Restaurant Data Analysis

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(Data Science NS -November 23)

Objective Questions

1. 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.

2. 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

3. 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
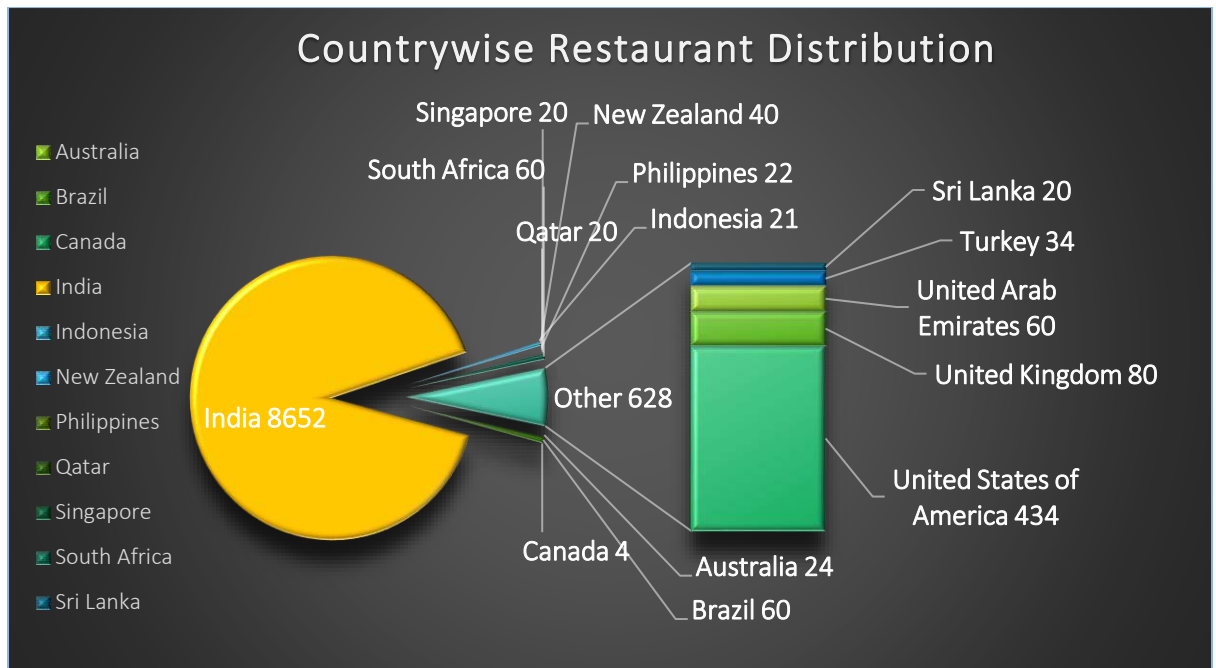
The details of analysis can be found in excel file
-sheet-COUNTRYWISE RESTAURANT

4. 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.
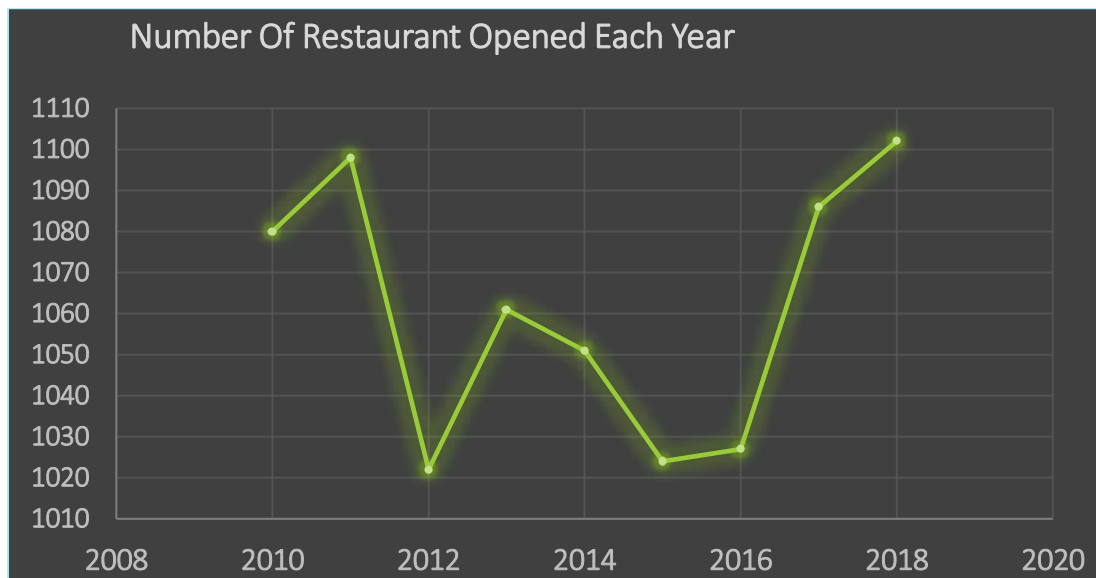
There is no visible trend in the number of restaurants opened and year.

