

ZOMATO RESTAURANTS INFERENCES

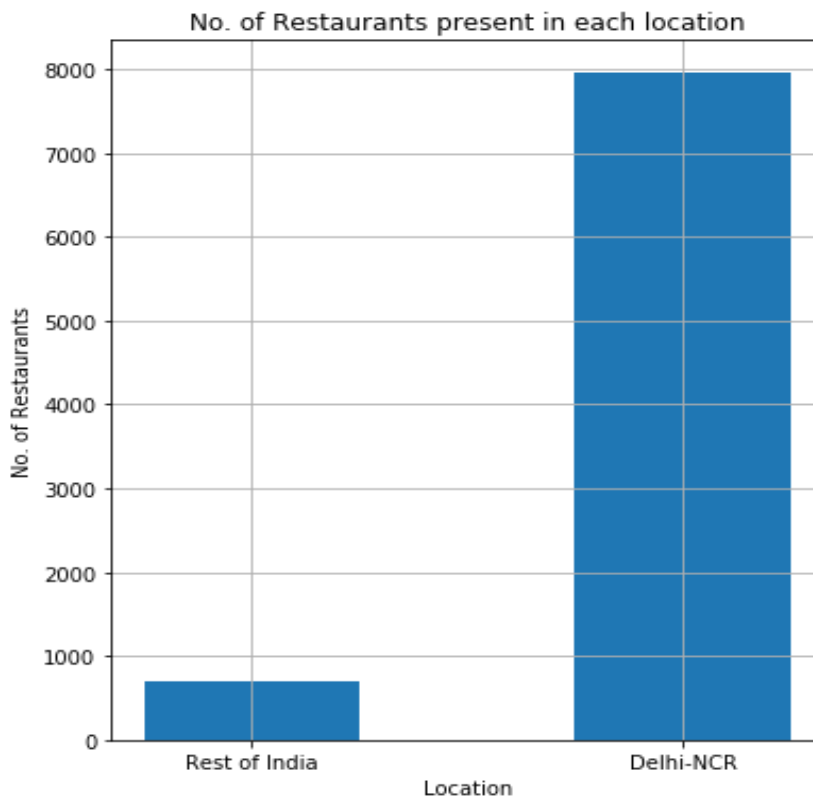
INTRODUCTION :-

In this report , various inferences have been drawn from the Zomato dataset containing information of various restaurants , cuisines , locations , ratings etc. These inferences are helpful in improving the efficiency of restaurants , ultimately providing better services to customers . These are also helpful for someone who is willing to open a restaurant at a particular locality as this analysis will tell what the people of a particular locality like the most , which cuisines are most popular , and much more .

Note :- All findings are for Indian Restaurants except Query No. 6.4

1. No. of restaurants in Delhi NCR vs Rest Of India :-

- As the dataset is highly skewed towards restaurants in Delhi NCR (New Delhi , Gurgaon , Noida , Faridabad , Ghaziabad) . So , it is important to know no. of restaurants in NCR and rest of India before hand .



Location	Number of Restaurants
Rest Of India	705
Delhi NCR	7947

2. Cuisines which are not in restaurants of Delhi NCR but are in rest of India ,

- On analysing the dataset , there are following 4 such cuisines :

<u>Cuisine</u> :	German	Cajun	BBQ	Malwani
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- But upon verifying from Zomato API it is being found that BBQ and Malwani cuisines are actually present in Delhi NCR , so the above answer is due to incomplete dataset . Answer according to information on Zomato API is :-

<u>Cuisine</u> :	German	Cajun
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3. Top 10 Cuisines in Delhi NCR vs Rest of India :-

- Now , this is really interesting to know the cuisines which are served by maximum number of restaurants in NCR as well as in Rest of India separately .

Top 10 cuisines served in restaurants of Delhi NCR and Rest of India

<u>Delhi NCR</u>		<u>Rest of India</u>	
<u>Cusine</u>	<u>Percentage</u>	<u>Cuisine</u>	<u>Percentage</u>
North Indian	29.31 %	North Indian	25.40 %
Chinese	19.95 %	Chinese	17.61 %
Fast Food	15.21 %	Continental	12.88 %
Mughlai	7.60 %	Italian	10.70 %
Bakery	5.68 %	Café	9.90 %
South Indian	4.64 %	Fast food	7.06 %

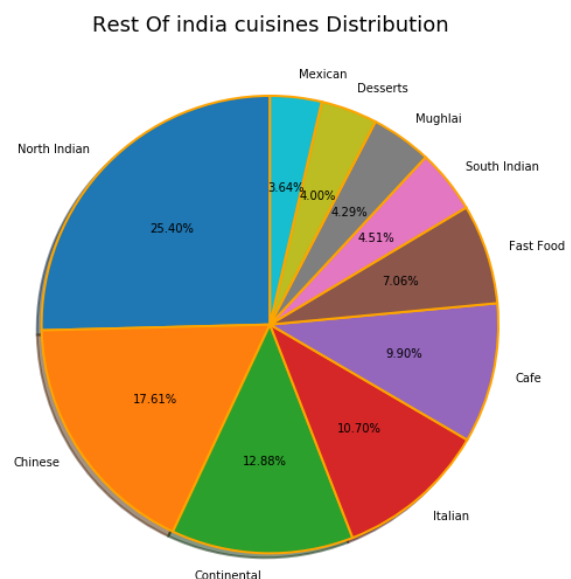
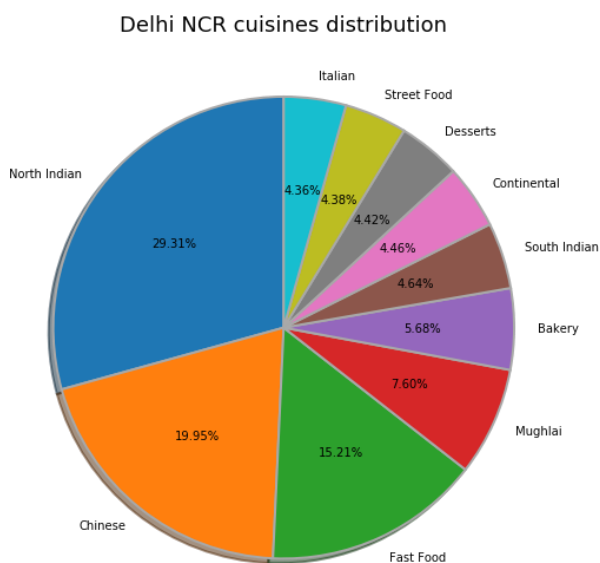
Continental	4.46 %	South Indian	4.51 %
Desserts	4.42 %	Mughlai	4.29 %
Street Food	4.38 %	Desserts	4.00 %
Italian	4.36 %	Mexican	3.64 %

