

Restaurant Data Analysis

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**(Data Science NS -November 23)**

# Objective Questions

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

### The data set given had some inconsistencies which were corrected as following.

Datekey\_opening Column-

### The format of the column was corrected and was made to proper Date format. 3 news columns (Day, Month, Year) were created from the Datekey\_coloumn for the analysis.

Currency column-

### The currency column was split into two columns (currency, currency symbol) using excel functions.

**Border –**

### The data provided did not had any border, so I added borders, so that

the data looks good.

WRAP TEXT –

The text in the data were overlapping and due to this it was not understandable. And for overcoming this, wrap text was applied to the data.

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

Using the Lookup Functions, the country column in the original data was filled up using the country code in the Country description sheet.

The look up formula used was-

=VLOOKUP (C2,'COUNTRY DESCRIPTION'!$A$2:$B$16,2,FALSE)

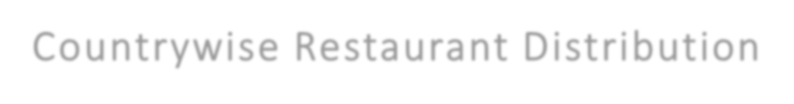
The details of analysis can be found in excel file-sheet-RAW DATA

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

The below table represents the number of restaurants opened in each country.

|  |  |
| --- | --- |
| COUNTRY | NO OF RESTAURANTS |
| Australia | 24 |
| Brazil | 60 |
| Canada | 4 |
| India | 8652 |
| Indonesia | 21 |
| New Zealand | 40 |
| Philippines | 22 |
| Qatar | 20 |
| Singapore | 20 |
| South Africa | 60 |
| Sri Lanka | 20 |
| Turkey | 34 |
| United Arab Emirates | 60 |
| United Kingdom | 80 |
| United States of America | 434 |

The above data has been visualised in the pie chart given below.



Countrywise Restaurant Distribution

Singapore 20 New Zealand 40

Australia

South Africa 60

Brazil

Canada India Indonesia

New Zealand

Qatar 20

Philippines 22

Indonesia 21

Sri Lanka 20

Turkey 34

United Arab Emirates 60

United Kingdom 80

Philippines

India 8652

Other 628

Qatar

Singapore

United States of

America 434

South Africa

Sri Lanka

Canada 4

Australia 24

Brazil 60

The details of analysis can be found in excel file

-sheet-COUNTRYWISE RESTAURANT

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

From the analysis it was understood that highest number of restaurants were opened in 2018, where 1102 restaurants where opened. Similarly, the lowest number of restaurants were opened in 2012, where 1022 restaurants where opened.

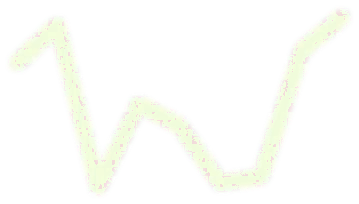
There is no visible trend in the number of restaurants opened and year.

The table given below gives information about the number of restaurants opened in each year.

|  |  |
| --- | --- |
| Year | Number Of Restaurant Opened |
| 2010 | 1080 |
| 2011 | 1098 |
| 2012 | 1022 |
| 2013 | 1061 |

|  |  |
| --- | --- |
| 2014 | 1051 |
| 2015 | 1024 |
| 2016 | 1027 |
| 2017 | 1086 |
| 2018 | 1102 |

The above data has been visualised using a line chart as shown below.



Number Of Restaurant Opened Each Year

1110

1100

1090

1080

1070

1060

1050

1040

1030

1020

1010

2008

2010

2012

2014

2016

2018

2020

The details of analysis can be found in excel file

-sheet-YEARWISE RESTAURANT

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

There is a total number of 388 restaurants opened in India in the price range of 4. The Chart below shows details when country slicer is applied for india.



