FINIDING A SUITABLE RESTAURANT IN BANAGLORE

Coursera Capstone Project

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CONTENT

1. INRODUCTION

Bangalore is the capital of India's southern Karnataka state. It is India's high-tech industry hence containing a large number of working people. This has increased the number of young adults who depend on restaurant for their food. Different people have different requirements when it comes to choosing a restaurant. While going to a new place knowing the restaurants in different areas help you decide the suitable locality for an individual.

1.1 Business Problem

Deciding the most suitable locality with the most suitable restaurants can improve the comfort of living for a person.This project will allow customers to categorise and classify their restaurants easily.

1.2 Target Audience

This project will help the working class, tourists and families decide on the restaurants of their choice.

2. DESCRIPTION OF DATA

2.1 Required Data

1. Postal code of areas in Bangalore:
   Different areas of Bangalore can be identified using the postal code.
2. Latitude and longitude of restaurants
   Coordinates of the restaurants help identify the locality in which the restaurant belongs as well as its distance from a certain location.
   It also helps in creating a map that helps in the visualisation of the location of the restaurant.
3. Ratings of the restaurants
   Ratings of restaurants are used for clustering the restaurants.

2.2 Source of Data

1. Postal codes of areas in Bangalore is determined by extracting it for sites online.
2. Latitude and longitude is determined using geopy.
3. Restaurants are found using Foursquare API.
4. Rating of restaurants are determined using Foursquare API

3. METHODOLOGY

Restaurants in Bangalore along with its details are extracted. They can be divided based on their ratings available by other users. Restaurants around 8kms is identified along with details such as location, distance ,category, state etc. This can be used for develop a better understanding of the restaurant. Using the latitude and longitude you can identify the distribution of different types of restaurants in an area.

The postal code of the areas in Bangalore is extracted. Unwanted data such as the state and district name is removed. Areas for which postal codes could not be retrieved are also removed. A map is plotted using the coordinates available.

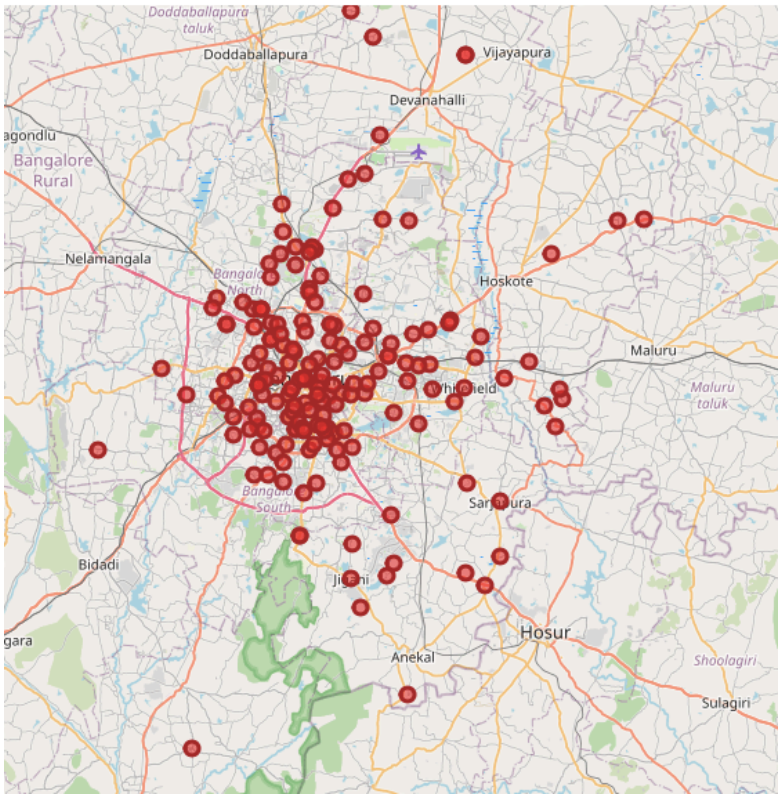

Fig 1. Areas in Bangalore

The latitude and longitude values for the areas are extracted using the geocoder.

