Capstone Project - Battle of Neighbourhoods

Introduction to Business Problem

Opening a new Italian Restaurant in Hyderabad, India:

Hyderabad is a cosmopolitan city spread across the area of 7250 Km2 roughly making it the fourth most populous city in India. The city is popular for its rich heritage and it is home for restaurants serving multiple cuisines. The objective of this project is to evaluate the best possible location to open Italian Restaurant in Hyderabad, India with minimum competition.
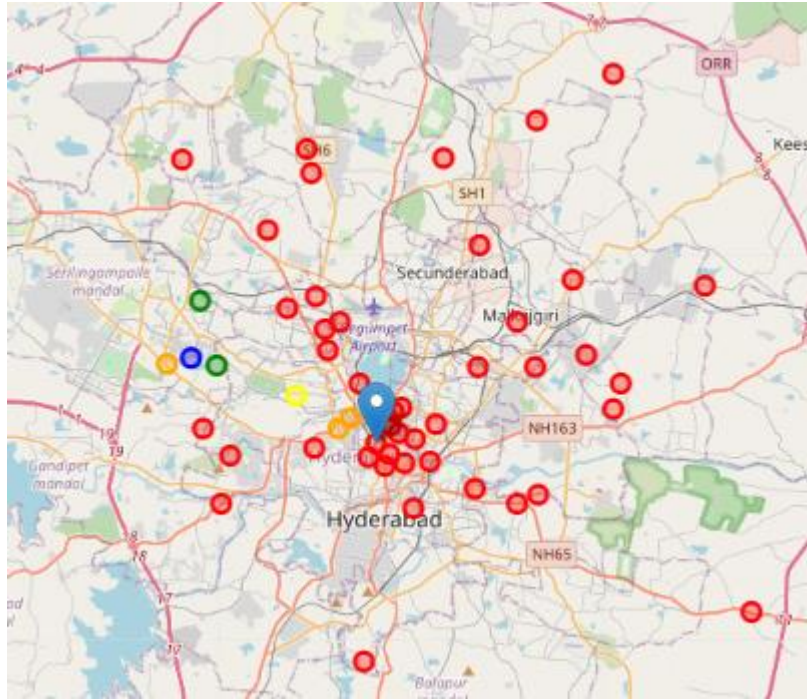
Data

Data Sources for the Project would be:

- Wikimedia Commons: Information about areas/localities in Hyderabad
- Geopy - For the co-ordinates of different locations
- Foursquare API - To get the list of venues and their details around a given location

Methodology

1. To get the Lat, Long co-ordinates of the Hyderabad city.
2. To get the list of localities in the Hyderabad and their co-ordinates.
3. Explore the venues and venue categories in the target localities.
4. Cluster the localities in the Hyderabad city.
5. Analysing the clusters formed.
6. Collecting information about the Italian Restaurant already present in the clusters
7. Compare the clusters and recommend the cluster with minimum competition

After gathering the necessary data & converting the data to the required format by using the above methodology. Machine learning classification algorithm (K Means Clustering) is used to divide the localities in Hyderabad into 5 clusters with the presence or absence of Italian restaurant. The results are interpreted & necessary maps are plotted for better visualization and decision making.

Results & Observations

- Analysing the clusters accordingly we can infer that cluster-1(shown with red color) has no existing Italian Restaurant with the highest numbers of the same in cluster-3(shown with blue color).

- Moderate number of Italian Restaurants are present in cluster-2 and cluster-5(shown with green, yellow color) and low number of Italian Restaurants are found in cluster-4 (shown in orange color).

- The analysis shows that most of the Italian restaurants are spread across central to North west region of the city. Hardly, there are no restaurants in the eastern part of the city. There are no Italian restaurants in the outer parts of the city.

Conclusion

- Cluster-1 and cluster-4 are the best options for the outsider/ investors to open the Italian restaurant in Hyderabad.

- As Cluster 1 has no Italian restaurants, restaurant need to spend more money for marketing efforts, while for cluster-4 which already has existing Italian restaurants with very low competition can attract the existing customers visiting to other Italian restaurants along with new customers.