Number Of Restaurants In Different

Price Range

4

388

3

1111

2

2858

1

4295

The details of analysis can be found in excel file

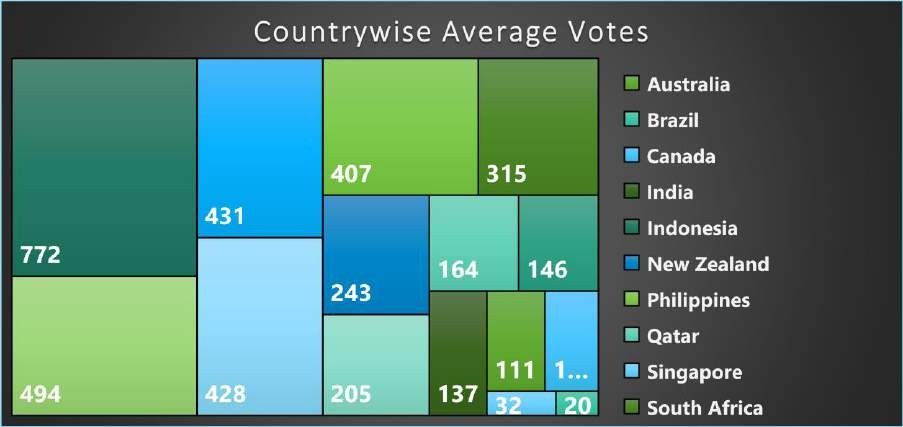
-sheet-price range

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

The table given below shows the average number of voters for each country.

|  |  |
| --- | --- |
| COUNTRY | Average Number  of Voters |
| Australia | 111 |
| Brazil | 20 |
| Canada | 103 |
| India | 137 |
| Indonesia | 772 |
| New Zealand | 243 |

|  |  |
| --- | --- |
| Philippines | 407 |
| Qatar | 164 |
| Singapore | 32 |
| South Africa | 315 |
| Sri Lanka | 146 |
| Turkey | 431 |
| United Arab Emirates | 494 |
| United Kingdom | 205 |
| United States of America | 428 |

The above data has been visualised as given below.

Details can be found in

Excel file-sheet- COUNTRY VS AVG VOTE

# Subjective Question

## 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?

There are many factors which determine the success of a new restaurant. In this case three main factors were considered for the analysis. Number of restaurants in each country, Average Ratings of each country, Sum of votes of each country.

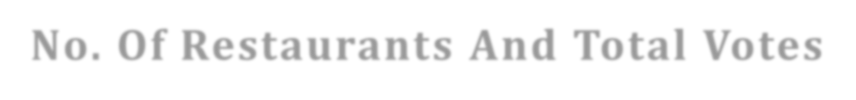
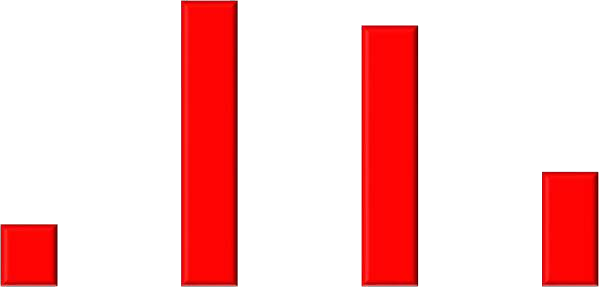
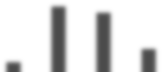
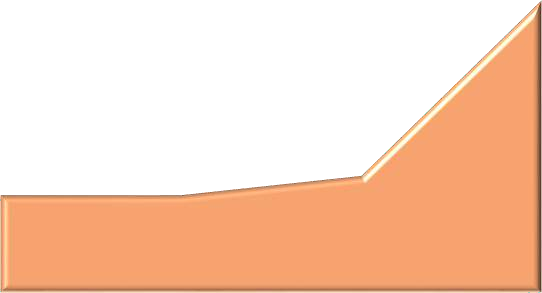
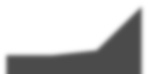
Approach:

A pivot table was created with countries in the row section. Average ratings, count of restaurant id and sum of votes in the value field. Data was sorted to get 10 countries with lowest number of restaurants. Then these 10 countries were filtered based on average ratings between 3-4. Then these filtered countries were again filtered based on maximum number of votes among them to finally select four countries which has the least competition.

Suggested Countries:

Australia Brazil Singapore Sri Lanka

The above analysis was visualised using a combination chart as shown below.