Then the restaurants in Bangalore is extracted using the foursquare API. The information received is in json format. The data has to be cleaned and normalised to create a dataset that can be used for analysis. The dataset contains information such as coordinates, id, name and location of the restaurant.

The restaurants in Bangalore is extracted using Foursquare API. The coordinates are extracted followed by the mapping of the restaurants. The details of the restaurants are also extracted when he Foursquare API is called.

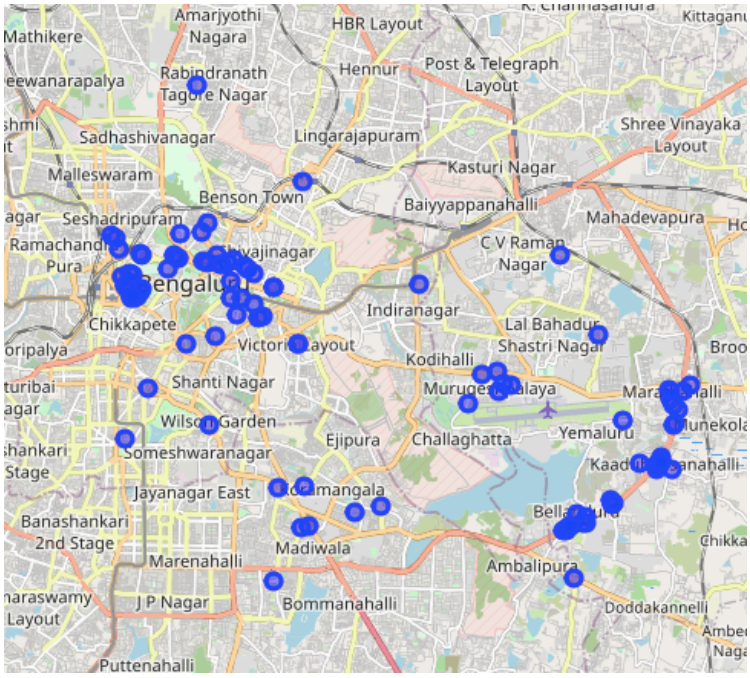

Fig 2: Restaurants in Bangalore

3.1 Analysis

From the data collected, we can determine the condition of the restaurants in Bangalore. First we shall analyse the different category of restaurants and the most common type of restaurant in the city.