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.
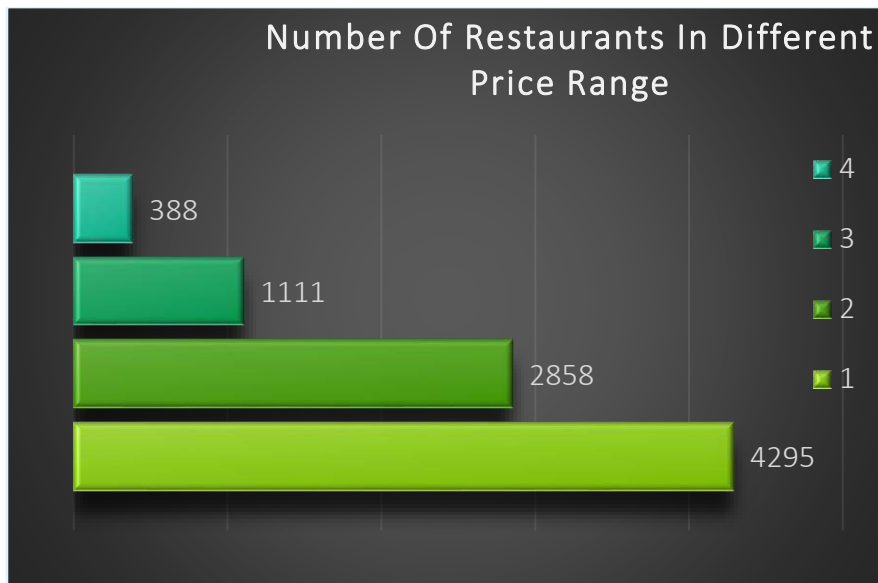

The details of analysis can be found in excel file
-sheet-YEARWISE RESTAURANT

5. 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.

The details of analysis can be found in excel file
-sheet-price range

6. 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.
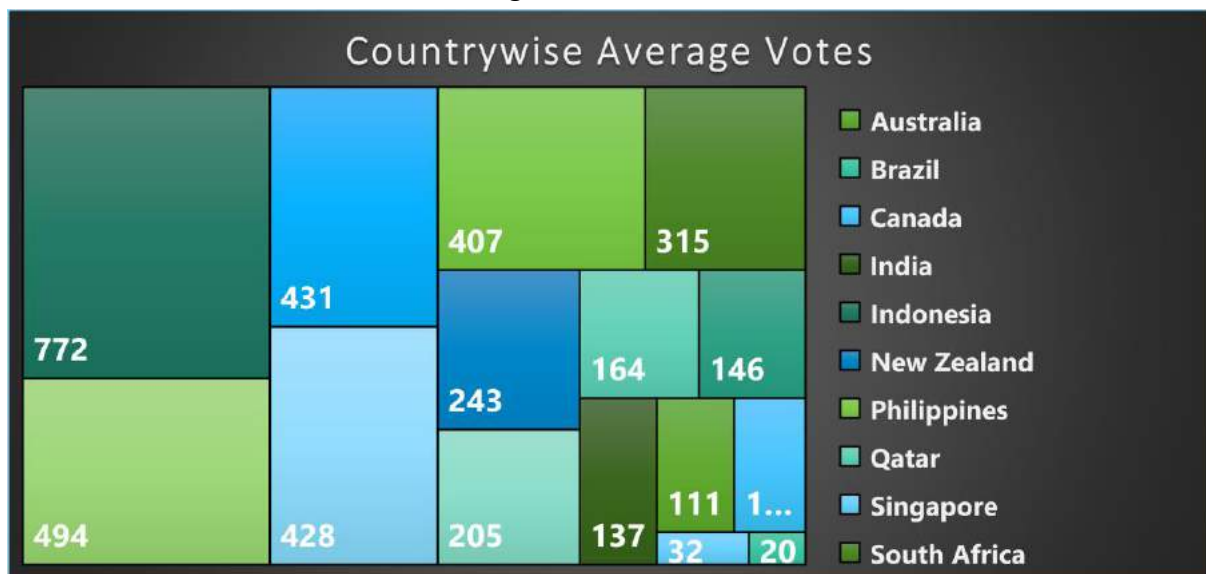
Details can be found in
Excel file-sheet- COUNTRY VS AVG VOTE

Subjective Question

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?