**No. Of Restaurants And Total Votes**

3500

3000

2500

2000

1500

1000

500

0

70

60

50

40

30

20

10

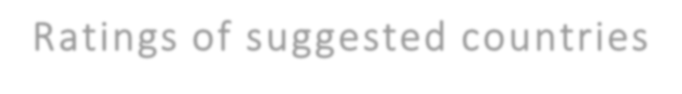
0

**Singapore Sri Lanka Australia Brazil**

No.Of Restaurants Total votes

**TOTAL VOTES**

**NUMBER OF RESTAURANTS**



Ratings of suggested countries

Singapore Sri Lanka Australia Brazil

3.87 3.85

3.66

3.58

Details can be found in

Excel file-sheet-NEW RESTAURANT ANALYSIS

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

Approach:

A pivot table was created with country and Cities in the Row section and count of restaurant ids, average ratings in value field.

The table given below shows the details .

|  |  |  |  |
| --- | --- | --- | --- |
| City | Count of RestaurantID | Average of  Rating | Sum of Votes |
| Australia | 5 | 3.76 | 912 |
| Phillip Island | 1 | 3.70 | 351 |
| Hepburn Springs | 2 | 3.80 | 285 |
| Middleton Beach | 1 | 3.80 | 176 |
| Inverloch | 1 | 3.70 | 100 |

|  |  |  |  |
| --- | --- | --- | --- |
| Brazil | 40 | 3.61 | 776 |
| Sí£o Paulo | 20 | 3.68 | 559 |
| Brasí\_lia | 20 | 3.55 | 217 |
| Singapore | 20 | 3.58 | 638 |
| Singapore | 20 | 3.58 | 638 |
| Sri Lanka | 20 | 3.87 | 2929 |
| Colombo | 20 | 3.87 | 2929 |
| Grand Total | 85 | 3.67 | 5255 |

Suggested cities in suggested countries- Australia-

Phillip Island Hepburn Springs Middleton Beach Inverloch

Brazil-

Sí£o Paulo Brasí\_lia

Singapore-

Singapore Sri Lanka-

Columbo

Details can be found in

Excel file-sheet-NEW RESTAURANT ANALYSIS

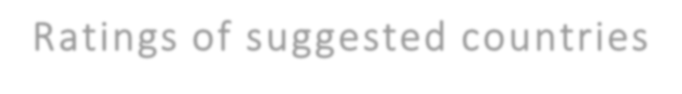
## According to the countries you suggested, what is the current quality regarding ratings for restaurants that are open there?

The quality of rating for restaurants already open in the suggested country can be understood from the following table and the visualisation chart below.

Among the selected countries also the highest rating is for sri Lanka which is 3.87 and lowest rating is for Brazil 3.85.

The 4 countries suggested are such that they have average ratings higher than 3.5. which indicated superior quality.

|  |  |
| --- | --- |
| Country | AVERAGE RATING |
| Singapore | 3.58 |
| Sri Lanka | 3.87 |
| Australia | 3.66 |
| Brazil | 3.85 |



Ratings of suggested countries

Singapore Sri Lanka Australia Brazil

3.87 3.85

3.66

3.58

Details can be found in

Excel file-sheet-NEW RESTAURANT ANALYSIS

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

The sum of current expenditure on the suggested countries are given in the table below. The expenditure has been given in currencies of respective countries.

|  |  |
| --- | --- |
| Country | Sum of average cost for 2 |
| Australia | 578-$ |
| Brazil | 8080-R$ |
| Singapore | 3115-$ |
| Sri Lanka | 47500-Rs. |

Details can be found in

Excel file-sheet-NEW RESTAURANT ANALYSIS

## 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.

Four pivot tables have been created corresponding to four countries chosen with country and restaurant name in row section, city in filter section and average ratings in value field.

Biggest competitor

These are the restaurants that has the highest rating and has been marked in green colour in the table.

Least rated

These restaurants have been marked in yellow colour and are present in the lower most portion of the table with the rating between 1 and 3.

Australia

|  |  |  |
| --- | --- | --- |
| Australia | 3.66 | 2674 |
| Bridge Road Brewers | 4.60 | 237 |
| 1918 Bistro & Grill | 4.40 | 339 |
| Vivo Bar and Grill | 4.40 | 381 |
| Pig and Whistle | 4.10 | 87 |
| The Belle General | 4.10 | 56 |
| 5 Little Pigs | 4.10 | 40 |

Highest rated

|  |  |  |
| --- | --- | --- |
| Star Buffet | 2.90 | 11 |
| Pier 70 | 2.60 | 16 |
| Poets Cafe | 2.40 | 193 |

