COURSERA CAPSTONE IBM APPLIED DATA SCIENCE

SITUATING A NEW SHOPPING MALL IN LAGOS, NIGERIA

BUSINESS PROBLEM

- Location of the shopping mall 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 area of Lagos, Nigeria to open a new shopping mall

• Business question

  ➢ In the city of Lagos, Nigeria, if a property developer is looking to open a new shopping mall, where would you recommend that they open it?

  ➢ *"Where are the most promising area with least competition and most likely business success?"*

DATA

- Data required

  ➢List of areas in Lagos

  ➢Latitude and longitude coordinates of the areas

  ➢Venue data, particularly data related to shopping malls

- Sources of data

  ➢Wikipedia page for Lagos areas
  (https://en.wikipedia.org/wiki/List_of_Lagos_State_local_government_areas_by_population)

  ➢Geocoder package for latitude and longitude coordinates

  ➢Foursquare API for venue data

METHODOLOGY

- Web scraping Wikipedia page for area list

- Get latitude and longitude coordinates using Geocoder

- Use Foursquare API to get venue data

- Group data by area and taking the mean of the frequency of occurrence of each venue category

- Filter venue category by Shopping Mall

- Perform clustering on the data by using k-means clustering

- Visualize the clusters in a map using Folium

RESULTS

- Categorized the areas into 3 clusters :

  ➢ Cluster 0: Areas with high number of shopping malls

  ➢ Cluster 1: Areas with low number to no existence of shopping malls

  ➢ Cluster 2: Areas with moderate concentration of shopping malls

DISCUSSION

- Most of the shopping malls are concentrated in the central area of the city

- Highest number in cluster 0 and moderate number in cluster 2

- Cluster 1 has very low number to no shopping mall in the areas

- Oversupply of shopping malls mostly happened in the central area of the city, with the suburb area still have very few shopping malls

RECOMMENDATIONS

- Open new shopping malls in areas in cluster 1 with little to no competition

- Can also open in areas in cluster 2 with moderate competition if have unique selling propositions to stand out from the competition

- Avoid areas in cluster 0, already high concentration of shopping malls and intense competition

CONCLUSION

- Answer to business question: The area in cluster 1 are the most preferred locations to open a new shopping mall

- 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 shopping mall

THE END

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THANK YOU FOR LISTENING TO MY PROJECT