4. Analysis of difference of cuisines served in Delhi NCR and Rest Of India :-

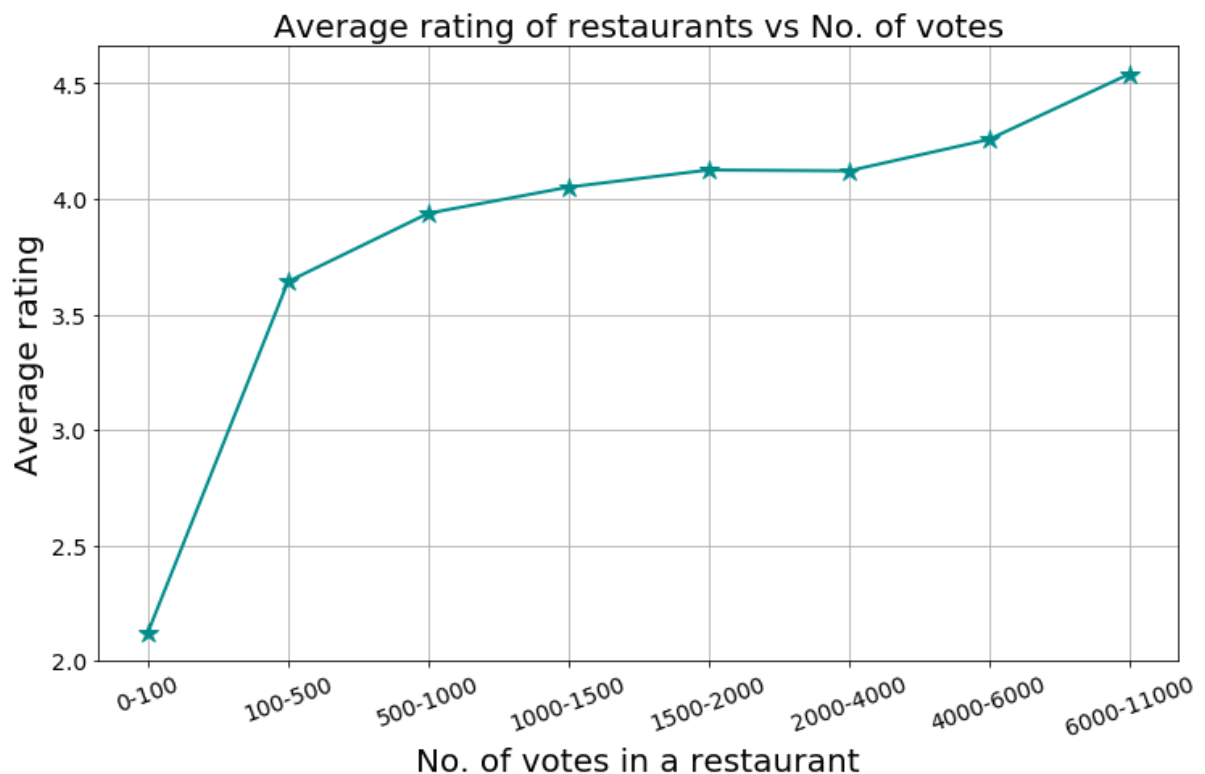
India is known for its diversity , same is reflected in the food here . In Delhi NCR , North Indian is the most loved cuisine and served by most no. of restaurants , also for rest of India but percentage share is greater in Delhi NCR , same goes for Chinese cuisine in both the places . In NCR , fast food , Mughlai , Bakery , South Indian cuisines are loved more than in rest of India wherever Continental , Italian , Café is more popular in rest of India .

Apart from North Indian and Chinese cuisines , Fast food is the most loved cuisine in NCR while continental in Rest of India .Desserts are almost equally enjoyed in both the places with NCR with a little upper hand . Also , street food is ranked in top 10 in NCR while missing from rest of India , while Mexican is amongst the top cuisines in rest of India which is not the case in NCR .

Moreover , German and Cajun are the only cuisines not present in NCR while are there in rest of India . The below pie charts supports the above stated inferences . Top 10 Cuisines distribution is as follows :-



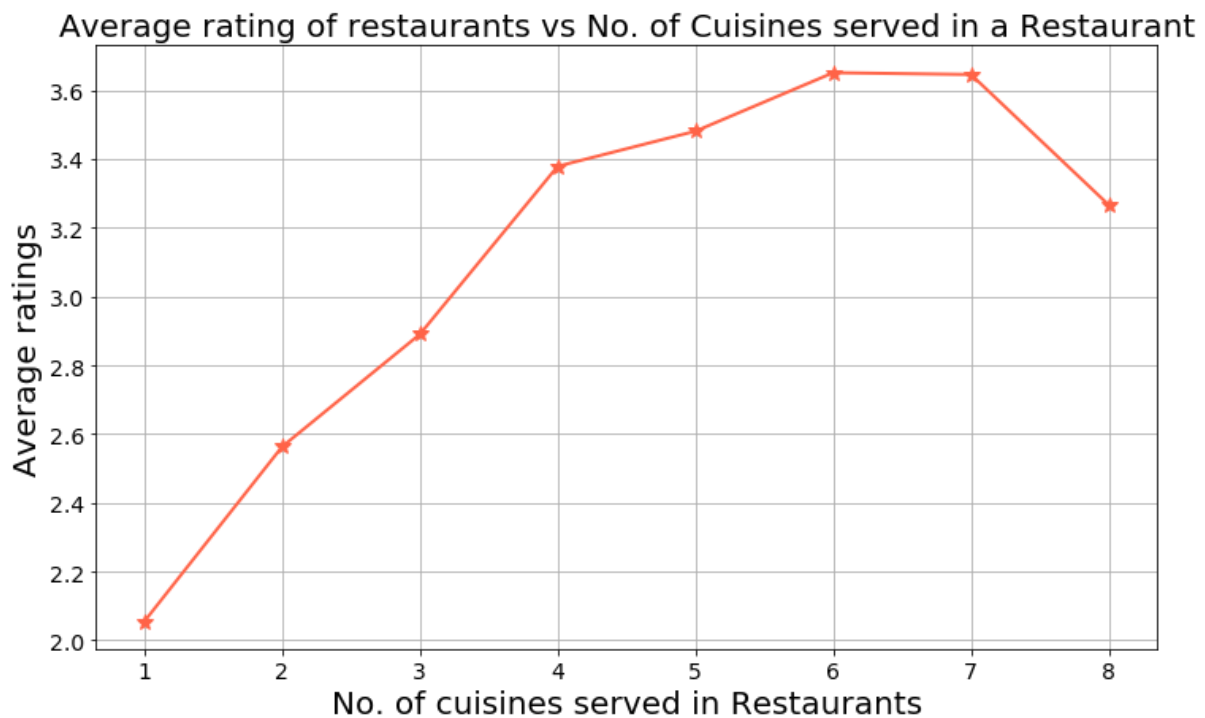
5.1 Effect of number of votes of a restaurant on rating :-