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.
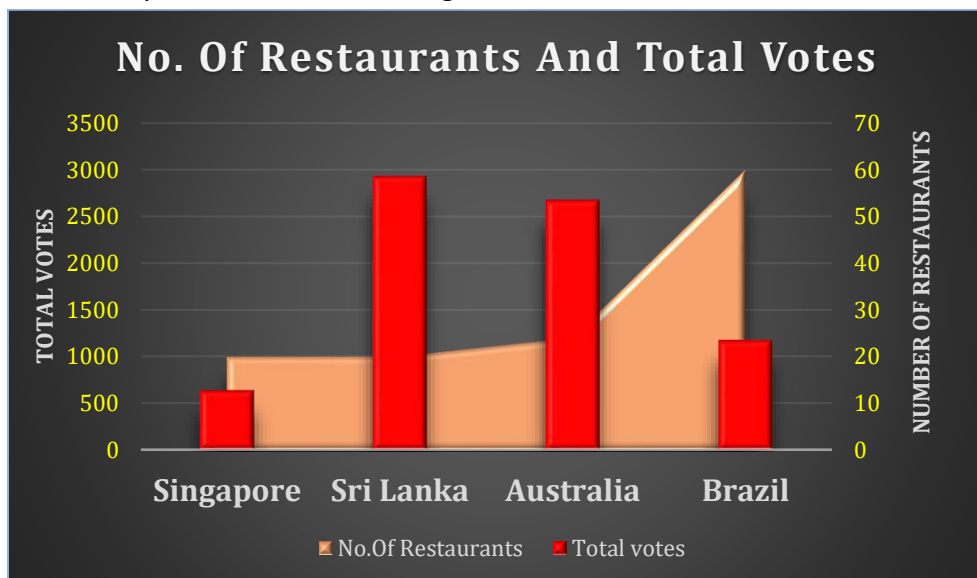
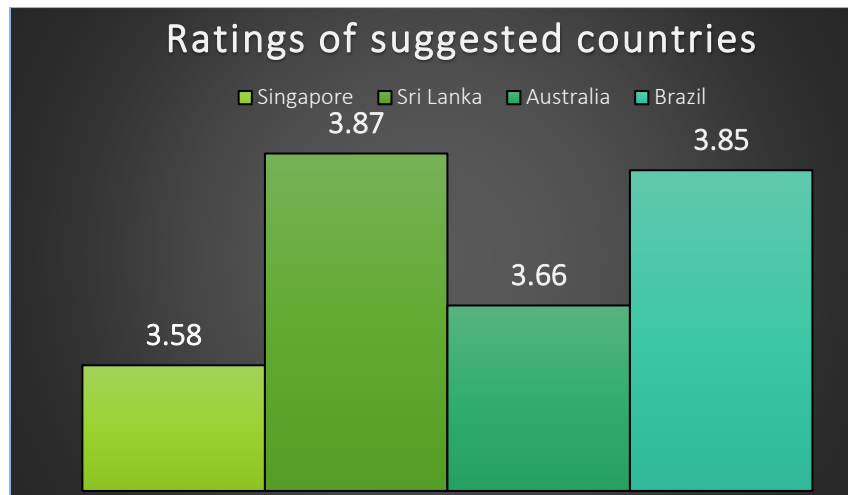Suggested Countries:

Australia
Brazil
Singapore
Sri Lanka

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

Ratings of suggested countries

Singapore   Sri Lanka   Australia   Brazil

3.58   3.87   3.66   3.85

Details can be found in
Excel file-sheet-NEW RESTAURANT ANALYSIS

2. 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

3. 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
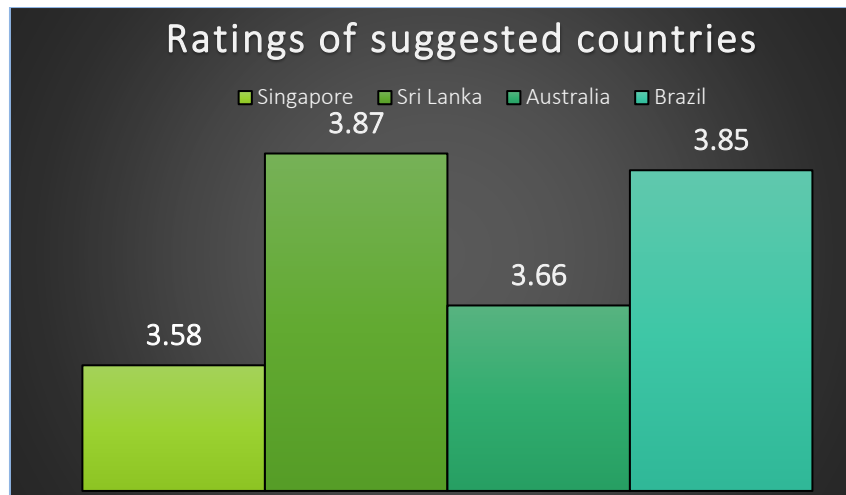
Details can be found in
Excel file-sheet-NEW RESTAURANT ANALYSIS

4. 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

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.

