

Capstone Project - The Battle of Neighborhoods

Vinodhini V.

Introduction

- ◆ Business Objective :
 - ◆ Identify the best location to setup a coffee shop in Bangalore based on location proximity and ratings of existing shops in the neighborhood.
- ◆ For a new business to start-up a coffee-shop in Bangalore, sufficient research must be done to identify the best location. The current analytics project will aid to narrow down the locations based on the coffee-shops in the neighborhood and their ratings.

Data Requirements

- ◆ Data required for this analysis :

1. List of Neighborhoods in Bangalore -
https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Bangalore
2. Latitude and Longitude details of the Neighborhoods
3. List of coffeeshops in each neighborhood (Extracted from Foursquare)
4. Ratings of the coffee shops (Extracted from Foursquare)

- ◆ Neighborhood details and their latitude and longitude information helps to fetch the details of the coffee shops in each locality.
- ◆ Ratings of each coffee shop helps in the analysis to answer the objective.

Methodology

◆ Exploratory Analysis :

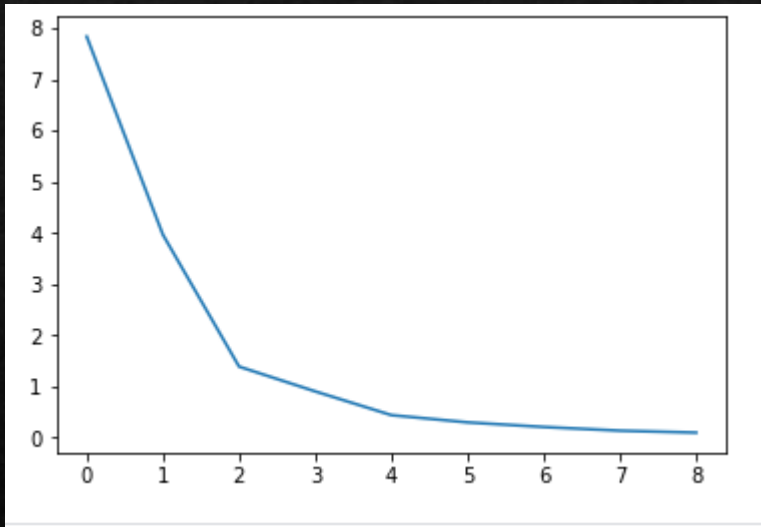
- ◆ There are about 64 prominent neighborhoods in the city of Bangalore, spread on the north, south, east and west of Bangalore.
- ◆ In these 64 locations, 128 coffee shops are located as found on Foursquare.
- ◆ Only 37 out of 128 coffee shops has a rating listed on Foursquare.
- ◆ The mean of the rating is 6.3 with maximum being 7.7 and minimum as 5.1.

Methodology

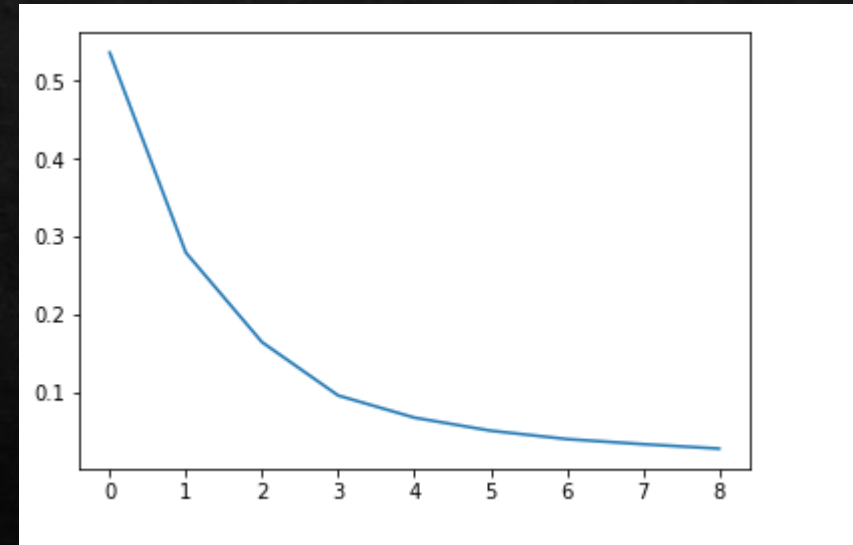
- ◆ Data Clean-up/Preparation:
 - ◆ Any null values are treated by dropping the records.
 - ◆ Coffee shops with no rating are imputed suitably.
- ◆ Machine Learning Model :
 - ◆ Unsupervised Clustering using KMeans is preferred approach.
 - ◆ Clustering will be applied to understand the proximity and distribution of coffee-shops in the neighborhood.
 - ◆ Clustering on the ratings will be done to understand how the coffee shops are distributed based on rating and locality.
 - ◆ **Elbow method** will be applied to identify the suitable number of clusters.
 - ◆ Validations done by plotting the output of cluster over maps and reviewed manually.