- It is clear that more the number of votes of a restaurant , better is the average rating of the restaurant with just one little exception in transition from 1500-2000 to 2000-4000 votes . Average rating is really low at 2.1 with restaurants having less than 100 votes and suddenly shoots up to around 3.6 with restaurants having 100-500 votes .The peak of average rating is at 4.6 and no. of votes between 6000-11000 . Also , keeping in mind there are only a handful of restaurants having so many votes , as most of the restaurants have less than 2000 votes .Precisely , 90% restaurants have less than 2000 votes . Therefore , there is an unequal split in range of No. of votes on x-axis .
- As average rating may not alone depict a clear picture , so upon more mathematical analysis , restaurants having less than 2000 votes have 2.87 avg. rating with 1.24 standard deviation which is quite large here . Moreover , maximum rating here is 4.9 , with only 25% of ratings more than 3.6.

- For restaurants having more than 2000 votes avg. rating is 4.17 with standard deviation of only 0.43 , maximum rating is 4.9 with 25 % of ratings greater than 4.4 .

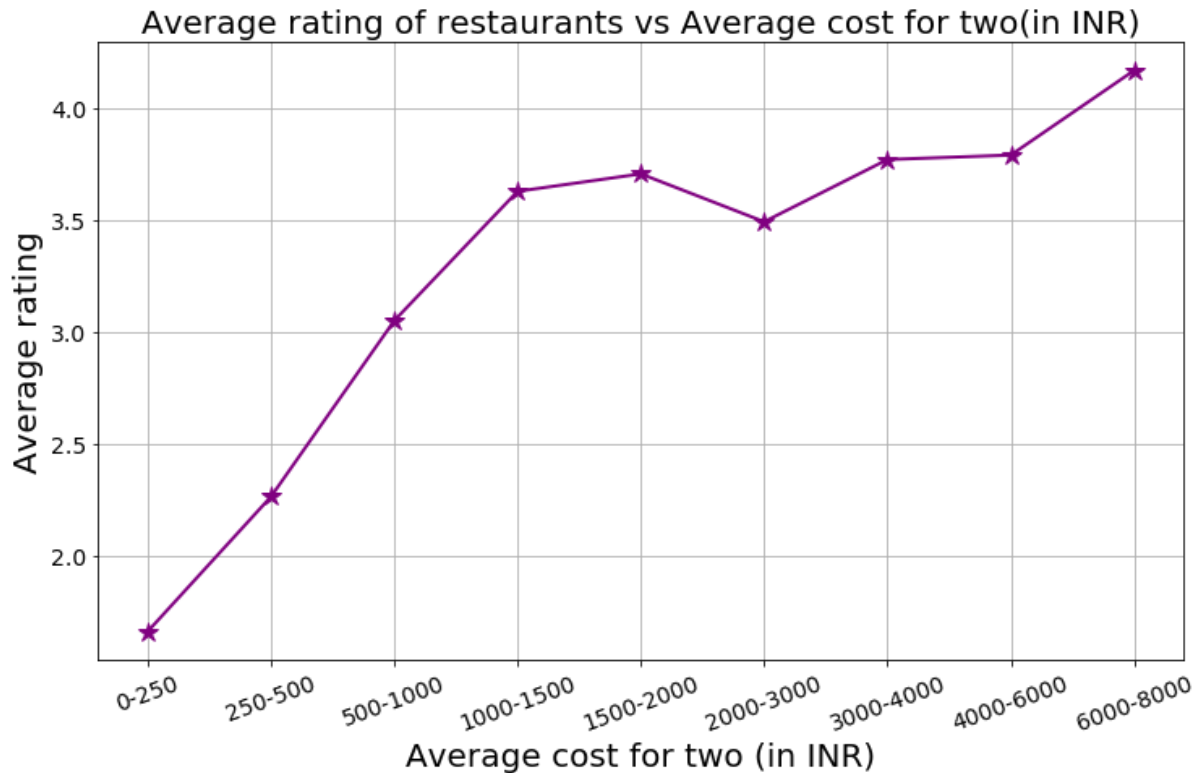
5.2 Effect of Restaurants serving more number of cuisines on user rating of the restaurant :-



- It is evident from the plot above that restaurants serving ore number of cuisines have better average rating , with just one exception at the end when a restaurant serves 8 cuisines . The peak is reached at around 3.65 avg. rating which is for the restaurants serving 6 cuisines .
- Again upon further mathematical analysis , over 96% of restaurants serve less than 5 cuisines(73% restaurants serve less than 3 cuisines) .Rest. Serving less than 5 cuisines have 2.49 avg. rating with standard deviation as 1.51 which means the ratings are really spread apart from mean . Also , 25% of rating are more than 3.5 .

- For restaurants serving greater than or equal to 5 cuisines , i.e. the other 4% restaurants , avg. rating is 3.53 with only 0.47 of std. deviation .

