

The Battle of Neighborhoods

Applied Data Science Capstone Project

DETERMINING THE DISTRIBUTION OF ITALIAN RESTAURANTS IN
CHENNAI TO IDENTIFY THE BEST LOCALITY TO START A NEW ONE

by: Venkatesan N

Introduction

Background

- To identify the best locality in Chennai to start a Italian cuisine restaurant.

Problem Description

- Chennai is a city which home for some of the most delicious foods in southern india. A wide variety of cuisines are consumed in Chennai.
- Being a metro city home to people from multiple cultures it is important to have multiple cuisines in Chennai.
- Apart from the local cuisines, the most sought after cuisines are Italian and Chinese. In this project we try to identify the distribution of Italian restaurants in different localities

Interest

- Those who are interested in starting an Italian restaurant in Chennai.

Data Acquisition and Processing

Data Terminology

- In India, restaurants usually serve multiple cuisines. Also, Most of European cuisine is marked as Italian cuisine. German/ Spanish(Such as Paella) cuisines are not specifically served and they are included in Italian cuisine.

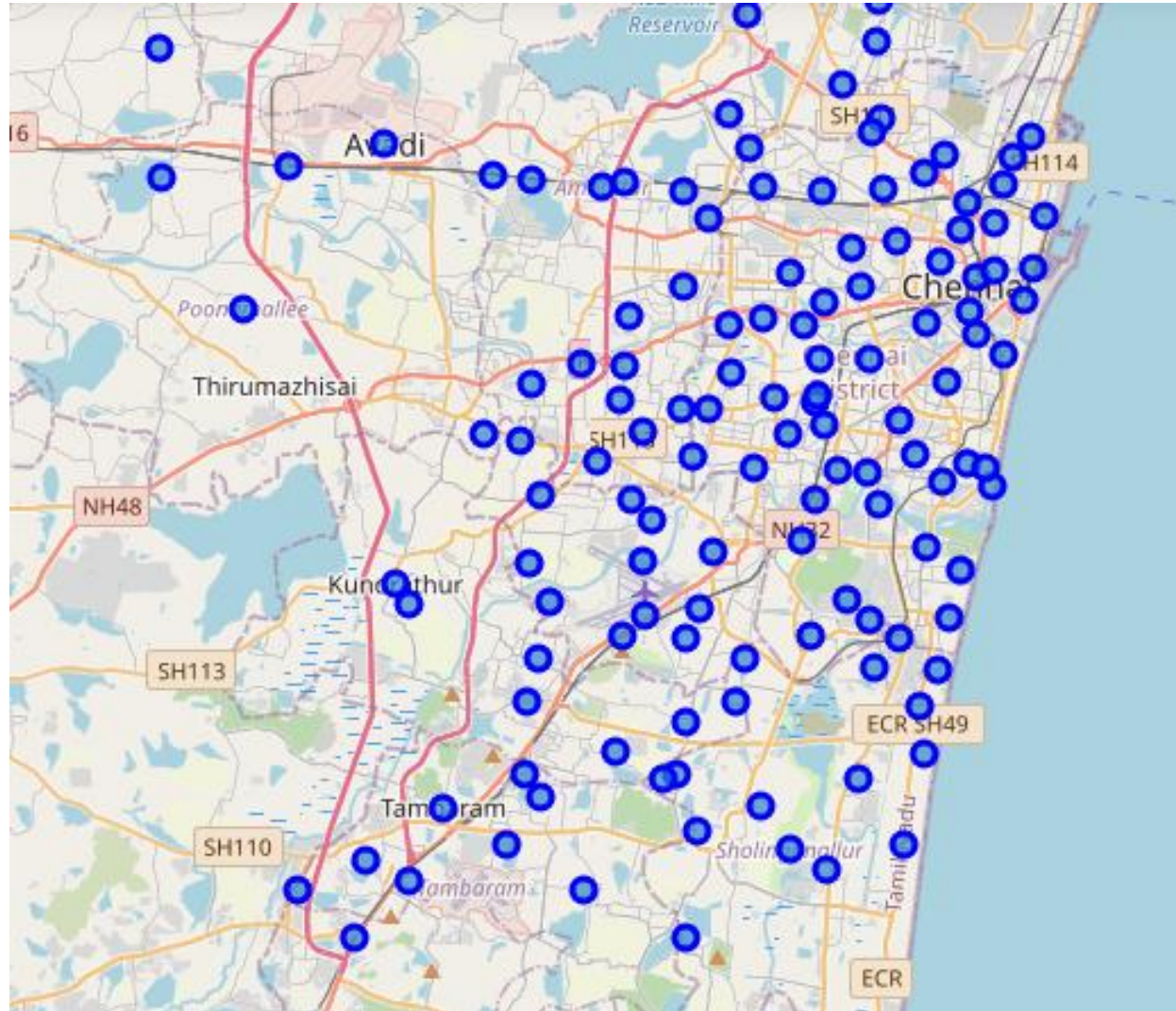
Data Sources: 3 types identified

- Venue data from Foursquare.com
- Names of localities are taken from https://en.wikipedia.org/wiki/Areas_of_Chennai.
- Location data is taken from geocoder library from Google

Data cleaning

- Foursquare takes a lat/long, a radius, and attempts to retrieve the specified number of venues covered by the circle scribed by the radius. Small radius means insufficient venues retrieved. Large radius means overlapping circles and duplicate venues
- Food Venue Category- venues are classified rather arbitrary

Chennai Localities map



Data Acquisition and Processing (cont.)

Feature selection

- Chennai has about 150+ neighborhoods. Group by neighborhoods
