="Pasig City", E1="Istanbul", E1="Dubai"),** then click Apply and OK.

This will highlight the "RestaurantName" column when the city is **Tangerang City, Pasig City, Istanbul and Dubai.**

1. **Create a new customized price column that consists of the abbreviation/symbol of the currency along with the Average\_cost\_for\_two value.**

To create a new customized price column that combines the currency abbreviation or symbol with the "Average Cost for Two" value, we use a string operation formula in Excel. The formula utilized is **=CONCATENATE(M2," ",T2).** This formula effectively merges the content of two cells—M2 (which contains the currency symbol) and T2 (which contains the cost value)—with a space in between for readability.

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?**

**Formula: SUMPRODUCT(('Raw Data'!O:O = "No")\*('Raw Data'!AB:AB = "Low")\*('Raw Data'!Z:Z <= 250))**

Using this formula, the resulting count in the Excel cell is 1676, representing the number of restaurants that meet all the specified criteria.

* 'Raw Data'!O:O = "No": This checks if the restaurant does not offer online delivery (i.e., "No" in column O).
* 'Raw Data'!AB:AB = "Low": This checks if the restaurant is in the lowest price range (i.e., "Low" in column AB).
* 'Raw Data'!Z:Z <= 250: This checks if the average cost for two people is less than or equal to 250 Indian Rupees.

**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?**

The four countries identified - Indonesia, United Arab Emirates (UAE), Turkey, and the Philippines- meet these criteria based on a combination of factors including voter engagement, the absence of online delivery options, and favourable pricing dynamics.

**Key Criteria for Selection:**

1. High Average Number of Voters: A higher number of voters in the sector suggests strong consumer engagement and interest in dining experiences. It indicates a robust food culture where people actively participate in rating and reviewing restaurants, which is a proxy for market demand.
2. Absence of Online Delivery Options: The lack of online delivery infrastructure can be seen as an opportunity to fill a gap in the market. While this might indicate lower technological adoption, it also presents a chance to introduce innovative delivery solutions, which could give the new restaurant a competitive edge.
3. Favourable Price Range: A good price range that aligns with local spending habits is crucial for success. If consumers are willing to spend a significant amount on dining out, there’s potential for profitability even with moderate competition.

Suggested countries are **Indonesia, United Arab Emirates, Turkey, Philippines**

The Clustered Column with Area visualization provides a dual perspective by comparing the number of restaurants (competition) with the number of voters (market demand) across selected countries. This helps in identifying markets with lesser competition but strong demand, justifying why Indonesia, UAE, Turkey, and the Philippines are recommended for new restaurant openings.

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

Four cities - Tangerang City (Indonesia), Pasig City (Philippines), ÛÁstanbul (Turkey), and Dubai (UAE) has been identified as prime locations for opening new restaurants. These cities have been chosen based on a combination of factors including the number of existing restaurants, average voter engagement, and the absence of online delivery services in some cases.

**DETAILED INSIGHTS BY CITY:**

**Tangerang City, Indonesia**

**Current Landscape:** Only 2 restaurants are currently operating in Tangerang City, but there is a high level of voter engagement.

**Opportunity:** The combination of low competition and high consumer interest makes this city an excellent candidate for a new restaurant, particularly one that could introduce online delivery.

**Pasig City, Philippines**

**Current Landscape:** Pasig City has 3 restaurants, similar to Tangerang, with high average voter counts.

**Opportunity:** Like Tangerang, Pasig City’s high voter engagement combined with minimal competition presents a significant opportunity. Launching a restaurant here, particularly with online delivery options, could capture a considerable market share.



Picture Describing Number of Restaurants and average Number of Votes &Rating in given countries.

**ÛÁstanbul, Turkey**

**Current Landscape:** Despite having 14 restaurants, İstanbul City boasts a high number of average votes, indicating strong consumer demand.

**Opportunity:** The robust market demand in İstanbul, even in a more competitive environment, suggests that a new restaurant could still thrive, particularly if it offers a unique concept or superior quality.

**Dubai, UAE**

**Current Landscape:** Dubai, like İstanbul, has 14 restaurants but also shows high voter engagement.

**Opportunity:** Dubai’s dynamic and affluent market supports multiple dining options, and the high voter engagement indicates that consumers are willing to try new restaurants. Opening a restaurant here could succeed, particularly if it targets a specific niche or offers exceptional service and quality.

The selected cities- Tangerang City, Pasig City, ÛÁstanbul, and Dubai each present unique opportunities for opening new restaurants. Tangerang and Pasig offer the advantage of low competition with high demand, making them ideal for introducing new dining experiences and online delivery services. Meanwhile, ÛÁstanbul and Dubai though more competitive, demonstrate a high level of consumer engagement, suggesting that there is still room for growth and success with the right restaurant concept. By targeting these cities, the restaurant brand can strategically enter markets with a mix of low competition and high demand, ensuring a higher likelihood of success.

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

The average quality ratings of restaurants currently operating in the four suggested countries, where ratings are based on a 5-point scale

These ratings reflect the general satisfaction of customers with the dining options available in these countries.

