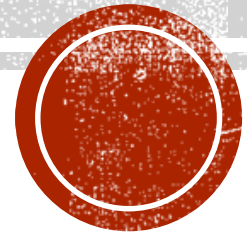


IBM CAPSTONE PROJECT

Business Consultancy for Property Developers to Open a Shopping Mall

By

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BUSINESS PROBLEM & AUDIENCE

- Opening a shopping mall requires huge amount of financial resources as well as time. To make a shopping mall a success, the choice of its location can play a vital role.
- Use data science to address the problem of deciding the best location in the city of Karachi to open a Shopping Mall
- The audience of this project will be the property developers who are interested in opening a shopping mall in Karachi



DATA REQUIRED & SOURCE

- List of all the neighborhoods in Karachi
- Geocoordinates of against all the neighborhoods
- And finally the venues in the neighborhoods
- Source: https://en.wikipedia.org/wiki/Category:Neighbourhoods_of_Karachi



METHODOLOGY

- Data collection
- Data cleaning
- Retrieve and plot geocoordinates against neighborhoods
- Use FourSquare to get the list of venues against neighbourhoods
- Filter venues to select shopping malls in Karachi
- Use K-Means to cluster the shopping malls
- Visualize and cluster using Folium
- Make recommendations



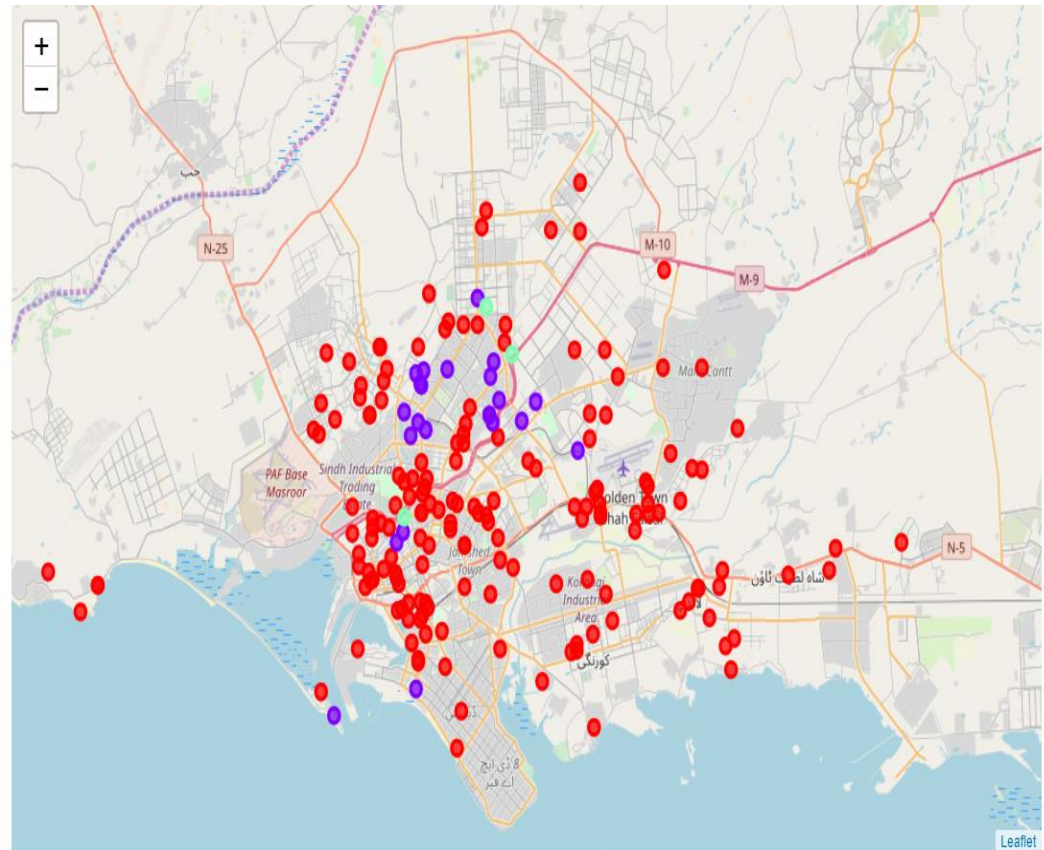
RESULTS

We have used K-Means to cluster the shopping malls in the city

Cluster 0: Neighborhoods with no shopping malls and is represented with red circles on the map

Cluster 1: Neighborhoods with high concentration of shopping malls and is represented with purple circles on the map

Cluster 2: Neighborhoods with low concentration of shopping malls and is represented with mint circles on the map



RECOMMENDATION

- There is little information available on cluster0 about the wealth profile of the neighborhoods, there may be slums and low income neighborhoods in this cluster and therefore not recommended for opening a shopping mall.
- Cluster 1 is composed of middle to high income neighborhoods, considering these neighborhoods may be a little risky but it would surely be rewarding at the same time because of greater foot fall and awareness in the neighborhood and is recommended for risk taking developers
- Cluster2 and its surrounding neighborhoods would be a good choice to open shopping malls and is recommended for risk averse developers

