Exploring Neighbourhoods of Hyderabad, India – To decide on ideal location for Food Court

Tirthankar Baidya

June 15, 2021

Business Problem

- The purpose of this project is to locate certain areas in Hyderabad, which is having a huge potential for Food court Business with good foot fall.

- The target audience for such a project is twofold.
  - Any Food court joints or aggregators who is looking for lucrative investment in Hyderabad
  - Any real estate developers, who is looking for Commercial investment

Data

- Data Sources
    - The **Wikipedia** page (https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India) contains a list of neighborhoods in Hyderabad, India
    - **Foursquare** API is used to fetch categories of venue data. Foursquare has one of the largest data base with 105+million places and used by over 125,000 developers across the Globe

- Data Extraction
    - Web scraping techniques to extract data from Wikipedia page with the help of Python requests and Beautifulsoup packages.
    - Geographical co-ordinates of the neighborhoods are derived using Python Geocoder package which will give us latitude and longitude coordinates of neighborhoods.
    - Foursquare API will be used to get venue data for those neighborhoods. The categories of venue data related to Food court will be used for project
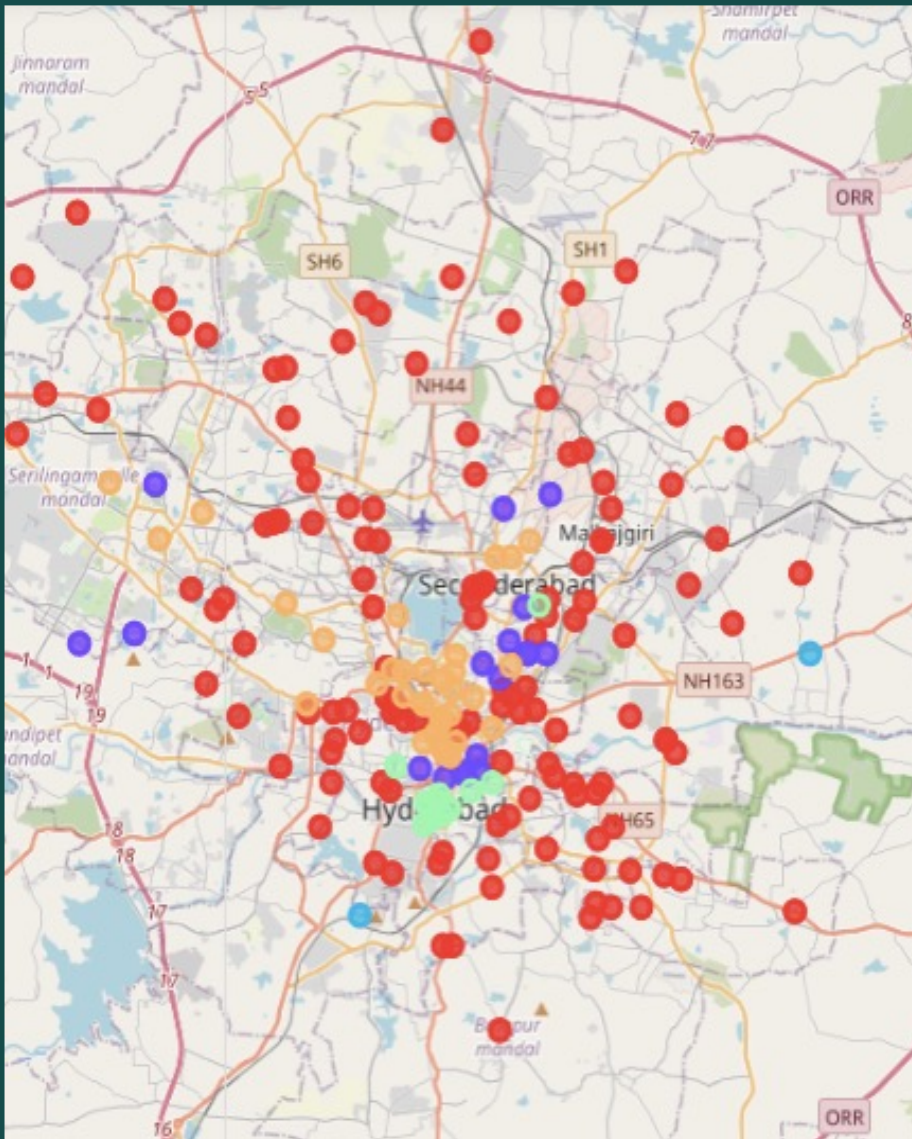
Methodology

- Web scarping from **Wikipedia** page (https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India) is done to extract list of neighbor hoods.

- Geocoder package is used to link this Neighborhood addresses with geographical coordinates (Latitude & Longitude)

- Deriving the top 100 venues for each neighborhood within 2km radius and filter those with "Food court" as criteria using Four Square API

- The final data is clustered into 5 Clusters using K-mean clustering

- 5 clusters provides frequency of occurrence of Food Court in those clusters.

- The places where limited or zero presence are suggestive places, whereas places with high density of Food courts presence should be avoided.

Result

The neighborhoods of Hyderabad is clustered in 5 Clusters, based on frequency of occurrence of Food Court.

- Cluster 0 (Red dots in map)- Neighborhood with **zero or minimum** number of Food court
- Cluster 1 (Violet dots in map)- Neighborhood with **moderate** presence of Food court
- Cluster 2 (Turquoise dots in map)- Neighborhood with **limited** number of Food court
- Cluster 3 (Green dots in map)- Neighborhood with **high density** of Food court
- Cluster 4 (Amber dots in map)-- Neighborhood with **moderate** presence of Food court

Based on the this above depiction, it is observed there is scope of having good Food court Business in Cluster 0, followed by Cluster 2. However, this is an exploratory research, and there are other associated factors to take conclusion

Conclusion

- It is observed that most of the food courts are located towards center of the city, whereas frequency is less towards outskirts. There is a potential for opening Food court in number of places as Cluster zero is having largest number of Neighborhoods. This can be a lucrative option.

- However, there is a limitation of this study. This is an exploratory study, where objective is to identify neighborhoods, where there is a scope of building Food court. There should be other study conducted before concluding on single location. This is study includes demographics division, population density, spending capability etc. Also, standalone restaurant will indirectly compete with Food court. The frequency of occurrence Restaurants also need to be studied