Lowest rated Brazil

|  |  |  |
| --- | --- | --- |
| Brazil | 3.85 | 1177 |
| Braseiro da Gíçvea | 4.90 | 40 |
| Skye - Hotel Unique | 4.80 | 59 |
| TT Burger | 4.80 | 19 |
| Confeitaria Colombo | 4.80 | 29 |
| Aprazí\_vel | 4.70 | 44 |
| Bibi | 4.70 | 24 |
| Veloso | 4.60 | 58 |
| Aconchego Carioca | 4.60 | 24 |
| Sushi Leblon | 4.60 | 25 |
| Balada Mix | 4.60 | 21 |
| Les 3 Brasseurs | 4.60 | 30 |
| Zazíç BistríÇ Tropical | 4.60 | 21 |
| Garota de Ipanema | 4.60 | 59 |
| Coco Bambu | 4.55 | 47 |
| Cervantes | 4.50 | 29 |
| Cantina Famiglia Mancini | 4.50 | 49 |
| Templo da Carne - Marcos Bassi | 4.40 | 17 |
| Talho Capixaba | 4.40 | 13 |
| Terraí\_o Itíçlia | 4.40 | 37 |
| Esquina Mocotí\_ | 4.40 | 22 |
| Taco Pep | 4.30 | 29 |
| Paribar | 4.30 | 46 |

|  |  |  |
| --- | --- | --- |
| Filí© de Ouro | 4.30 | 14 |
| Meats | 4.30 | 68 |
| A Figueira Rubaiyat | 4.30 | 39 |
| Shirley | 4.20 | 8 |
| Amir | 4.20 | 11 |
| Leme Light | 4.20 | 7 |
| Jiquitaia | 4.10 | 15 |
| Villa Tevere | 4.10 | 12 |
| Sainte Marie Gastronomia | 4.10 | 11 |
| Outback Steakhouse | 4.00 | 10 |
| Pesqueiro Eco Gourmet | 4.00 | 7 |
| D.O.C Ristorante | 4.00 | 5 |

Highest rated

|  |  |  |
| --- | --- | --- |
| Quiosque Chopp Brahma | 1.00 | 1 |
| Sandubas Cafí© | 1.00 | 2 |
| Cantinho da Gula | 1.00 | 0 |
| Super Grill | 1.00 | 2 |
| Divino Fogí£o | 1.00 | 2 |

Lowest rated Singapore

|  |  |  |
| --- | --- | --- |
| Singapore | 3.58 | 638 |
| Al'frank Cookies | 4.20 | 29 |
| Fratini La Trattoria | 4.10 | 35 |
| Cut By Wolfgang Puck | 4.00 | 33 |

Highest rated

Lowest rated (between 1-3) is not present in Singapore. Sri Lanka

|  |  |  |
| --- | --- | --- |
| Sri Lanka | 3.87 | 2929 |
| Ministry of Crab | 4.90 | 203 |
| Simply Strawberries By Jagro | 4.50 | 146 |
| The Sizzle | 4.20 | 286 |
| Butter Boutique | 4.20 | 49 |
| Cricket Club Cafe | 4.20 | 171 |
| Arabian Knights | 4.20 | 158 |
| Burger's King | 4.10 | 199 |
| Carnival Ice Cream | 4.10 | 122 |
| Cafe Beverly | 4.10 | 58 |
| The Commons | 4.00 | 209 |
| T.G.I. Friday's | 4.00 | 166 |
| The Manhattan FISH MARKET | 4.00 | 196 |
| Upali's | 4.00 | 114 |

Highest rated

|  |  |  |
| --- | --- | --- |
| Queen's Cafe | 2.50 | 93 |
| Elite Indian Restaurant | 2.40 | 240 |

Lowest rated

Location-

excel file-sheet -RESTAURANT COMPETITOR ANALYSIS

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

Separate cuisine analysis for each country were carried out using separate pivot tables, where the cuisines were compared with their corresponding ratings and respective average cost for 2 persons .

Few cuisines each from the suggested countries were chosen such that they have average ratings higher than 4.00 and the cost for two person in each restaurant is in near by range of the average cost for two person in each country.

Observation

-The local cuisine for corresponding countries has the highest ratings among all.

-Some Cuisines of international popularity are also having the highest ratings.

