



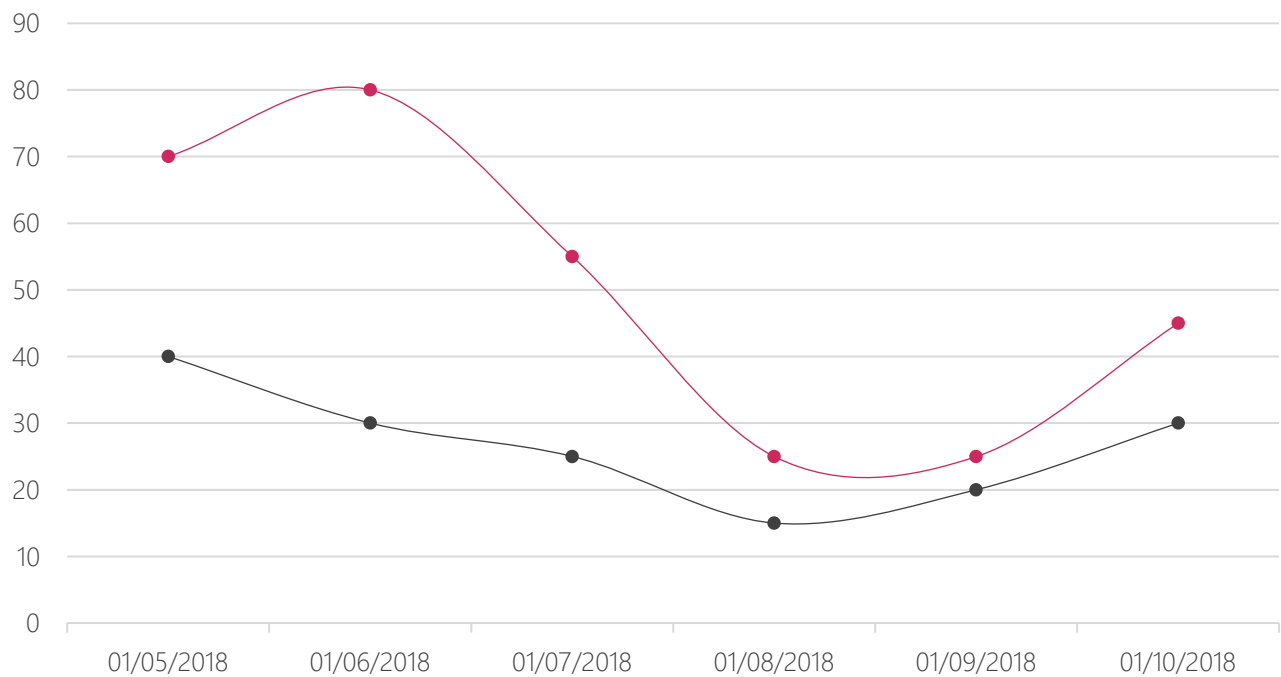
# The Battle of Neighborhoods: Choosing the Best Location for Your Next Food Business

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# DASHBOARD



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# INTRODUCTION

3

## 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

4

## 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

6

## 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

7

## 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

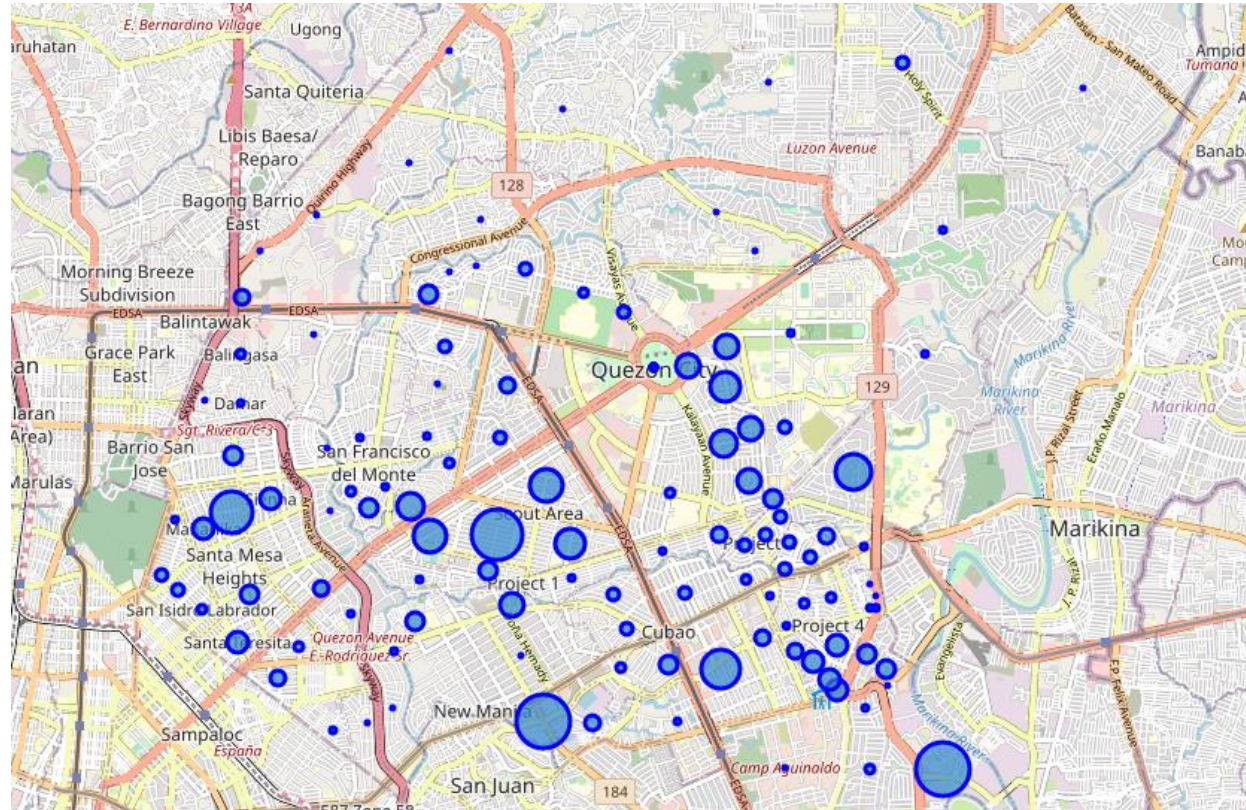
Ten Most Common Restaurant Types in Quezon City