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

6. 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

7. 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.
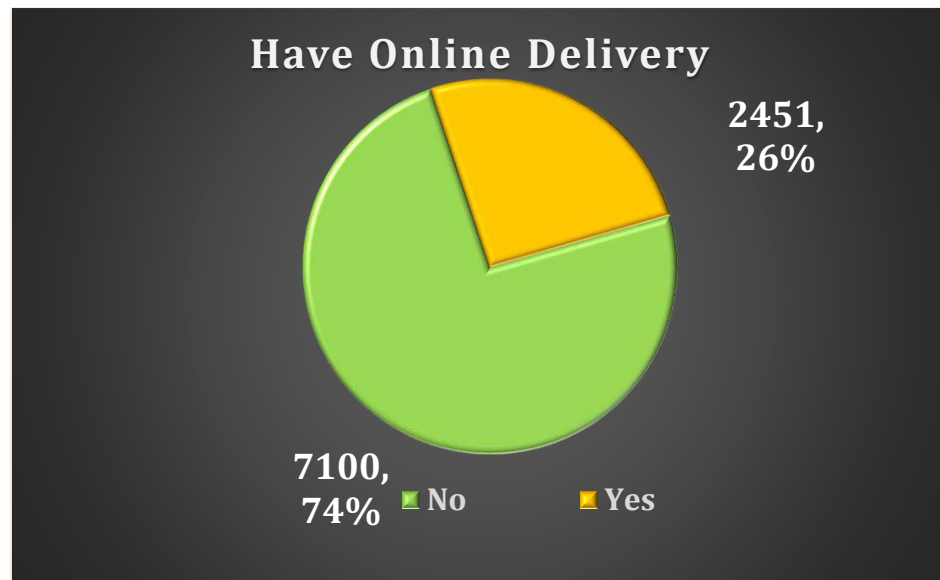
It does affect the customer ratings.

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
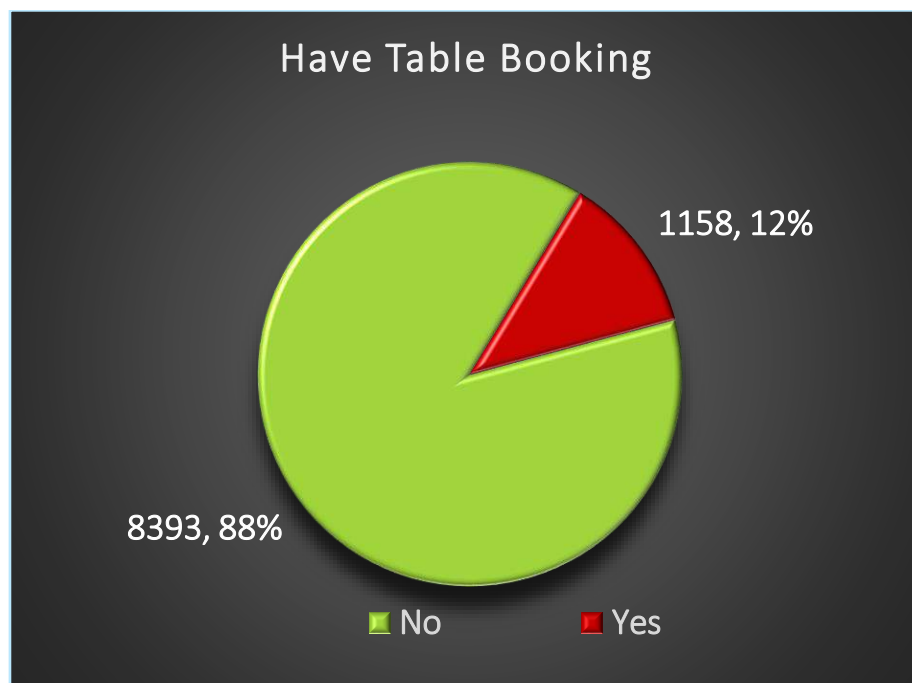
Online Booking

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

8. 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.

9. 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