Average cost for two in Australia is 24

|  |  |  |
| --- | --- | --- |
| Australia | Rating | Cost for two |
| Pizza, Bar Food | 4.60 | 20 |
| Mediterranean, Seafood | 4.40 | 30 |
| Modern Australian, Australian | 4.40 | 30 |
| Australian | 4.10 | 20 |
| Breakfast, Modern Australian | 4.10 | 20 |

Average cost for two in Brazil is 135

|  |  |  |
| --- | --- | --- |
| Brazil | Rating | Cost for two |
| French, Brazilian, Beverages | 4.60 | 120 |
| Desserts, Cafe | 4.80 | 100 |
| Beverages, International | 4.80 | 300 |

|  |  |  |
| --- | --- | --- |
| Bakery, Sandwich, Brazilian | 4.40 | 120 |
| Gourmet Fast Food, Burger | 4.30 | 120 |

Average cost for two in Singapore is 156

|  |  |  |
| --- | --- | --- |
| Singapore | Rating | cost for two |
| Fratini La Trattoria | 4.10 | 100 |
| Cut By Wolfgang Puck | 4.00 | 270 |

Average cost for two in Sri Lanka is 2375

|  |  |  |
| --- | --- | --- |
| Sri lanka | Rating | Cost for two |
| Seafood | 4.90 | 4000 |
| Cafe, Sri Lankan, Continental, American | 4.00 | 2500 |
| Middle Eastern, Arabian | 4.20 | 2400 |
| American, Fast Food, Steak, Beverages | 4.20 | 3000 |
| Sri Lankan | 4.00 | 2500 |

Details of analysis can be seen in excel file-sheet-CUISINE ANALYSIS

## According to our current data, should we go for online delivery

and table booking? Does that affect the customer’s ratings?

Yes, it is recommended to go for online delivery and include table booking facility to the restaurants.

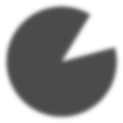
The pie charts given below summarise the number of restaurants with or without online booking and dining facility.

The number of restaurants which have table booking is 1158(12%) and the average ratings of these restaurants is 3.48 which is higher than those without table booking. Similarly the number of restaurants which have online booking is 2451 (26%) and have a rating of 3.29 which is again higher when compared to those without online delivery.

It is understood that even though the number of restaurants serving online and with dining facilities are less than the others, the average ratings for these restaurants are much higher.

It does affect the customer ratings. Table Booking

|  |  |  |
| --- | --- | --- |
| Table booking (Yes or No) | No. Of  Restaurants | Average Rating |
| No | 8393 | 2.81 |
| Yes | 1158 | 3.48 |



Have Table Booking

1158, 12%

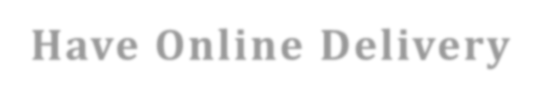
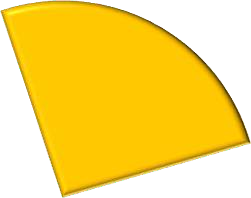
8393, 88%

No

Yes

Online Booking

|  |  |  |
| --- | --- | --- |
| Online booking  (Yes or No) | No Of Restaurants | Average Rating |
| No | 7100 | 2.75 |
| Yes | 2451 | 3.29 |



**Have Online Delivery**

**2451,**

**26%**

**7100,**

**74%**

**No**

**Yes**

Details of analysis can be found in excel file.

-sheet-DELIVERY AND DINING

## 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?

From the Analysis it was understood that the restaurants with higher price ranges have higher ratings.

Thus, it would be recommended to keep the price of cuisines higher, provided the quality of food is maintained.

The reason for this could be a misconception among people that higher priced food has the superior quality and standards when compared to others.

The charts below show the data.

|  |  |
| --- | --- |
| Price Range | Average Rating |
| 1 | 2.38 |
| 2 | 3.07 |
| 3 | 3.71 |
| 4 | 3.84 |



The details of analysis can be found in the excel file –

sheet - price range.

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

The distribution of number of restaurants of different price range can be observed in the following chart.

It is understood that the number of restaurants is highest in the price range of ‘1’ which is 4444 restaurants and the lowest is in the price range of ‘4’ which is 586 restaurants.

|  |  |
| --- | --- |
| Price Range | Number Of Restaurants |
| 1 | 4444 |
| 2 | 3113 |
| 3 | 1408 |
| 4 | 586 |



The details of analysis can be found in excel file.

-sheet-price range