The Battle of Neighborhoods: Choosing the Best Location for Your Next Food Business

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DASHBOARD

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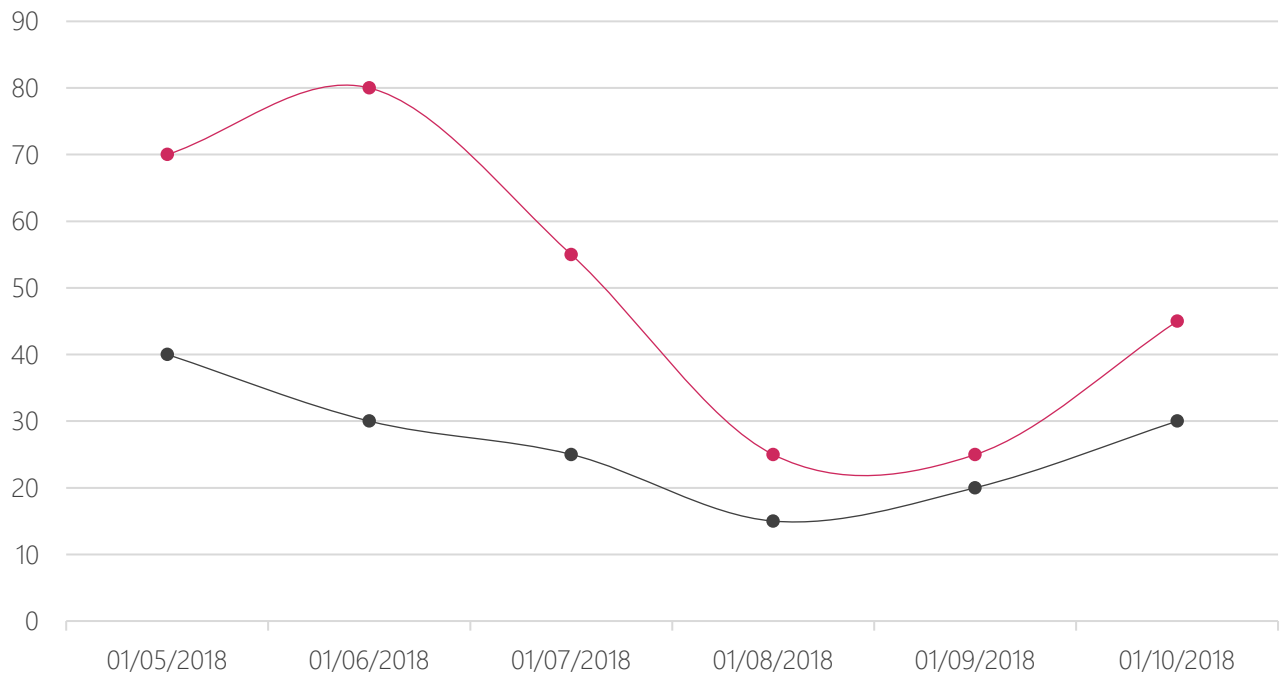

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INTRODUCTION

QUEZON CITY, PHILIPPINES

- Largest city in the Philippines in terms of population
- Accounts for one-fourth of the entire Metropolitan Manila in terms of land area
- Increasing trend in the number of registered businesses
- 90% of businesses in the services sector, where hotels & restaurants activities rank 3rd in terms of share.

INTRODUCTION

OBJECTIVES

- To identify the most common restaurant types in each of the neighborhoods in Quezon City
- To cluster similar establishments in the city
- To visualize these clusters on the map
- To develop actionable insights and make recommendations about possible locations for a food business in Quezon City

DATA

SOURCES OF DATA

- List of neighborhoods in Quezon City from Philippine Statistics Authority
- Coordinates of Quezon City using the Geopy library
- Coordinates of each of the neighborhoods using the Geopy library
- Number and types of restaurants for each location using the Foursquare API

METHODOLOGY

DATA COLLECTION AND PREPROCESSING

- Excel file from Philippines Statistics Authority was transformed in to a pandas DataFrame
- Latitude and longitude values of Quezon city and its neighborhoods were used to create a map visualizing the area
- Incorrectly assigned coordinates were supplied with correct values manually
- Foursquare API was used to collect the number and types of food establishments in the area

METHODOLOGY

EXPLORATORY DATA ANALYSIS

- 140 out of 142 neighborhoods had information on food venues
- 84 different categories of food establishments in the area
- 10 most common restaurant and 10 least common restaurant types were identified
- Map where size of the markers is proportionate with the number of food venues in the neighborhood was created