5.3 Impact of average cost for two (in INR) upon user rating of restaurant .



- Undoubtedly , from the plot above , more the average cost for two in a restaurant better the average rating of that restaurant . Again , with an exemption from the above rule here the avg. rating is reduced from 3.7 to 3.5 when avg . cost for two increases from 1500-2000 to 2000-3000.
- Also , considering the fact that 84% restaurants have avg. cost for two less than Rs.1000 (over 51 % have even less than Rs. 500) and thus intervals on x axis are unequal to showcase a correct picture of what's there .For restaurants with less than Rs. 1000 avg. cost for two , avg. rating is 2.32 , with 1.52 as std. deviation which means ratings are really spread apart . Only 25% ratings are above 3.40 .
- For restaurants with avg. cost for two \geq Rs. 1000 , i.e. for nearly 16 % of restaurants 25% ratings are above 4.00 with avg. rating as 3.57 .

5.4 Effect of Restaurants serving some specific cuisines on rating of Restaurant.

To analyse , impact of some specific cuisines on user rating of Restaurant , Top 30 most popular cuisines of India in descending order of their popularity have been listed as follows :-

'North Indian', 'Chinese', 'Fast Food', 'Mughlai', 'Bakery', 'Continental', 'Italian', 'South Indian', 'Cafe', 'Desserts', 'Street Food', 'Mithai', 'Pizza', 'American', 'Ice Cream', 'Beverages', 'Thai', 'Asian', 'Biryani', 'Burger', 'Healthy Food', 'Mexican', 'European', 'Raw Meats', 'Finger Food', 'Salad', 'Mediterranean', 'Japanese', 'Seafood', 'Lebanese'.

Now average rating of restaurants serving these cuisines is calculated(cuisine wise) which comes to be as follows : -

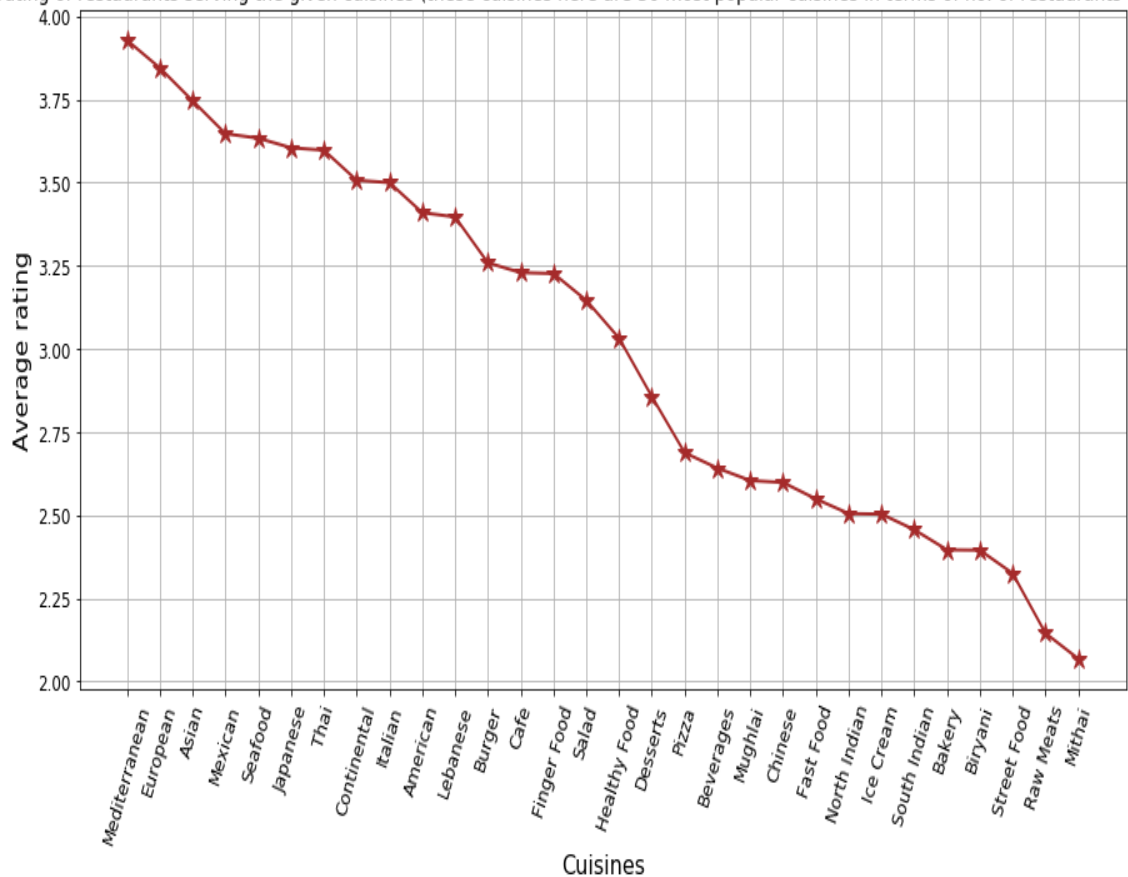
Top 30 cuisines in descending order of avg. rating of restaurants that serve them :

<u>Cuisine</u>	<u>Avg. Rating of Restaurant</u>
Mediterranean	3.928
European	3.844
Asian	3.745
Mexican	3.647
Seafood	3.633
Japanese	3.604
Thai	3.597
Continental	3.507
Italian	3.500
American	3.409
Lebanese	3.396
Burger	3.259
Cafe	3.229
Finger Food	3.226
Salad	3.146
Healthy Food	3.032
Desserts	2.856
Pizza	2.687

Beverages	2.641
Mughlai	2.604
Chinese	2.598
Fast Food	2.548
North Indian	2.504
Ice Cream	2.503
South Indian	2.456
Bakery	2.395
Biryani	2.394
Street Food	2.325
Raw Meats	2.145
Mithai	2.068

Among the top 30 most popular cuisines , It is clear that Restaurants serving Mediterranean cuisine have highest average rating in India followed by European and Asian Cuisines . North Indian despite of the fact served by maximum no. of Restaurants in India has avg. rating of restaurants serving it as 2.504 only .

