CAPSTONE

Battle of the Neighbourhoods

Location analysis for opening a New Restaurant in Chennai

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<u>Introduction</u>

This final project explores the best locations for opening a restaurant throughout the Chennai city Food Business is always the best one. Since there are a lot of Restaurants available, analysis is required to find out the affordable area and to find out available venues in the area. This report explores which neighbourhoods of Chennai and their land values per Sq. Ft and most common venues in each neighbourhood. Additionally, the report is grouped based on the area prices.

<u>Data</u>

In order to answer the above questions, data on Chennai City neighbourhoods, latitude, longitude, available venues are required.

Chennai City data containing the neighbourhoods and land prices are taken from https://www.livechennai.com/Propertyratesinchennai.asp

All data related to locations and quality of venues will be obtained via the Foursquare API utilized via the Request library in Python.

<u>Neighbourhood</u> <u>Details:</u>

```
Adyar
Alwarpet
Ambattur
Ambattur Industrial Estate
Anna Nagar
Anna Nagar West
Arcot Road
Avadi
Chromepet
East Coast Road
Egmore
G S T Road
Guduvancheri
Kelambakkam
Kilpauk
Kodambakkam
Kolathur
Korattur
Koyambedu
Madipakkam
Mandaiveli
Medavakkam
Mogappair
Mogappair West
Mylapore
Navalur
Nungambakkam
OMR
Oragadam
Perungudi
Poonamallee
Porur
```
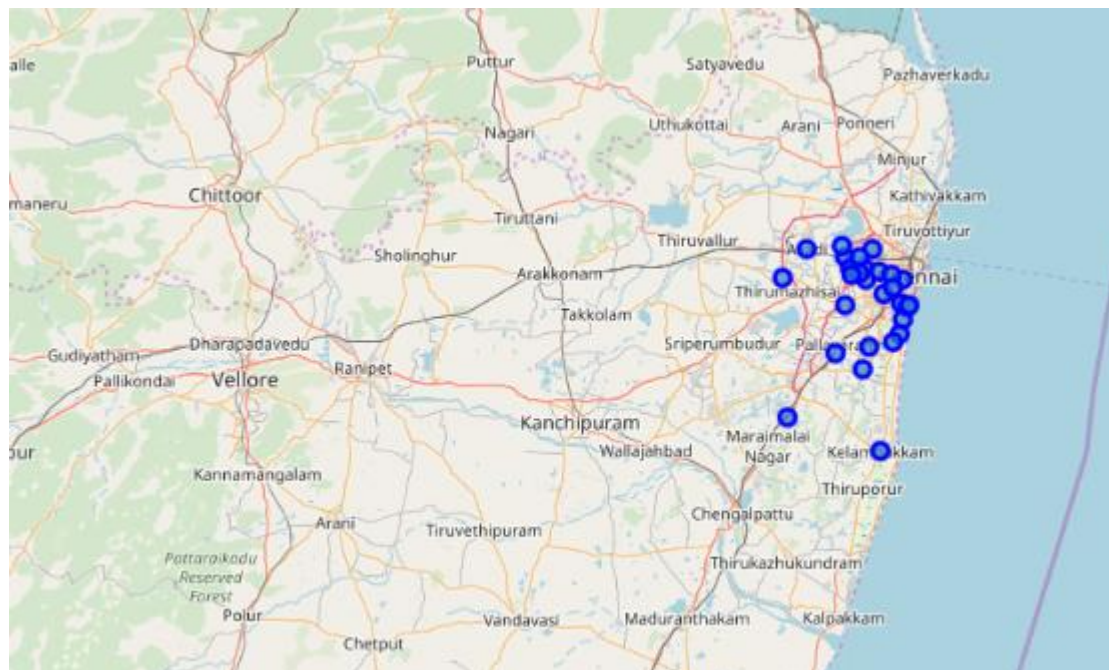
Methodology

• Data will be collected from https://www.livechennai.com/Propertyratesinchennai.asp and cleaned and processed into a data frame.