- Foursquare will retrieve firstly by food, then by Italian food

Analytical method – Demand and Supply of the market segment

- The classification of “Italian Restaurant” in India is a very broad classification. It includes food from Spanish and German Cuisines too. Most Italian Restaurants encompasses food from many European countries.
- The reason for choosing Italian is, it is the most famous than cuisine after Indian (which comprises north indian and south Indian)
- It is a popular belief that central & south Chennai (considered economically richer suburbs) has more Italian options.
- The data distribution of class of people locality wise is not available and hence I will use the local knowledge to summarise the findings.

Exploratory Data Analysis - Demographics

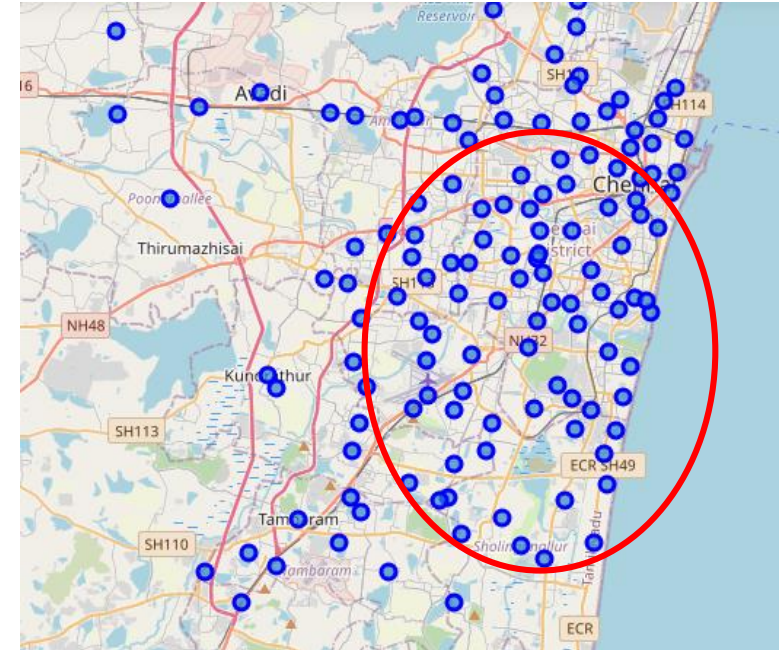
Given the size of the city is very huge, the distribution of class of people is diverse.

- generally speaking, the localities shown within in the circle in the adjacent figure is considered to be where wealthier people reside.

This also has to do with proximity to beaches & entertainment avenues. Localities closer to the beach (adyar, Mylapore, Triplicane, Thiruvanmiyur, besant nagar etc) are composed of wealthier people

Further away towards the west is the industrial zones of Chennai where the wealth distribution is much lower

Wealth distribution is an important factor for people to try different cuisines.



Exploratory Data Analysis – Demographics (cont)

The table on the right shows part of the overall dataframe imported from foursquare

It shows the distribution of different cuisines of restaurants in Chennai, not considering which locality.

Although, not all categories are shown here, the major cuisines are shown here.

Among the majors cuisines, apart indian, the next most opted for cuisines are Asian, Chinese and Italian.