Average rating of restaurants serving the given cuisines (these cuisines here are 30 most popular cuisines in terms of no. of restaurants that serve them)

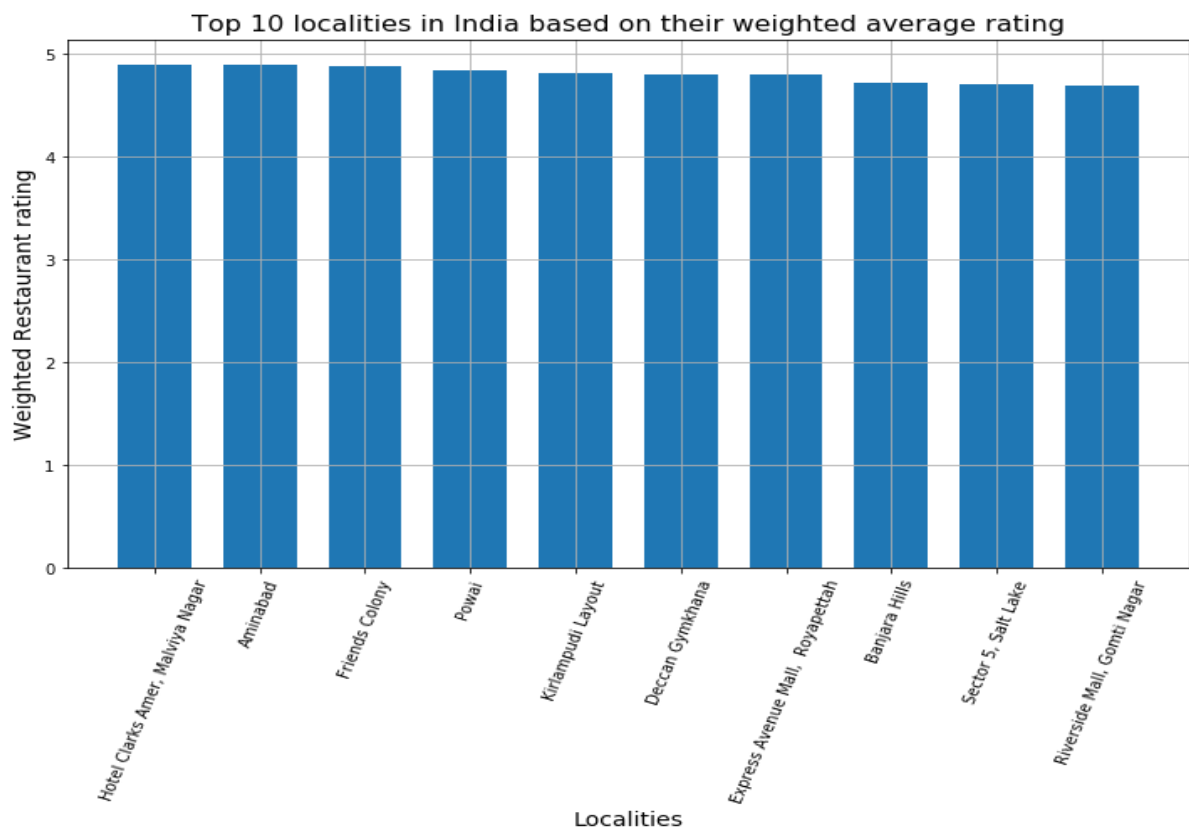


5.5 Weighted Restaurant rating of top 10 localities .

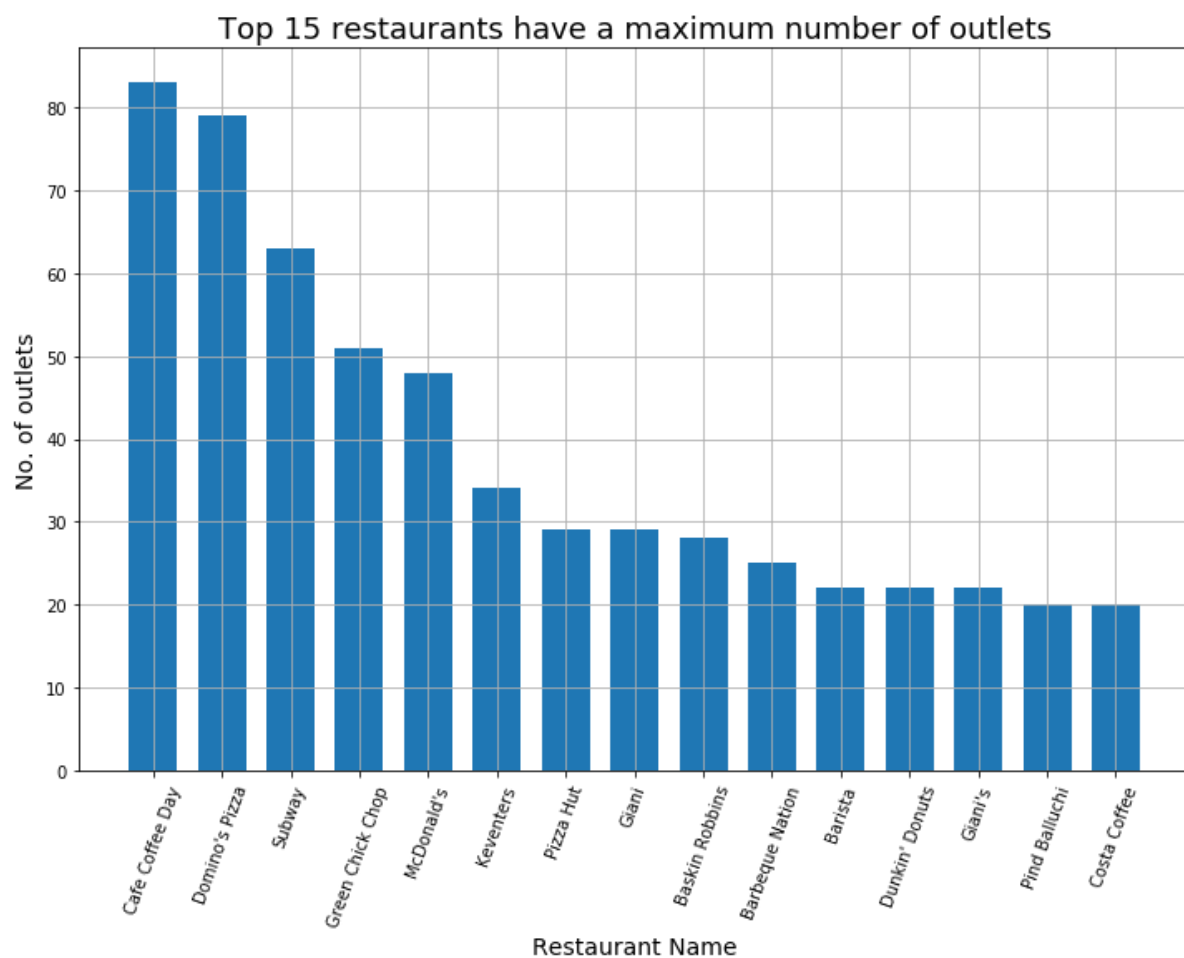
<u>Locality</u>	<u>Weighted Restaurant Rating</u>
Hotel Clarks Amer, Malviya Nagar	4.90
Aminabad	4.90
Friends Colony	4.89
Powai	4.85
Kirlampudi Layout	4.82
Deccan Gymkhana	4.80
Express Avenue Mall, Royapettah	4.80
Banjara Hills	4.72
Sector 5, Salt Lake	4.70
Riverside Mall, Gomti Nagar	4.70

