

Capstone Project

IBM Data Science

Professional

OPENING A NEW BUSINESS PARK IN DUBAI, UAE

BY: TUSHAR TYAGI

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Business Problem

- Location of the Business Park is one of the most important decisions to determine whether the project will be a success or a failure
- Objective: To analyze and find the best locations in the city of Dubai, UAE to open a Business Park
- Business question:
“In the city of Dubai, UAE, if a real estate developer or an investor is looking to open a new Business Park, where would you recommend that they open it?”

Data

- Data Acquired:
 - List of communities in Dubai, UAE
 - Coordinates (Latitude and Longitude) of the communities in Dubai, UAE
 - Venue data of all communities in Dubai
- Sources:
 - Wikipedia page for list of communities in Dubai (https://en.wikipedia.org/wiki/List_of_communities_in_Dubai)
 - Geocoder package for coordinates (latitude and longitude)
 - Foursquare API for venue data

Methodology

- Web scraping Wikipedia page for communities list
- Get coordinates (latitude and longitude) using Geocoder
- Use Foursquare API to get venue data
- Group data by communities and taking the mean of the frequency of occurrence of each venue category
- Perform clustering on the data by using k-means clustering
- Visualize the clusters though a map using Folium

Results

- Categorized the communities into 3 clusters :
 - Cluster 0: Communities with outdoor venues such as Football Stadiums and small-scale food joints
 - Cluster 1: Very commercial and mostly concentrated towards North Dubai. Communities with a huge variety of Restaurants, Hotels, Pubs, shops, cafes, restaurants, bars and pubs (***Good Location***)
 - Cluster 2: Slightly away from the coast and a bit in the interior of Dubai. Communities with small-scale businesses such as Grocery Stores, Flea Markets, Fish Markets, Small Restaurants
 - Cluster 3: Lies far inland from a coast or border. Community is an Investment Park with a few restaurants
 - Cluster 4: Cluster 4 is the biggest, very urban and the most commercial area. Communities with high end Restaurants, Shopping Malls, Hotels, Yoga Studios, Bars, Cafes (***Ideal Location***)
 - Cluster 5: Communities in remote areas of Dubai with no venues or attractions (***Worst Location***)

Discussion & Recommendations

- Cluster 4 and Cluster 1 (in order) are most suitable for new Business Park projects
- Cluster 0 and Cluster 2 can be explored by Property developers with heavy financial backing. Cheaper in terms of property and no competition but decent cost in infrastructure.
- Real estate developers are advised to avoid communities in Cluster 5 for new Business Park projects

Conclusion

- Answer to Business Question: The Communities in Cluster 4 are the most preferred locations to open a new Business Park, followed by Cluster 1
- The findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding the areas with little commercial value, while making decisions to open a new Business Park.

Thank You!