The spread of Italian cuisines is shown in the next slides.

| | Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude |
|---------------------------|--------------|-----------------------|------------------------|-------|----------------|-----------------|
| Venue Category | | | | | | |
| Afghan Restaurant | 11 | 11 | 11 | 11 | 11 | 11 |
| African Restaurant | 9 | 9 | 9 | 9 | 9 | 9 |
| American Restaurant | 26 | 26 | 26 | 26 | 26 | 26 |
| Andhra Restaurant | 9 | 9 | 9 | 9 | 9 | 9 |
| Asian Restaurant | 209 | 209 | 209 | 209 | 209 | 209 |
| BBQ Joint | 83 | 83 | 83 | 83 | 83 | 83 |
| Bagel Shop | 1 | 1 | 1 | 1 | 1 | 1 |
| Bakery | 286 | 286 | 286 | 286 | 286 | 286 |
| Bengali Restaurant | 10 | 10 | 10 | 10 | 10 | 10 |
| Bistro | 36 | 36 | 36 | 36 | 36 | 36 |
| Burrito Place | 5 | 5 | 5 | 5 | 5 | 5 |
| Cafeteria | 24 | 24 | 24 | 24 | 24 | 24 |
| Café | 557 | 557 | 557 | 557 | 557 | 557 |
| Chaat Place | 2 | 2 | 2 | 2 | 2 | 2 |
| Chettinad Restaurant | 15 | 15 | 15 | 15 | 15 | 15 |
| Chinese Restaurant | 325 | 325 | 325 | 325 | 325 | 325 |
| Indian Restaurant | 1707 | 1707 | 1707 | 1707 | 1707 | 1707 |
| Indian Sweet Shop | 4 | 4 | 4 | 4 | 4 | 4 |
| Indonesian Restaurant | 2 | 2 | 2 | 2 | 2 | 2 |
| Italian Restaurant | 202 | 202 | 202 | 202 | 202 | 202 |
| Japanese Curry Restaurant | 8 | 8 | 8 | 8 | 8 | 8 |
| Japanese Restaurant | 44 | 44 | 44 | 44 | 44 | 44 |

Exploratory Data Analysis –Foursquare (cont.)

The table on the right shows a part of dataframe used in the analysis.

In this dataframe it can be seen that upscale areas such as Anna Nagar, Alwarpet, Adyar, Egmore, Mylapore, Nungambakkam etc have more Italian places.

This is due to those areas considered to be commercial hubs and upmarket residential places.

Egmore, Nungambakkam & alwarpet are the most common commercial destinations owing to a lot of entertainment avenues nearby which makes it most common place for Italian restaurants.

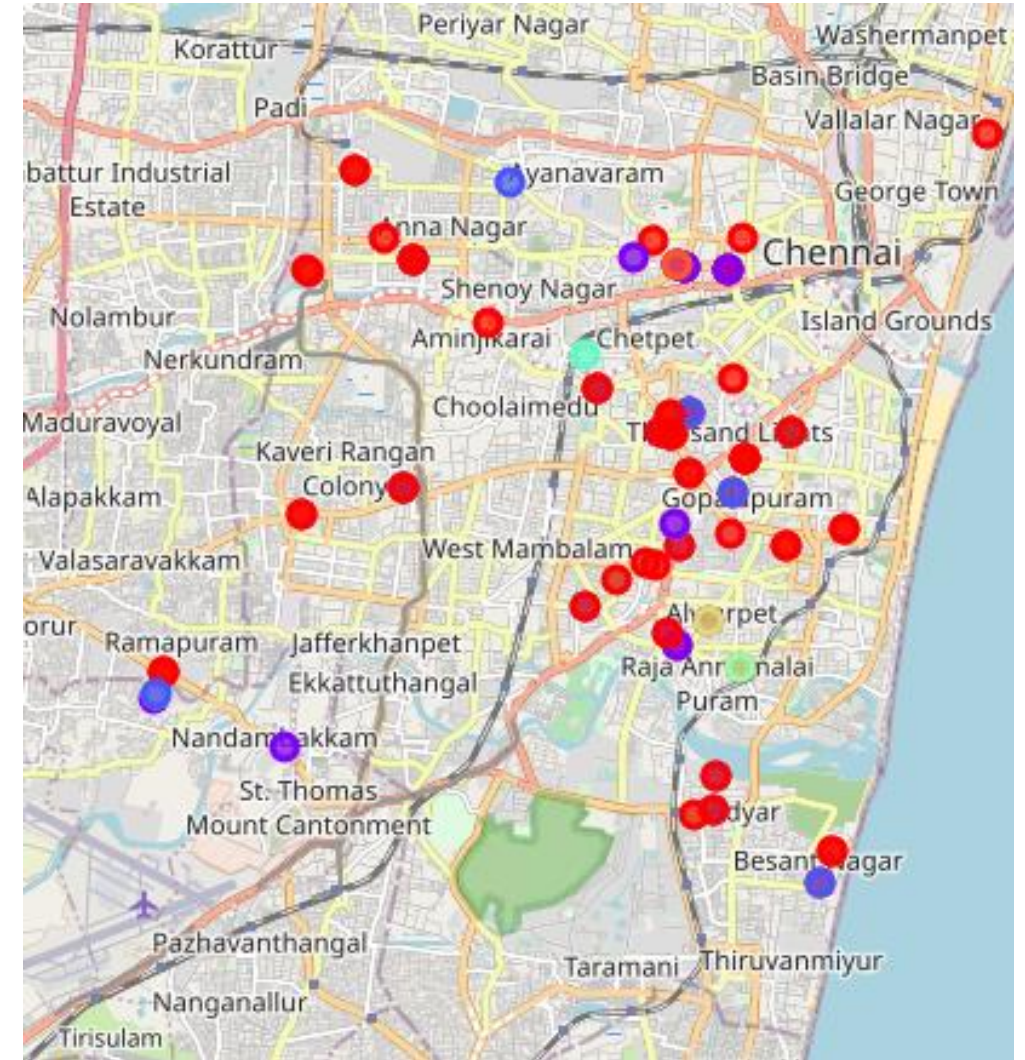
Anna nagar, Mylapore and Adyar are the residential hubs which makes them ideal places too