Note :-

Weighted Restaurant Rating = $\Sigma (\text{number of votes} * \text{rating}) / \Sigma (\text{number of votes})$



6.1 Top 15 Restaurants having a maximum number of outlets :

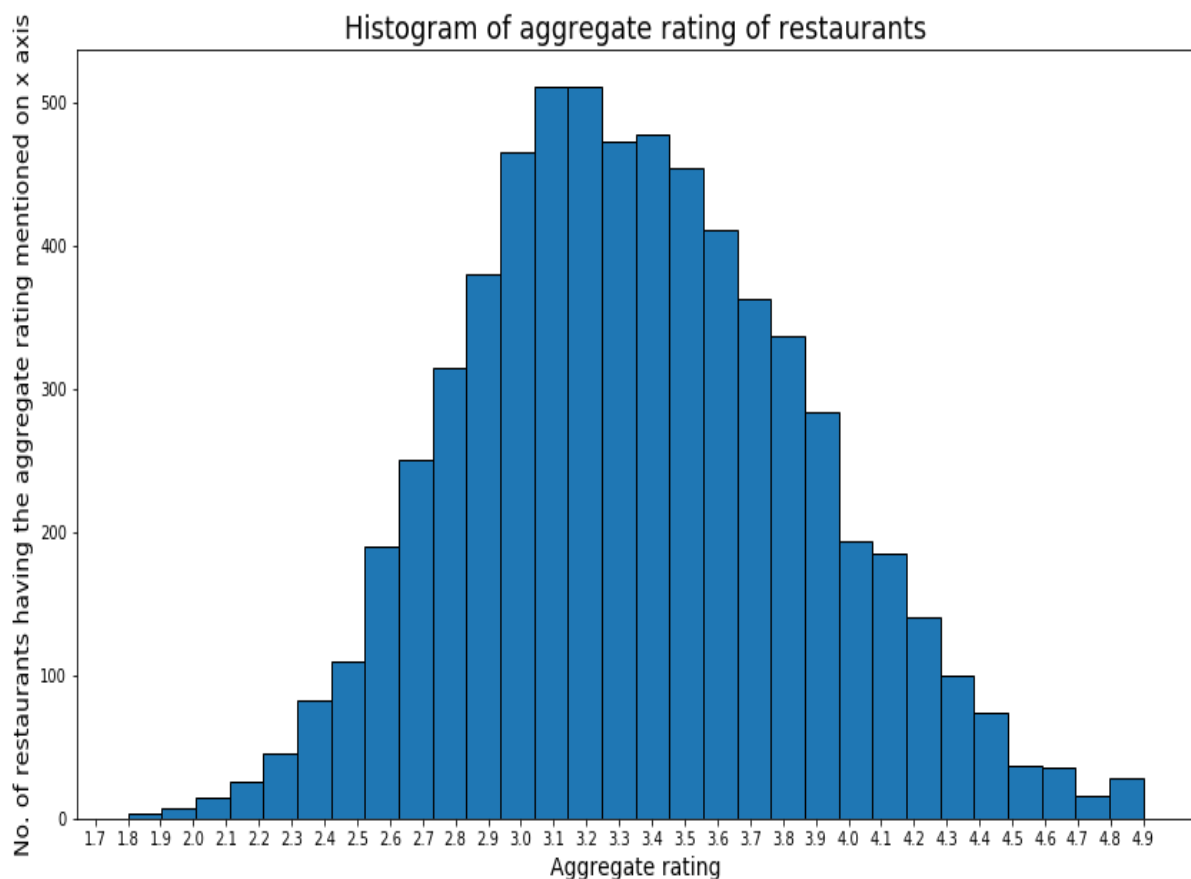


It is clear that CCD tops the tally with 83 outlets followed by Domino's Pizza with 79 outlets and then subway with 63 , which is famous for its unique sandwiches . Further Barbeque Nation , a buffet serving restaurant is also in the list with 25 outlets .

<u>Restaurant Name</u>	<u>Number of outlets</u>
Cafe Coffee Day	83
Domino's Pizza	79
Subway	63
Green Chick Chop	51
McDonald's	48
Keventers	34