While the ratings indicate high satisfaction, there is always room for innovation. New restaurants unique dining experiences that could elevate the overall rating even further.

The current quality ratings in Indonesia, the Philippines, Turkey, and the UAE suggest that these markets are characterized by high standards and discerning customers. New restaurants entering these markets will need to match or exceed these ratings to succeed. By focusing on maintaining exceptional quality, leveraging successful strategies from the Philippines, and introducing innovative dining experiences, new entrants can establish themselves as competitive players in these thriving markets.

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

Average expenditure on food in following countries are provided in the given chart

The chart shows a wide range of average dining costs across different countries, indicating diverse market behaviours. Singapore and New Zealand represent high-cost markets suitable for premium dining experiences, while countries like India, Turkey, and Sri Lanka reflect more price-sensitive environments that would benefit from budget-friendly options.

For the suggested countries:

**Philippines** and **UAE** can support premium pricing strategies, as consumers are willing to spend more on dining experiences.

**Indonesia** offers a mid-range market, where moderate pricing should be maintained to ensure profitability.

**Turkey** is a highly price-sensitive market, suggesting the need for affordable, budget-friendly restaurant options.

5. **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.**

In the recommended city the names of the restaurants that are biggest competitors with rating above 4 are given below. And also, in the recommended countries there is no restaurants in the lower brackets range (1- 3).



In the recommended city the names of the restaurants that are rated in lower brackets (<4) are given below.



**Approach:**

**Identifying Competitors:**

The first step was to identify restaurants in the recommended regions (Indonesia, Philippines, Turkey, and UAE) with ratings above 4, as these establishments represent our biggest competitors.

A second set of data was created to identify restaurants in these regions with ratings lower than 4, particularly focusing on those with ratings between 2 and 3. However, since no restaurants were rated below 3, we shifted focus to restaurants with ratings just below 4.

**Analysis of High-Rated Competitors:**

The competitors with ratings above 4 were analyzed, as these establishments pose the biggest threat due to their high popularity and positive customer feedback.

**Analysis of Low-Rated Restaurants:**

Restaurants with ratings below 4 were analyzed to understand the weak points in the region's dining offerings, allowing us to exploit opportunities for improvement.

**Insights:**

**Top Competitors by Country:**

Indonesia: Talaga Sampireun is a strong competitor with a near-perfect rating of 4.90.

Philippines: Silantro Fil-Mex and Locavore stand out with ratings of 4.90 and 4.80, respectively, indicating strong performance in the local dining scene.

Turkey: Draft Gastro Pub and Starbucks both have top-tier ratings of 4.90, showing dominance in the market.

United Arab Emirates: Tresind - Nassima Royal Hotel and Carnival By Tresind have achieved stellar ratings of 4.90, making them premium competitors.

**Lower-Rated Restaurants:**

Indonesia: Onokabe has the lowest rating at 3.70, indicating areas for improvement in service or quality, providing us with an opportunity to capture market share.

Turkey: Huqqa and Leman Kí\_ltí\_r both show moderate ratings at 3.70, which indicates customer dissatisfaction or unmet expectations.

United Arab Emirates: Red Lobster has a notably low rating of 3.20, while The Farm at 3.90 indicates a possible vulnerability in high-end dining.

Interestingly, no restaurants in the selected regions have ratings between 2 and 3, suggesting a polarized market where most restaurants either perform very well or moderately.

**Suggestions:**

**Positioning Against High-Rated Competitors:**

Target Differentiation: For regions with strong competitors, focus on offering unique selling points such as more diverse cuisine options, better online delivery services, or enhanced customer service.

Tailored Marketing: Promote signature dishes that cater to local tastes but differ from what the top competitors offer, such as a fusion of regional and international cuisines.

High Customer Engagement: Implement loyalty programs or exclusive dining experiences to capture attention and drive customer loyalty away from well-established competitors.

**Leveraging the Weakness of Lower-Rated Restaurants:**

Exploit Gaps in Service Quality: In regions like Indonesia and Turkey where restaurants like Onokabe and Huqqa show lower ratings, focus on areas of service improvement, such as faster response times, fresher ingredients, or more efficient delivery services.

Promote Quality and Affordability: As Red Lobster in UAE shows lower ratings, use this as an opportunity to highlight superior customer experience and value-for-money, possibly offering similar menu items with better execution.

**Opportunity for Innovation:**

Customizing Cuisines: The high success rate of restaurants offering locally popular cuisines like Filipino-Mexican in the Philippines or Indian-Continental in UAE shows that tailoring menus to local preferences can result in high ratings. Offering fusion or niche options that other competitors have not explored can give us an edge.

**Focus on Moderate-Rating Regions:**

In regions like Turkey, which has several restaurants with ratings just under 4, ensure our restaurant offerings address the gaps by prioritizing quality and service, differentiating our brand from the slightly underperforming competition.

By addressing these factors, we can position our new restaurants to succeed in the competitive landscape of these regions.

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

The data provided showcases the average ratings for various cuisines across the selected cities in Indonesia, the Philippines, Turkey, and the UAE.