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---------------------|-----------------------|------------------------|-------|----------------|-----------------|----------------|
| Adyar\in | 9 | 9 | 9 | 9 | 9 | 9 |
| Alandur\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Alapakkam\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Alwarpet\in | 23 | 23 | 23 | 23 | 23 | 23 |
| Alwarthirunagar\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Ambattur\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Aminjikarai\in | 3 | 3 | 3 | 3 | 3 | 3 |
| Anna Nagar\in | 9 | 9 | 9 | 9 | 9 | 9 |
| Annanur\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Arumbakkam\in | 3 | 3 | 3 | 3 | 3 | 3 |
| Ashok Nagar\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Ayanavaram\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Basin Bridge\in | 2 | 2 | 2 | 2 | 2 | 2 |
| Basant Nagar\in | 5 | 5 | 5 | 5 | 5 | 5 |
| Chepauk\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Chintadripet\in | 6 | 6 | 6 | 6 | 6 | 6 |
| Chitlapakkam\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Choolai\in | 6 | 6 | 6 | 6 | 6 | 6 |
| Choolaimedu\in | 9 | 9 | 9 | 9 | 9 | 9 |
| Chrompet\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Egmore\in | 13 | 13 | 13 | 13 | 13 | 13 |
| Foreshore Estate\in | 6 | 6 | 6 | 6 | 6 | 6 |
| Mugalivakkam\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Mylapore\in | 15 | 15 | 15 | 15 | 15 | 15 |
| Nandanam\in | 20 | 20 | 20 | 20 | 20 | 20 |
| Nanganallur\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Nanmangalam\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Neelankarai\in | 3 | 3 | 3 | 3 | 3 | 3 |
| Nemilichery\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Nesapakkam\in | 4 | 4 | 4 | 4 | 4 | 4 |
| Nolambur\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Noombal\in | 1 | 1 | 1 | 1 | 1 | 1 |
| Nungambakkam\in | 21 | 21 | 21 | 21 | 21 | 21 |

Interpreting the results

Considering the earlier explanation of commercial hubs and upmarket residential places and looking at the distribution of Italian restaurants in the map shown,

- Most of Italian restaurants are concentrated in the central part of Chennai
- As we move westward toward the industrial areas, the density of Italian is lower
- Also, the availability of Italian food in southern part (Along OMR and ECR) which is considered the IT hub it is clear that there is no Italian restaurant.
- Considering the fact that, many people consuming the cuisine are living along OMR and ECR a good Italian restaurant situated anywhere along OMR will see good footfalls.
- As a second option, a good restaurant near Mambalam/Kodambakkam is also expected to get good footfalls due to a lack of good Italian places in the vicinity



The End