

Coursera Capstone Project

The Battle of Neighborhoods: Opening a Restaurant in Mumbai, India

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Introduction

- Restaurants are places for spending quality family time outside home
- Demand for good restaurants has increased in recent years.
- Restaurant business is a major service industry and provide employment to many people.
- Restaurant business support other sectors (e.g., tourism)
- One of the most profitable ventures in the service industry.
- Mumbai is the 2nd most populous city in India and the 7th most populous city in the world (Wikipedia).

Business Problem

- Location and land use of venue – critical for new restaurant
- Venue must have demand for a new restaurant
- Objective: to analyze and select the best locations in the neighbourhood of Mumbai to open a new restaurant.

Target Audience

- Aspiring small business owners / restaurateurs
- Chefs, culinary experts and employees in the food industry
- Local populace

Data and Methodology

- List of all neighbourhoods: from Wikipedia (https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Mumbai)
- Geocoder package: Geographic coordinates:.
- Foursquare API; Venue data (top 100 in a 1000 m radius).
- beautifulsoup package (Python): Data extraction.
- Pandas Dataframe: Data storage in tabular form
- Unsupervised clustering with 3 centroids, based on the concentration of restaurants (k-means algorithm)

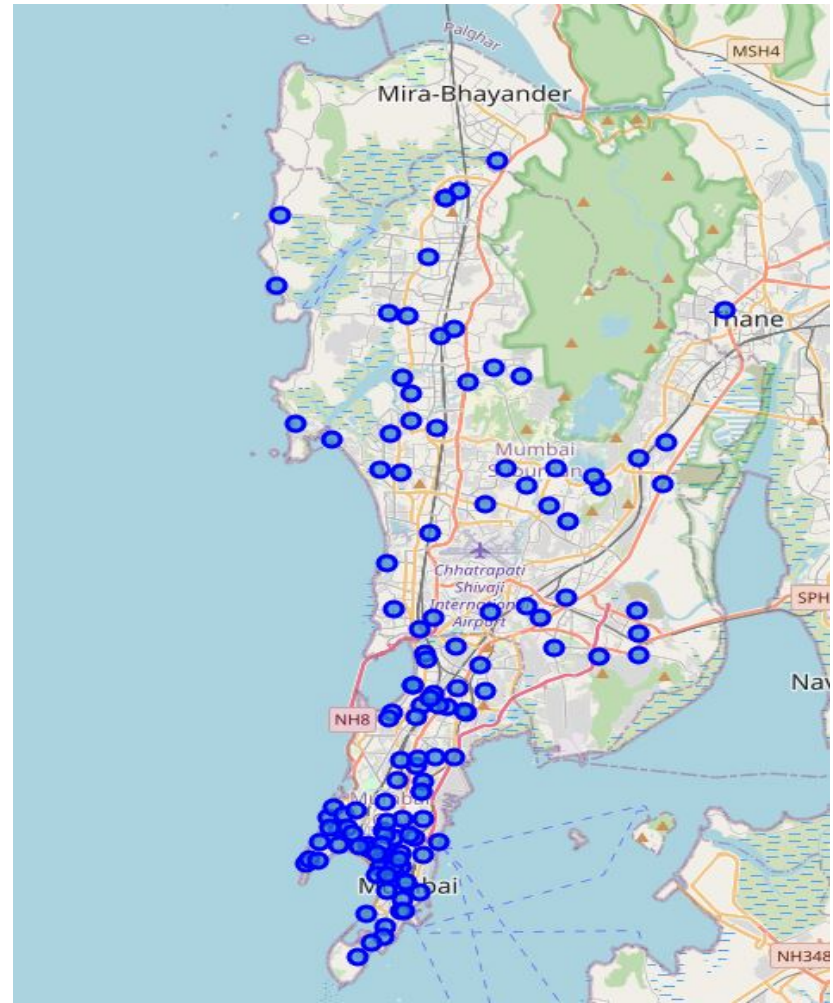


Fig. 1: Map of the neighbourhoods in Mumbai, India (generated using Python Folium package)