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

## 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

11

## 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

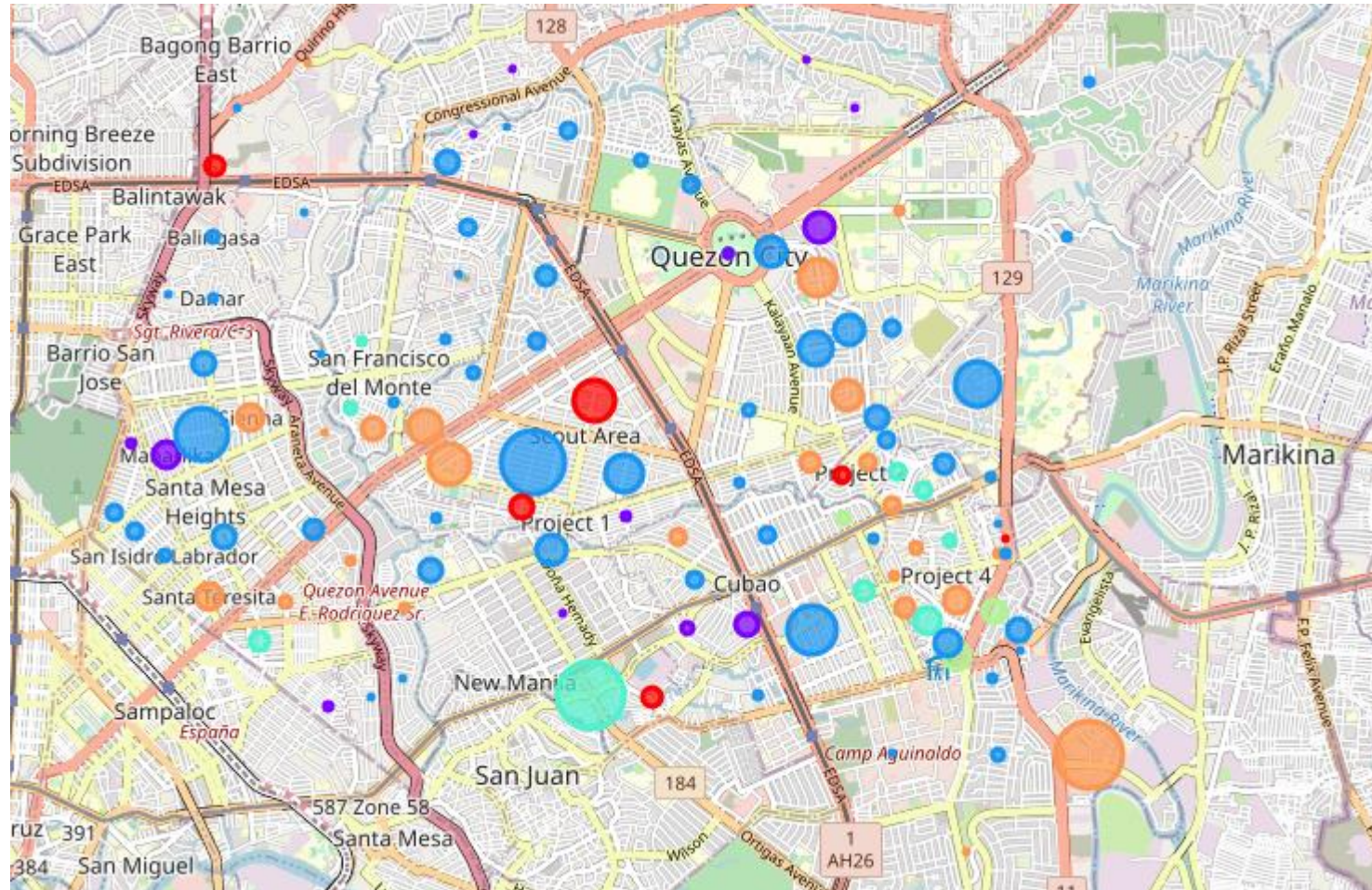


Each cluster was then examined





# METHODOLOGY



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

# RESULTS AND DISCUSSION

13

## 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

15

## 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

16

## 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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