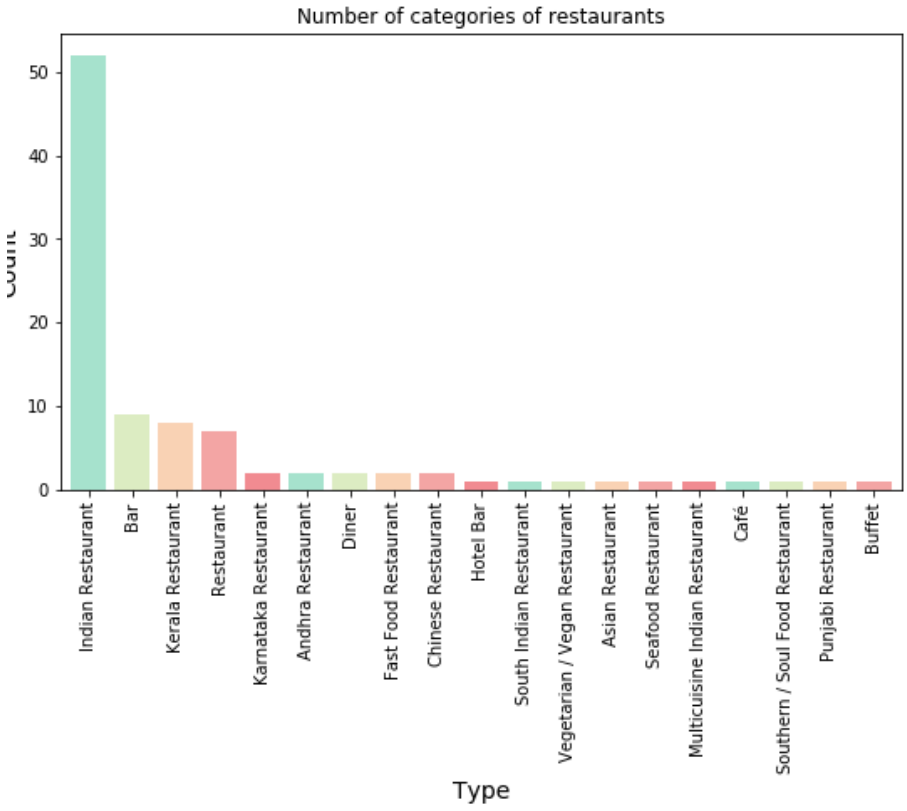

Fig 3: Categories of Restaurants in Bangalore

From the above bar graph , we can see that Indian restaurants are present the most in the city.

Now, we can compare the restaurants based on their ratings. After extracting the ratings from available restaurants using the Foursquare API, we can perform some analysis.

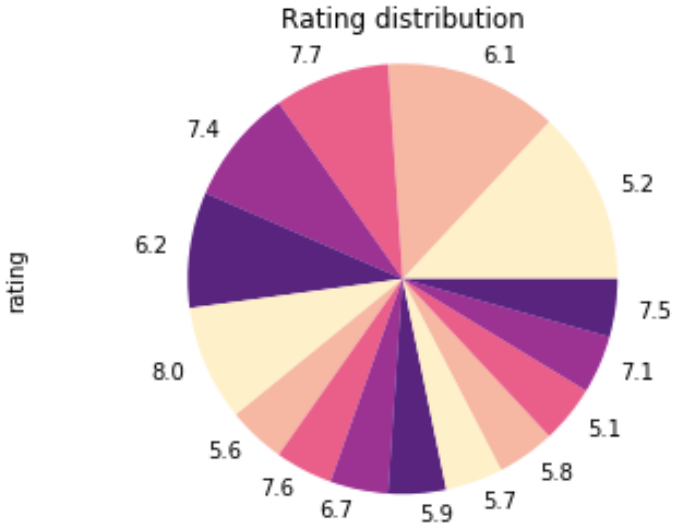

Fig 4: Rating distribution

The above diagram shows the distribution of ratings for the restaurants that were extracted. It shows that a large number of restaurants fall under the rating of 6 to 7 according to this dataset.

Now let us analyse the ratings of restaurants based on there category.

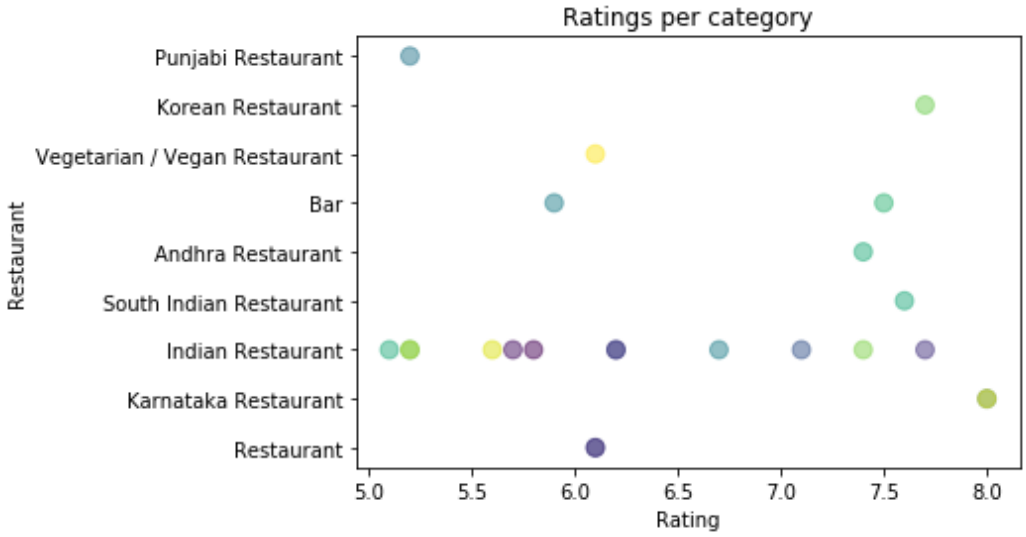

Fig 5: Rating based on category

From the figure we can see that a Karnataka restaurant has the highest rating of 8 from the remaining restaurants.