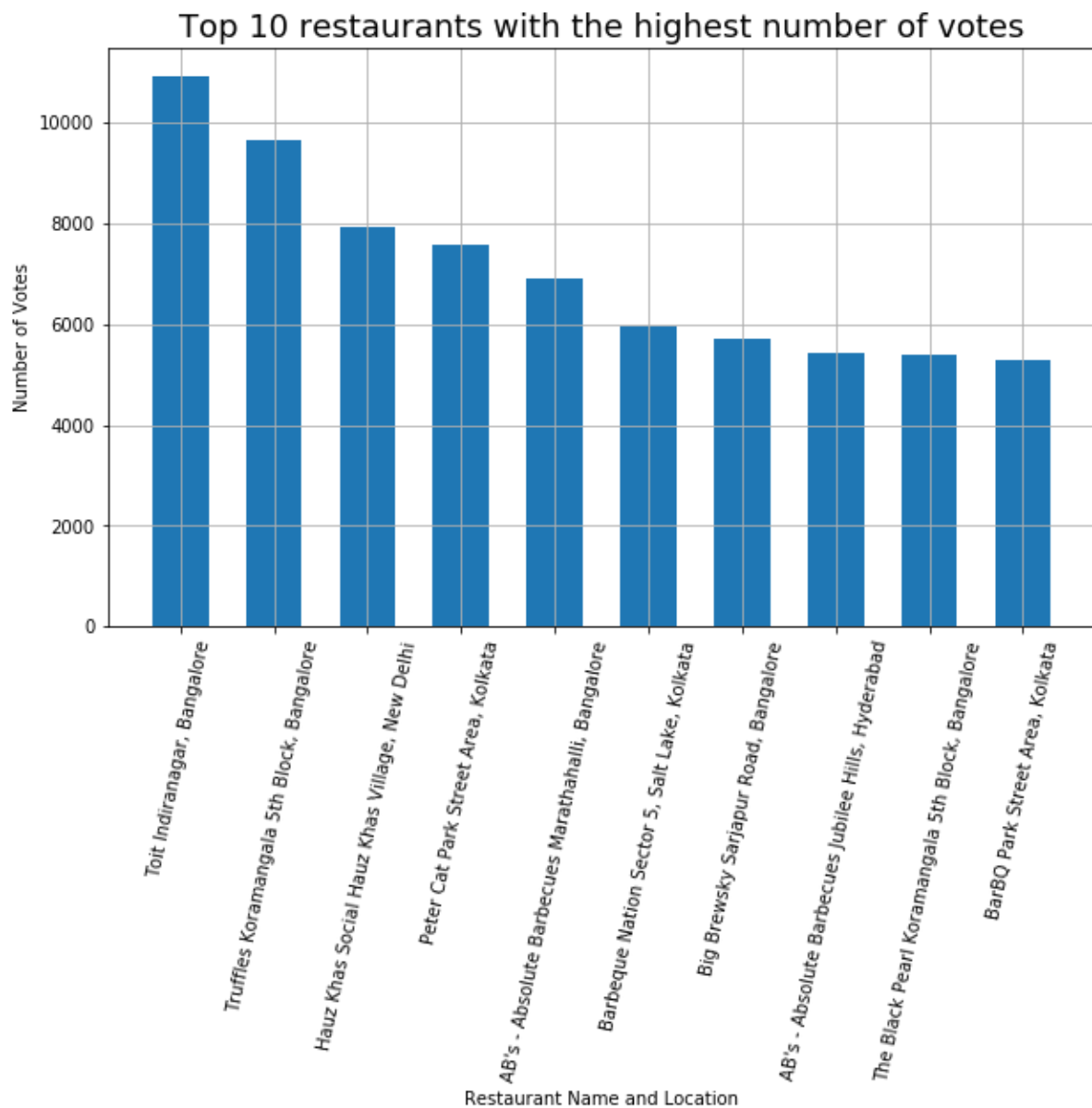
Pizza Hut	29
Giani	29
Baskin Robbins	28
Barbeque Nation	25
Barista	22
Dunkin' Donuts	22
Giani's	22
Pind Balluchi	20
Costa Coffee	20

6.2 Histogram of aggregate rating of restaurant .



The high towers are at the centre means most of the restaurants have just medium ratings ranging from 3.0-3.8 , with most restaurants have 3.1 and 3.2 as their aggregate rating .

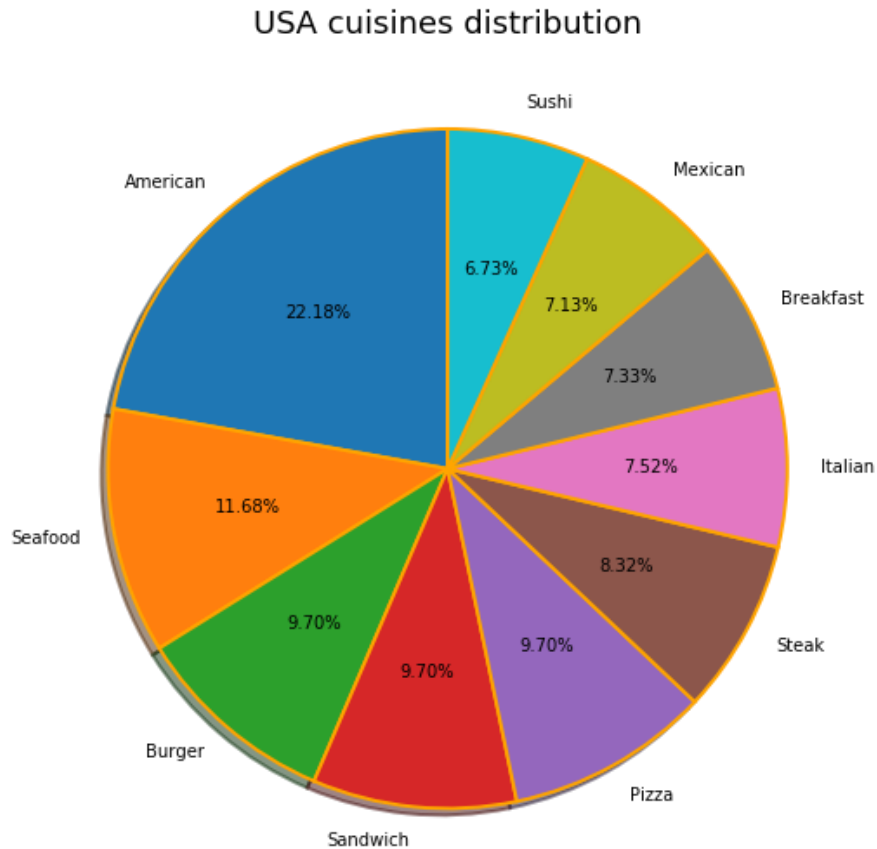
6.3 Top 10 restaurants with highest number of votes .



Here is the plot of top 10 restaurants based on their no. of votes , in which Toit Indiranagar , Bangalore is at the top , in fact top 2 restaurants are from Bangalore itself , and 5 out of 10 restaurants are from Bangalore in this list .