Processed data:

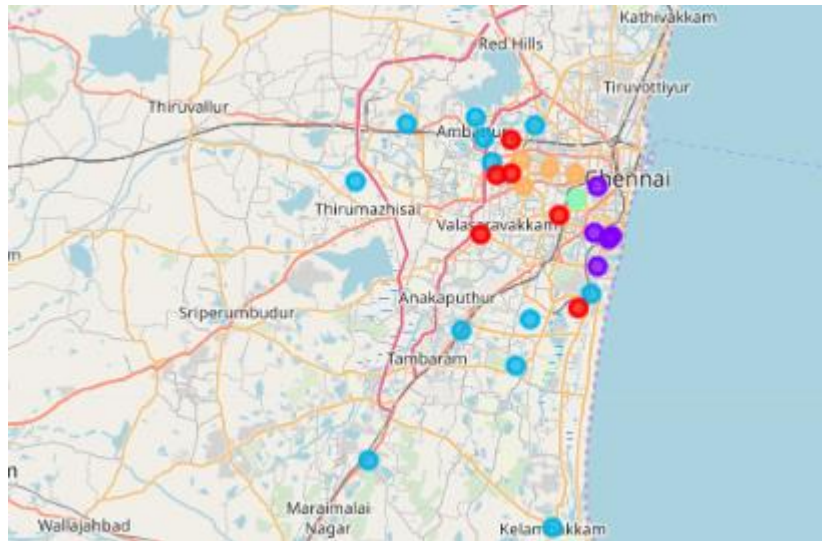|	Locality	Min	Max	Average Price
0	Adyar	10,180	17,159	13,670/t
1	Alwarpet	10,991	18,401	14,696/t
2	Ambattur	4,176	5,936	5,056/t
3	Ambattur Industrial Estate	4,548	6,111	5,330
4	Anna Nagar	7,799	12,880	10,340
5	Anna Nagar West	6,350	10,554	8,452
6	Arcot Road	5,966	10,103	8,035
7	Avadi	3,271	4,427	3,849
8	Chromepet	3,933	6,058	4,996
9	East Coast Road	4,036	5,695	4,865
10	Egmore	11,851	17,358	14,604
11	G S T Road	3,235	5,040	4,137/t
12	Guduvancheri	3,028	4,625	3,826
13	Kelambakkam	3,094	4,370	3,732
14	Kilpauk	7,168	12,200	9,684
15	Kodambakkam	5,424	9,460	7,442
16	Kolathur	4,402	6,098	5,250
17	Korattur	4,939	7,098	6,018
18	Koyambedu	7,202	10,023	8,612
19	Madipakkam	3,950	5,910	4,930
20	Mandaiveli	12,664	18,457	15,561

• Foursquare be used to locate all venues and then filtered by Italian restaurants. Ratings, tips, and likes by users will be counted and added to the data frame.

• Data will be sorted based on rankings

Map of Neighbourhoods:

• Finally, the data be will be grouped into clusters based on the land prices

Map with Clustered data:.

Results:

As a result of our analysis with 31 we got 5 clusters based on the price. In that the second cluster has growing areas with affordable land rates. In which few neighbourhoods like Ambattur doesn't have Indian Restaurant in most common venues. So that would be good choice for opening Indian Restaurant.

Best Cluster for Opening Indian Restaurant:

```
In [62]: chennai_grouped_clustering.loc[chennai_grouped_clustering['Cluster Labels'] == 1, chennai_grouped_clustering.columns[[0] + list(range(3, chennai_grouped_clustering.shape[1]))]]
```

Out[62]:

	Locality	Average Price	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Adyar	13670	13.006450	80.257779	1	Indian Restaurant	Electronics Store	North Indian Restaurant	Ice Cream Shop	Rock Club	Fast Food Restaurant	Coffee Shop	Lounge	Café	Juice Bar
1	Alwarpet	14696	13.033860	80.254549	1	Bakery	Japanese Restaurant	Café	Restaurant	Sandwich Place	Gym	Juice Bar	Coffee Shop	Breakfast Spot	Bookstore
10	Egmore	14604	13.072832	80.257691	1	Indian Restaurant	Farmers Market	Museum	Coffee Shop	Theater	Thai Restaurant	Motel	Department Store	Shopping Mall	Seafood Restaurant
20	Mandaiveli	15561	13.029206	80.266897	1	Cosmetics Shop	Hotel	Indian Restaurant	Vegetarian / Vegan Restaurant	Bakery	Furniture / Home Store	Farmers Market	Fast Food Restaurant	Food Court	Food Truck
24	Mylapore	13360	13.031650	80.270099	1	Vegetarian / Vegan Restaurant	Indian Restaurant	Hotel	Juice Bar	Wine Shop	Fried Chicken Joint	Dessert Shop	Electronics Store	Farmers Market	Fast Food Restaurant

Conclusion:

Based on the analysis we found a group of neighbourhoods which can be considered for opening a restaurant. Since we have listed the most common venues, we could see few areas where there is no Indian restaurant, which could be idle for opening a new restaurant.