3.2 Clustering Model

K-Means algorithm is used for clustering the restaurants into its respective category. K- means algorithm is an iterative algorithm that partitions the dataset into k clusters. In this situation we are going to divide the dataset into 3 clusters where one cluster represents the highly rated restaurants , the second cluster represents the medium rated restaurant and the last cluster represents the low rated restaurants.

After performing the clustering, a map is created showing the various clusters.

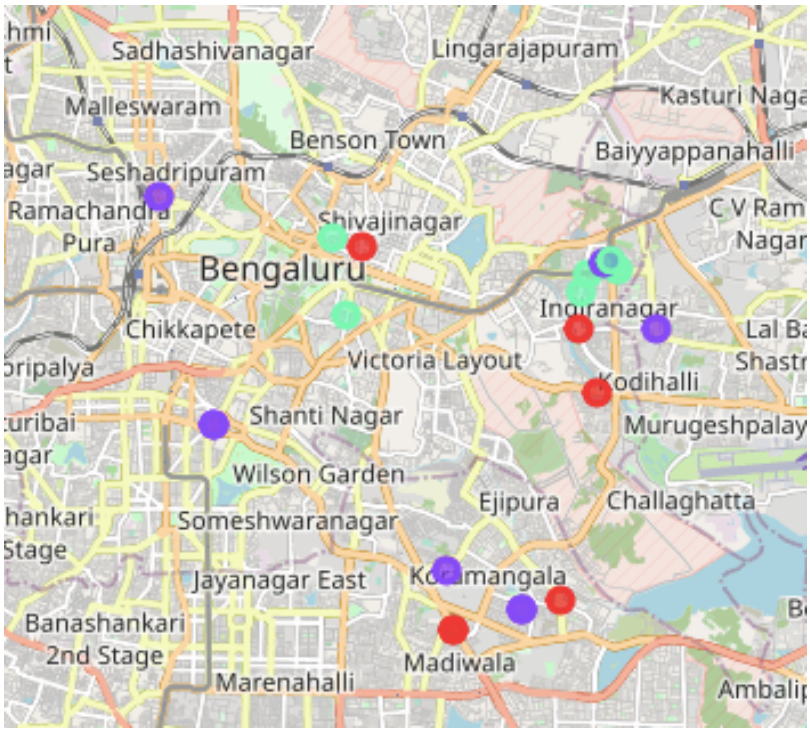

Fig 6: Restaurants clustered based on ratings

4.RESULT

From the model we can determine the following information:

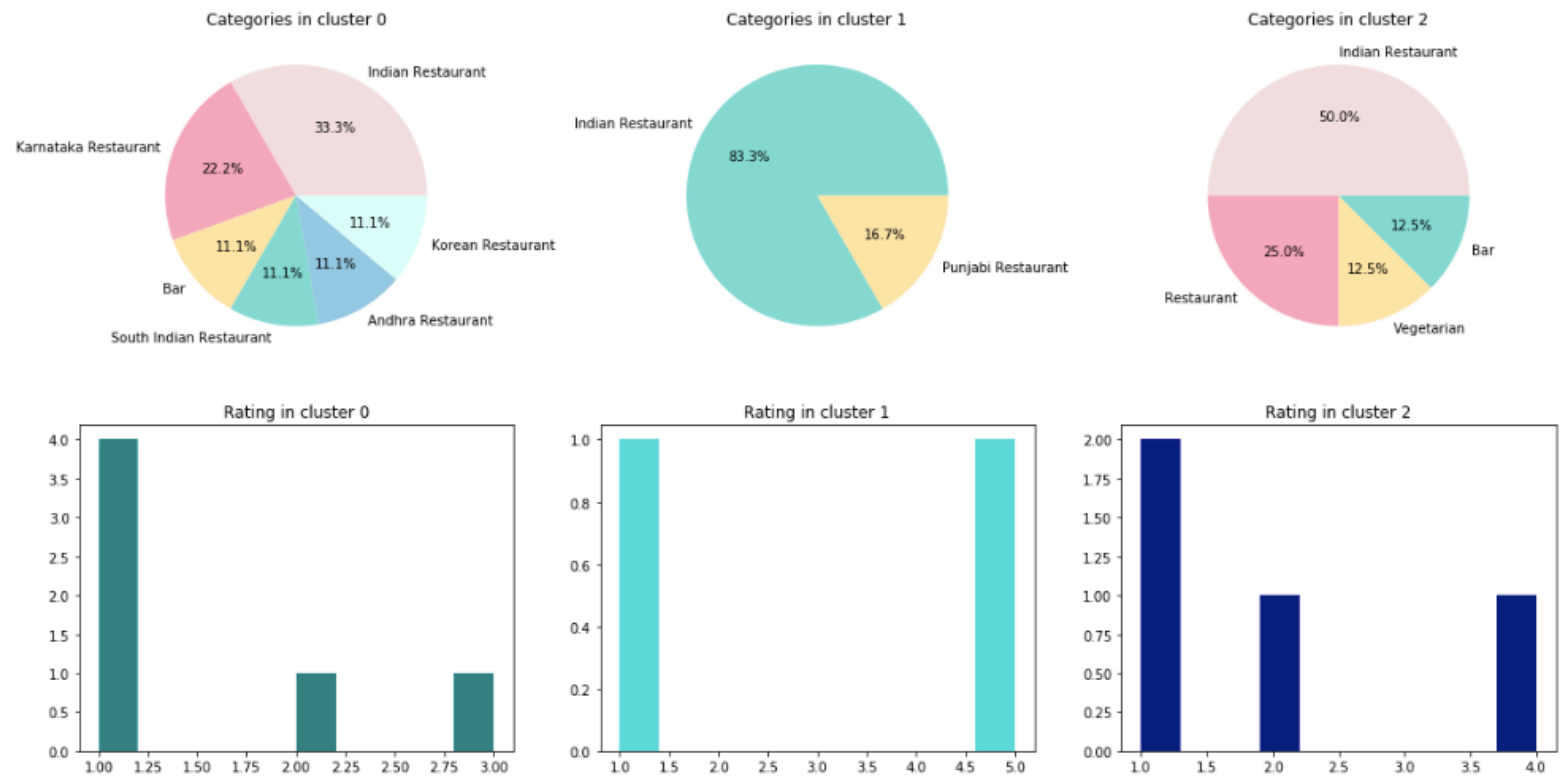

Fig 7: Clusters of restaurants

Cluster 0 represents the restaurants with the highest rating (7 to 8). It consists of Indian restaurants as its main category(33%). Coorg - The Restaurant is the restaurant with the highest rating.
Cluster 1 represents the restaurant with the minimum ratings(5 to 5.9). It consists of Indian restaurants as its main category(83%).
Cluster 2 represents the restaurants with medium rating (6 to 7).

5. DISCUSSION

It is noticed that a lot of restaurants are present around areas such as Indranagar , Koramangala etc. It is also noticed that Indian restaurants are the most preferred as there is a lot of restaurants in this category. This shows that people enjoy Indian cuisine more than any other. The seems to a demand for other south India cuisines such as Kerala, Karnataka etc. This is seem as a large variety of people from all over the country are found in Bangalore.
The most preferred cluster would be cluster 0 as it contains the restaurants with good rating.

6. CONCLUSION

The main purpose of this project is to determine areas in Bangalore with restaurants with good ratings.
This would be helpful for a person that is new to the city and is finding a locality with good food that is suitable for that individual. It also explain the different categories of cuisines available in the city and the ratings of those restaurants.

If an individual is searching to settle down in Bangalore and if he wants to live in locality here he would have easy access to the restaurants of his choice then this project would be able to provide them the required information.