Results

- ◆ Optimum number of clusters for neighborhood proximity and rating of coffee shops was 2.



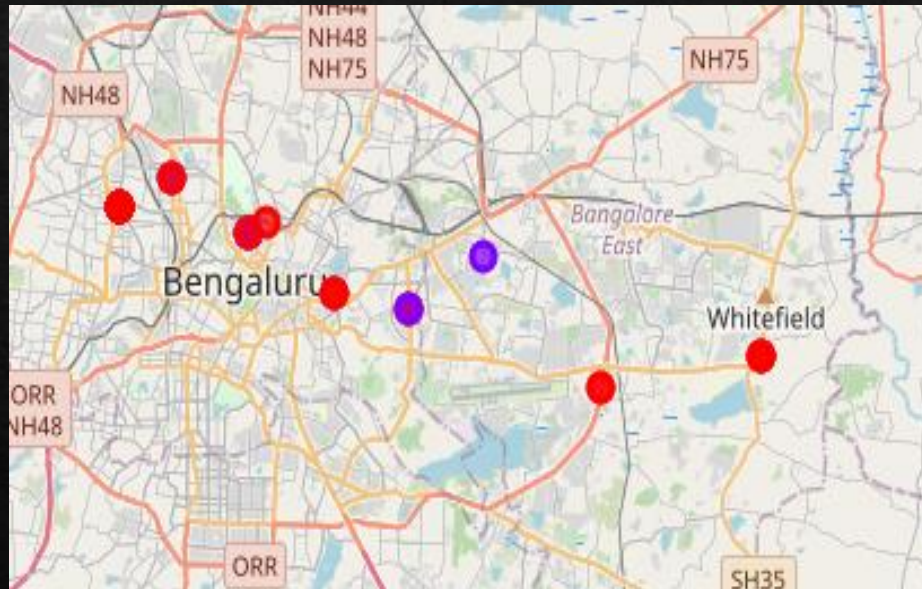
- Optimum number of clusters for neighborhood proximity of coffee shops was 3.



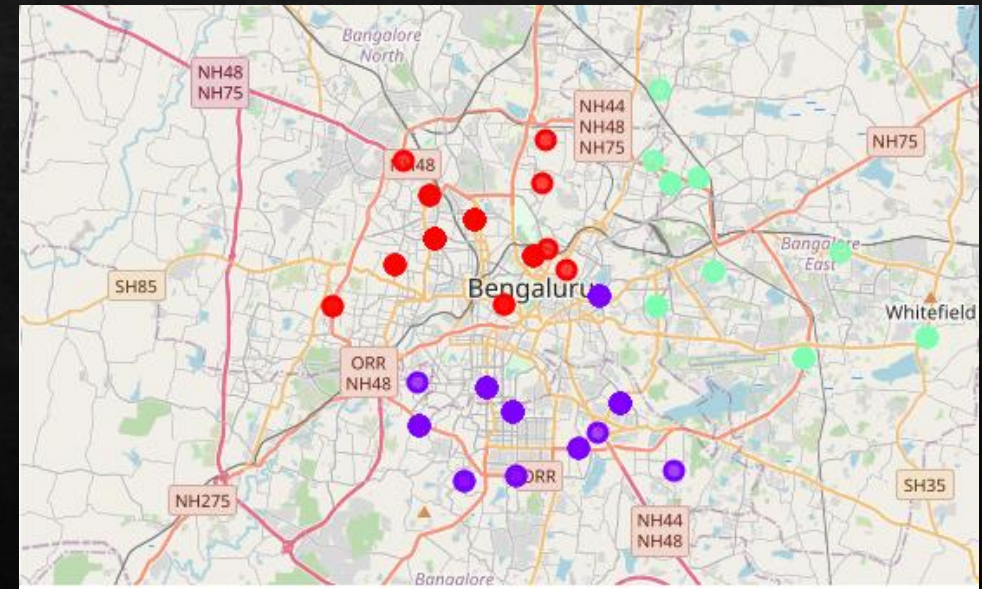
- ◆ Bangalore East has coffee shops sparsely distributed compared to other regions.
- ◆ Out of the many Coffee shops listed, only 37 have been rated. Most of the ratings hover around 5-7. Ratings of 6-7 are mostly seen around Bangalore North-West.

Results

Cluster distribution – Coffeeshops with ratings



Cluster distribution – Coffeeshops in Neighborhood



Discussion and Conclusion

- ◆ The outcome of this project along with other Market Research related to
 - i. population and surroundings
 - ii ratings on other platforms for Coffee shops
 - iii Coffee variants and other beverages offeredcan help finalize the optimal location for setting up a Coffee shop.
- ◆ This standalone analysis suggests potential opportunities in East Bangalore as there is lack of good rated coffee shops.