

IBM Applied Data Science Capstone Project

Opening of a Pizza Place near Mumbai's popular Tourist Places

By Kunal Tale

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Business Problem

- ◆ Location of the Pizza Place is one of the most important decisions that will determine whether the Food facility will be a success or a failure
- ◆ Objective: To analyse and select the best locations near a tourist destination in the city of Mumbai, India to open a new Pizza Place
- ◆ This project is timely as Mumbai city is one of the most visited city in India both by domestic and international travellers and Pizza Place are becoming one of the important food junction in the City.
- ◆ Business question
 - ◆ In the city of Mumbai, if a Pizza Place firm is looking to open a new Pizza Place, where would you recommend that they open it?

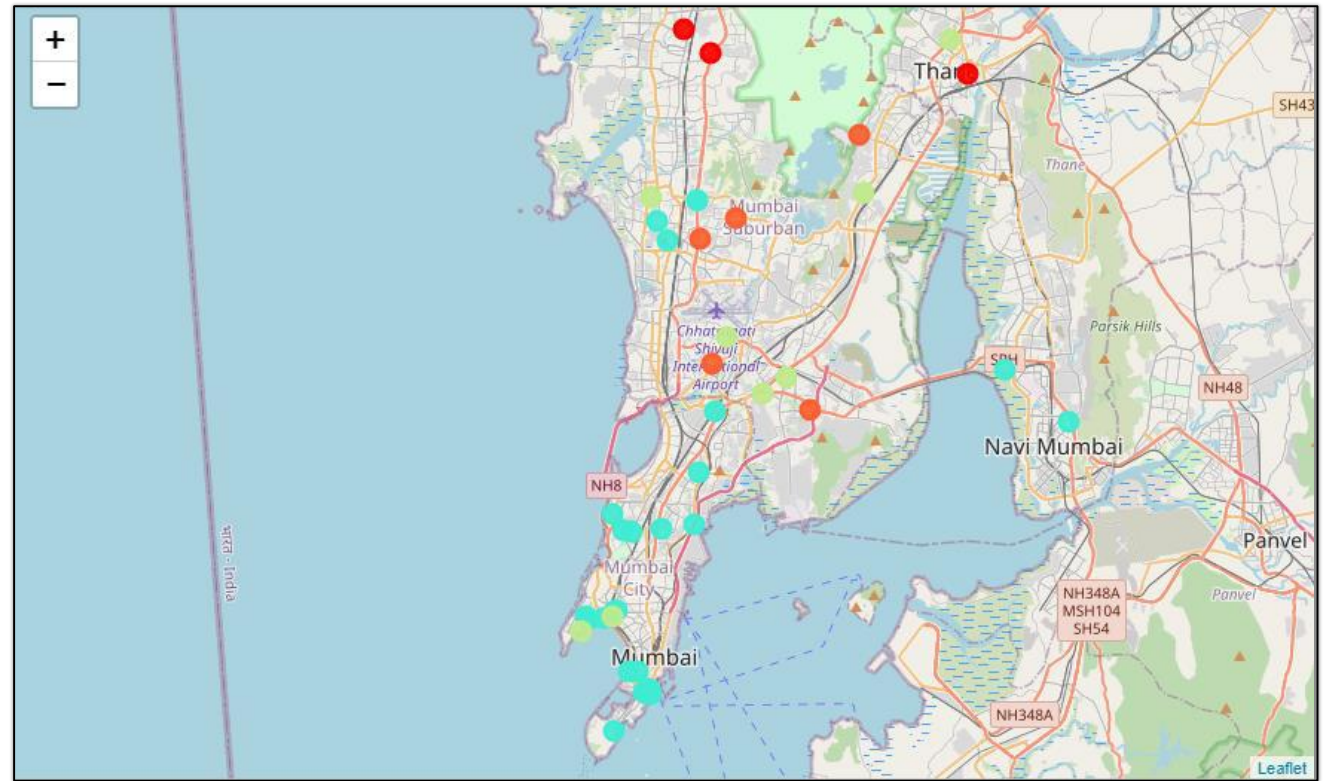
Data

- ◆ Data Required
 - ◆ List of Tourist destination in Mumbai
 - ◆ Latitude and longitude coordinates of the tourist places
 - ◆ Venue data, particularly data related to pizza places near tourist destinations
- ◆ Source of Data
 - ◆ List of Tourist places in Mumbai: https://en.wikipedia.org/wiki/List_of_tourist_attractions_in_Mumbai
 - ◆ Geocoder package for latitude and longitude coordinates
 - ◆ Foursquare API for venue data

Methodology

Web	Web scraping Wikipedia page for Tourist destination list
Get	Get latitude and longitude coordinates using Geocoder
Use	Use Foursquare API to get venue data
Group	Group data by neighbourhood and taking the mean of the frequency of occurrence of each venue category
Filter	Filter venue category by Pizza Places
Perform	Perform clustering on the data by using k means clustering
Visualize	Visualize the clusters in a map using Folium

Results



Cluster	Total Tourist Places	Tourist Places	Presence of Pizza Place	%Presence of Pizza Place	Viable Option
0 Cluster 1	4	Metro Junction Mall ; Growel's 101 ; Dadaji Ko...	4	100.000000	Yes
1 Cluster 2	63	Wadia Movietone ; Vasai Fort ; Tulshi Dam ; St...	1	1.587302	No
2 Cluster 3	1		1	100.000000	Yes
3 Cluster 4	28	Tulsi Lake ; St. John the Baptist Church ; St...	0	0.000000	No
4 Cluster 5	28	The Table ; Sewri Fort ; Regal Cinema ; Raghul...	12	42.857143	Yes
5 Cluster 6	21	Wagheshwari Temple ; Vihar Lake ; Sterling Cin...	0	0.000000	No
6 Cluster 7	11	Viviana Mall ; Shaneshwar Sansthan ; Royal Ope...	9	81.818182	Yes
7 Cluster 8	1		1	100.000000	Yes
8 Cluster 9	5	R. K. Studio ; Mahakali Caves ; Jijamata Udyaa...	5	100.000000	Yes

Discussion

- ◆ The Tourist destination in Mumbai are classified under 9 Clusters
- ◆ 6 out of the 9 Clusters have Pizza Places as significant contribution as one of its top 10 most common venues near their Tourist Places
- ◆ Cluster 4 (light blue) has the highest number of neighbourhood popularity in Pizza Places followed by Cluster 8 (orange)
- ◆ Cluster 2 (purple) is located with long distant Tourist places and all of them have Pizza Places as one of the most popular venue of attraction near the tourist place
- ◆ Cluster 9 (red) and Cluster 7 (light green) had low number of Tourist places but they still have a great popularity for Pizza Places near its tourist places

Recommendations

Pizza Places firms are advised to focus on neighbourhoods in Cluster 4 and Cluster 8 which already have high concentration of Tourist places hence more footfall can be anticipated thought it will have an intense competition due to its popularity for Pizza. The interested Pizza Place firm is advised to maintain high quality standards and wider menu options to attract more customers and grow its business.

Conclusion

Answer to business question:
The neighbourhoods in Cluster 1, Cluster 3, Cluster 5, Cluster 7, Cluster 8 and Cluster 9 are the most preferred locations to open a new pizza place are the most preferred locations to open a new shopping mall

The findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding analysis their plan to expand their pizza place business in the city of Mumbai.

Thank You...