Results

- 3 clusters of neighbourhoods by k-means clustering
- Cluster 1 (Red): Second highest concentration of restaurants.
- Cluster 2 (Purple): Lowest concentration of restaurants.
- Cluster 3 (Green): Highest concentration of restaurants

Discussion

- West- & South- Mumbai (Cluster 2, purple): Few restaurants, ideal location for new business (e.g., Dadar and Matunga).
- Central and south-eastern Mumbai (Cluster 3, green): Highest concentration of restaurants, not suitable for new restaurant business.
- South and central Mumbai (Cluster 1, red): second highest concentration of
- Report is based on clustering of only the existing concentration of restaurants in the neighbourhoods of Mumbai – limitation for analysis.
- Demography data would be required for a more appropriate decision
- Type of restaurant must be considered while selecting the venues.
- Different clustering algorithms may be considered for comparison of results

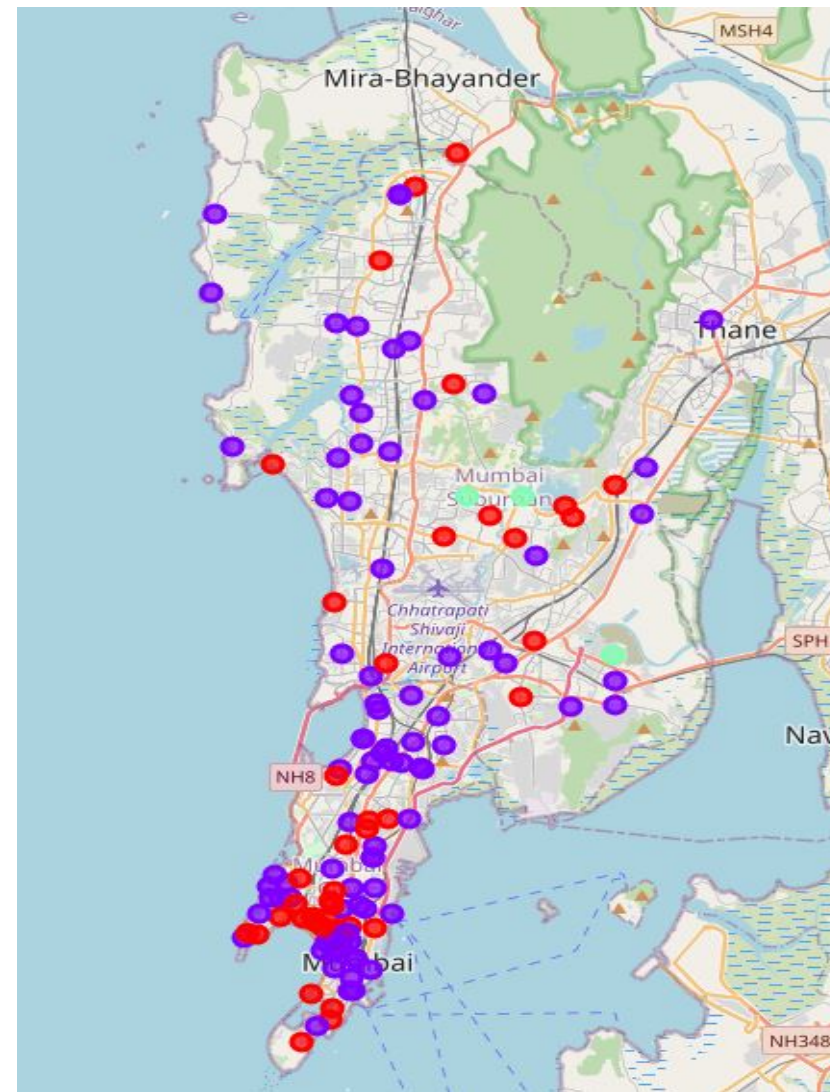


Fig. 2: k-means clustering of restaurants in Mumbai neighbourhoods

THANK YOU !

