Coursera Capstone

IBM Applied Data Science Capstone

Opening a new Restaurant in Visakhapatnam, INDIA

By: R.S.V.GIRISH

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Business Problem:

- Location of the Restaurants is one of the most important decisions that will determine whether the mall will be a success or a failure
- Objective: To analyze and select the best locations in the city of Visakhapatnam, INDIA to open a new Restaurants.
- This project is timely as the city is currently suffering from oversupply of Restaurants.
- Business question in the city of Visakhapatnam, INDIA, if a property developer is looking to open a new Restaurants, where would you recommend that they open it?

Data:

Data required :

- List of neighborhoods in Visakhapatnam.
- Latitude and longitude coordinates of the neighborhoods.
- Venue data, particularly data related to Restaurants.

Sources of data:

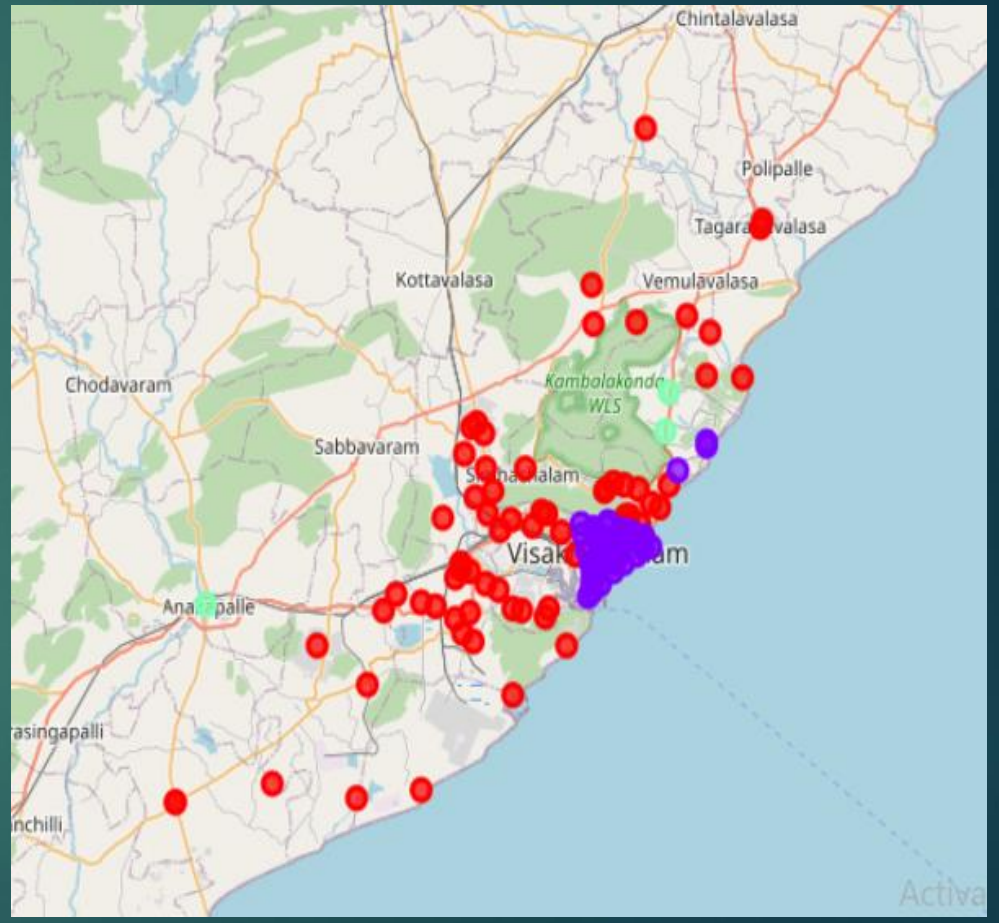
- Wikipedia page for neighborhoods (https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Visakhapatnam)
- Geocoder package for latitude and longitude coordinates , Foursquare API for venue data.

Methodology:

- Web scraping Wikipedia page for neighborhood's list.
- Get latitude and longitude coordinates using Geocoder.
- Use Foursquare API to get venue data Group data by neighborhood and taking the mean of the frequency of occurrence of each venue category.
- Filter venue category by Restaurants perform clustering on the data by using k-means clustering.
- Visualize the clusters in a map using Folium.

Results:

- **Categorized the neighborhood's into 3 clusters:**
- Cluster 0: Neighborhood's with low number to no existence of Restaurants.
- Cluster 1: Neighborhood's with moderate number of Restaurants.
- Cluster 2: Neighborhood's with high concentration of Restaurants.



Discussion:

- Most of the Restaurants are concentrated in the central area of the city.
- Highest number in cluster 2 and moderate number in cluster 1.
- Cluster 0 has very low number to no Restaurants in the neighborhood's.
- Oversupply of Restaurants mostly happened in the central area of the city, with the suburb area still have very few Restaurants.

Recommendations:

- Open new Restaurants in neighborhoods in cluster 0, with little to no competition.
- Can also open in neighborhoods in cluster 1, with moderate competition if have unique selling propositions to stand out from the competition.
- Avoid neighborhoods in cluster 2, already high concentration of Restaurants and intense competition.

Conclusion:

- Answer to business question: The neighborhoods in cluster 0 are the most preferred locations to open a new Restaurants.
- Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new Restaurants.

THANK YOU!