METHODOLOGY

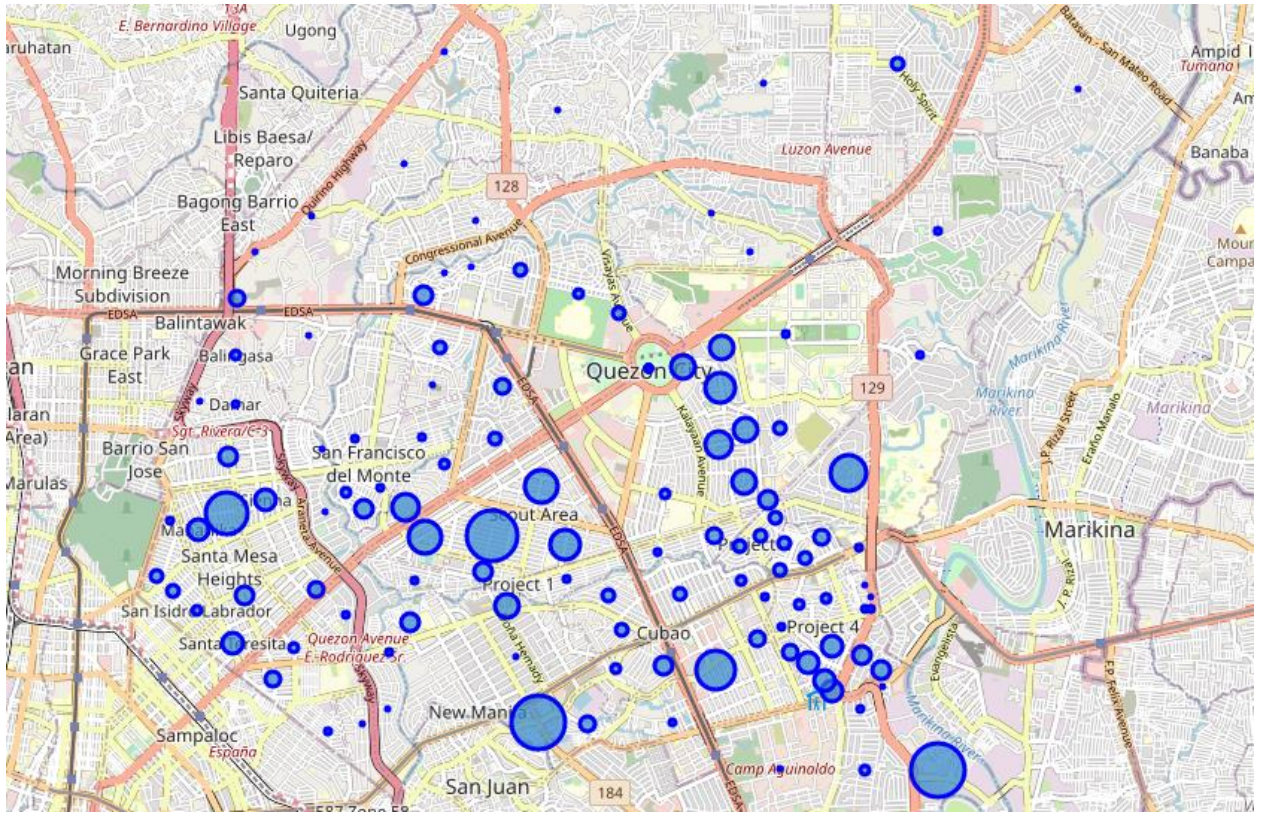
	Venue Category
Fast Food Restaurant	248
Café	232
Filipino Restaurant	222
Chinese Restaurant	197
Bakery	173
BBQ Joint	156
Pizza Place	114
Burger Joint	110
Restaurant	109
Japanese Restaurant	95

Ten Most Common Restaurant Types in Quezon City

	Venue Category
Pet Café	1
Udon Restaurant	1
Molecular Gastronomy Restaurant	1
Japanese Curry Restaurant	1
Taco Place	1
Theme Restaurant	1
German Restaurant	1
Peruvian Restaurant	1
Gluten-free Restaurant	1
Malay Restaurant	1

Ten Least Common Restaurant Types in Quezon City

METHODOLOGY



Map of Quezon City and its Neighborhoods. Size of Markers is Proportionate with the Number of Food Venues in that Neighborhood

METHODOLOGY

CLUSTERING

- K-means clustering, an unsupervised machine learning algorithm
- Venue categories were transformed into dummy variables
- Rows were grouped by neighborhood and the mean occurrence of each category was calculated
- Optimal number of clusters was determined using the elbow method (k=6)

RESULTS AND DISCUSSION

K-MEANS CLUSTERING

- Number of clusters was set at six as suggested by the elbow method
- The Scikit-learn library was used to cluster the neighborhoods
- Clusters were visualized in a map
- Each cluster was then examined

RESULTS AND DISCUSSION

K-MEANS CLUSTERING

Top 10 venues for each neighborhood was obtained

Out of 140, only 95 neighborhoods have 10 or more food venues

Most common types of restaurant for each cluster were determined

RESULTS AND DISCUSSION

Cluster	Most Common Type
Cluster 1	Burger Joint
Cluster 2	Filipino Restaurant
Cluster 3	Café
Cluster 4	Chinese Restaurants
Cluster 5	Filipino Restaurant, Wings Joint
Cluster 6	Fast Food Restaurant

Most Common Restaurant Types in Each Cluster

SUMMARY AND CONCLUSION

SUMMARY

Knowledge of the most common types of restaurants in an area will enable entrepreneurs to plan strategically

Careful consideration whether to put up a restaurant in an area where similar restaurants are commonly found is recommended

A disadvantage is tight competition - harder to establish your presence, especially if your competitors are well-known restaurants

An advantage is the foot traffic in the area - competitors may have already used large portions of their advertising budget towards driving traffic to their locations

SUMMARY AND CONCLUSION

CONCLUSION

Application of the findings of this project depends on the reader's opinion whether close proximity to competitors is beneficial or not

Example: if an entrepreneur believes that close proximity to competitors is beneficial, then they can put up a burger joint in the neighborhoods in Cluster 1

The readers decide how they are going to utilize the insights provided by this project

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