<u>Restaurant Name and Location</u>	<u>Number of votes</u>
Toit Indiranagar, Bangalore	10934
Truffles Koramangala 5th Block, Bangalore	9667
Hauz Khas Social Hauz Khas Village, New Delhi	7931
Peter Cat Park Street Area, Kolkata :	7574
AB's - Absolute Barbecues Marathahalli, Bangalore	6907
Barbeque Nation Sector 5, Salt Lake, Kolkata	5966
Big Brewsky Sarjapur Road, Bangalore	5705
AB's - Absolute Barbecues Jubilee Hills, Hyderabad	5434
The Black Pearl Koramangala 5th Block, Bangalore	5385
BarBQ Park Street Area, Kolkata	5288

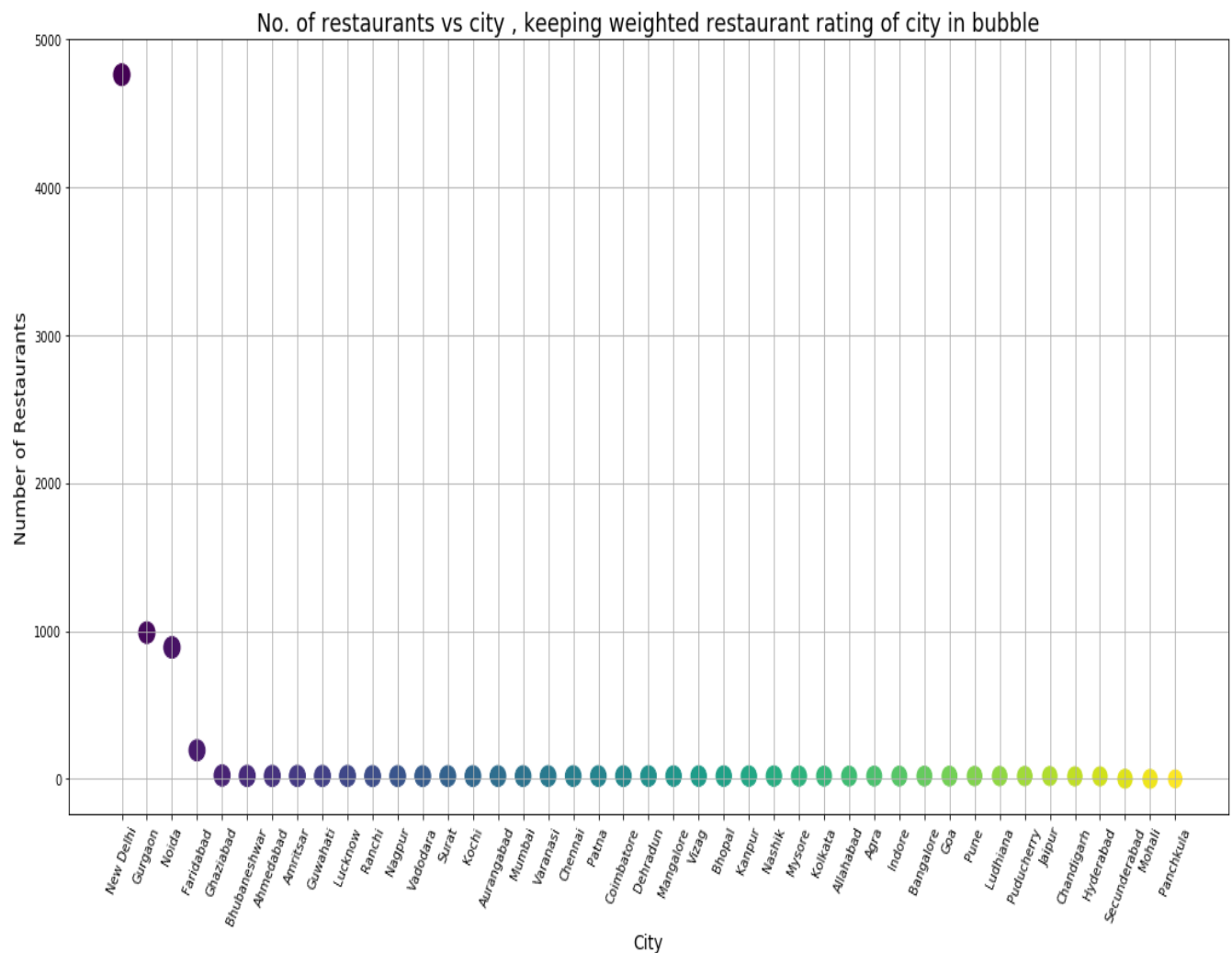
6.4 Top 10 Cuisines present in the USA : -



Cuisine	Percentage of Restaurants serving it
American	22.18 %
Seafood	11.68 %
Burger	9.70 %
Sandwich	9.70 %
Pizza	9.70 %
Steak	8.32 %
Italian	7.52 %
Breakfast	7.33 %
Mexican	7.13 %
Sushi	6.73 %

The top 2 cuisines i.e. American and Seafood are served by almost one-third restaurants in the United States .

6.5 Number of restaurants in each city , keeping in consideration the weighted restaurant rating of the city also .



It is clear that the cities in Delhi NCR have most no. of restaurants as analysed in Query 1 in this report . However , the scenario is different when it comes of Weighted Restaurant rating of each city wherer Secunderabad tops the tally with 4.54 as Weighted Restaurant Rating followed by Bangalore with 4.49 . Cities in Delhi NCR didn't perform well here with New Delhi having highest rating among them as 3.76 and Ghaziabad the least as 3.03 which is in fact the least Weighted Restaurant rating amongst all cities of India .

As there is not significant differences in weighted restaurants ratings of each city so this is not visible I graph but actually bubble size of each bubble is slightly different depicting the weighted Restaurant rating of that city .

<u>City</u>	<u>Weighted Restaurant Rating</u>
Secunderabad	4.54
Bangalore	4.49
Hyderabad	4.48
Lucknow	4.32
Chennai	4.31
Mohali	4.30
Kolkata	4.29
Pune	4.28
Jaipur	4.28
Guwahati	4.26
Mumbai	4.21
Panchkula	4.20
Coimbatore	4.17
Ahmedabad	4.16
Goa	4.15
Kochi	4.13
Vadodara	4.13
Vizag	4.13
Bhopal	4.12
Nagpur	4.10
Chandigarh	4.10
Ludhiana	4.08
Surat	4.01
Dehradun	4.01
Agra	4.00
Indore	3.99
Bhubaneshwar	3.96
Kanpur	3.85
New Delhi	3.76
Amritsar	3.76
Mysore	3.76
Mangalore	3.76
Gurgaon	3.74
Puducherry	3.73
Nashik	3.58
Ranchi	3.57
Varanasi	3.56
Faridabad	3.48
Noida	3.47
Patna	3.45
Aurangabad	3.42
Allahabad	3.40
Ghaziabad	3.03