The data highlights the importance of choosing the right cuisines to ensure better customer feedback and higher restaurant ratings in each country:

**Suggestions:**

**Indonesia:** Focus on traditional Sunda and regional cuisines, as they receive higher ratings. Local flavors resonate well with customers, so incorporating these will likely boost feedback.

**Philippines:** Filipino and Filipino-Mexican fusion dishes should be emphasized, as they score the highest. These fusion cuisines cater to both traditional and experimental tastes, ensuring broader appeal.

**Turkey:** Stick to local favorites such as Bar Food and Desserts, which perform well in terms of ratings. Avoid international options like Italian cuisine, which receive lower feedback.

**UAE:** Prioritize highly rated Indian and Continental dishes. These cuisines are well-received, while combinations like Seafood-American should be avoided due to lower ratings.

By tailoring the cuisine offerings to match local preferences and avoiding less popular choices, new restaurants can enhance customer satisfaction, achieve higher ratings, and ultimately ensure better business success.



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

|  |  |  |  |
| --- | --- | --- | --- |
| **Online Delivery Available** | No | Yes | Grand Total |
| **Number of Restaurants** | 7100 | 2451 | 9551 |
| **Average of Rating** | 2.75 | 3.29 | 2.89 |

We must go for go for online delivery, The restaurant which has online delivery are having significantly higher rating.

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Booking Available** | No | Yes | Grand Total |
| **Number of Restaurants** | 8393 | 1158 | 9551 |
| **Average of Rating** | 2.81 | 3.48 | 2.89 |

We must go for go for table booking, the restaurants which has online delivery are having significantly higher rating.

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?**

|  |
| --- |
| **Correlation Value of Rate of cuisine and ratings in selected Cities** |
| 0.827083 |

Used the CORREL function in Excel to calculate the correlation coefficient between the rates of cuisines and the ratings they received.

**Formula used:** =CORREL(average\_cost\_of\_two, ratings\_column)

The resulting correlation coefficient was **0.827083**

The correlation value of **0.827083** indicates a strong positive correlation between the rates of cuisines and their ratings.

This means that as the price of a cuisine increases, the rating slightly increases, and has positive effect.

**Insights:**

The strong positive correlation of 0.827 suggests that there is a notable relationship between the price of cuisines and the ratings they receive. Higher prices tend to be associated with higher ratings, indicating that customers may perceive higher-priced cuisines as providing better quality or value. This correlation implies that price can be a significant factor in how customers rate the cuisines, potentially reflecting their expectations for quality and overall dining experience.

**Suggestions:**

**Align Pricing with Quality**: Given the strong positive correlation, consider adjusting pricing to reflect the perceived value and quality of the cuisines. Higher prices might be justified if they align with enhanced quality or exceptional dining experiences, potentially leading to better ratings.

**Focus on Value**: Ensure that the higher prices correspond to tangible improvements in taste, service, and ambiance. Investing in quality and enhancing the overall customer experience can help maintain or improve ratings while supporting higher pricing.

**Monitor Customer Feedback**: Regularly gather and analyse customer feedback to understand how price adjustments impact ratings and satisfaction. This will help fine-tune pricing strategies to better align with customer expectations and preferences.

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

The distribution of restaurants by price range highlights that the majority of the market is focused on affordability, with nearly 80% of restaurants falling into the lower two price ranges. This suggests a strong preference for budget-friendly dining options across 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 not been given to assist you.**

To determine the best countries and cities for opening new restaurants, I would start by analysing the raw data to extract meaningful insights. Here's how I would approach

* **Analyse Consumer Spending Trends:**
* Leverage the "Price Range" column to create a Pivot Table.
* Identify trends in food expenses across various locations.
* Focus on areas with higher spending for potential profitability.
* **Assess Population and Market Potential:**
* Use the "Average Number of Votes" to gauge local population engagement with dining.
* Identify regions with high voter engagement as potential strong markets.
* Target areas with a substantial population base for long-term business growth.
* **Evaluate Competition and Restaurant Ratings:**
* Look for areas with high demand but low competition.
* Identify regions with fewer restaurants but higher votes as an opportunity.
* Assess restaurant ratings in existing establishments to align with customer expectations.
* **Select Appropriate Cuisines:**
* Analyse cuisine preferences and ratings using Pivot Tables.
* Identify the best-rated cuisines in specific regions to ensure alignment with local tastes.
* Design a targeted and appealing menu based on regional culinary preferences.
* **Consider Online Delivery Availability:**
* Identify cities where competitors have limited or no online delivery.
* Offer online delivery in such cities to differentiate the new restaurant and attract a broader customer base.
* **Evaluate Table Booking Services:**
* Check if existing restaurants in the target area offer table booking services.
* Ensure that the new restaurant provides this service for a better customer experience and to attract more diners.
* **Combine All Factors:**
* Integrate insights from spending trends, market potential, competition, cuisine preferences, online delivery, and table booking services.
* Arrive at well-informed decisions regarding the best countries and cities for restaurant openings.

This comprehensive approach covers all critical aspects to ensure the most promising locations are chosen for opening new restaurants.