



IBM APPLIED DATA SCIENCE CAPSTONE

OPENING A NEW RESTAURANT IN TAGAYTAY CITY, CAVITE, PHILIPPINES

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BUSINESS PROBLEM

- Objective: To analyze and select the best location in Tagaytay for a new restaurant business where there is a few competitors.
- Business Question: Where would be the ideal location if a business owner would try to open a new restaurant in the city where there would be a minimal competition.?

DATA

- Data requirements

- List of Barangays (suburbs) in Tagaytay City
- Geographical Coordinates of each Barangay
- Venue data, particularly Restaurants

- Data sources

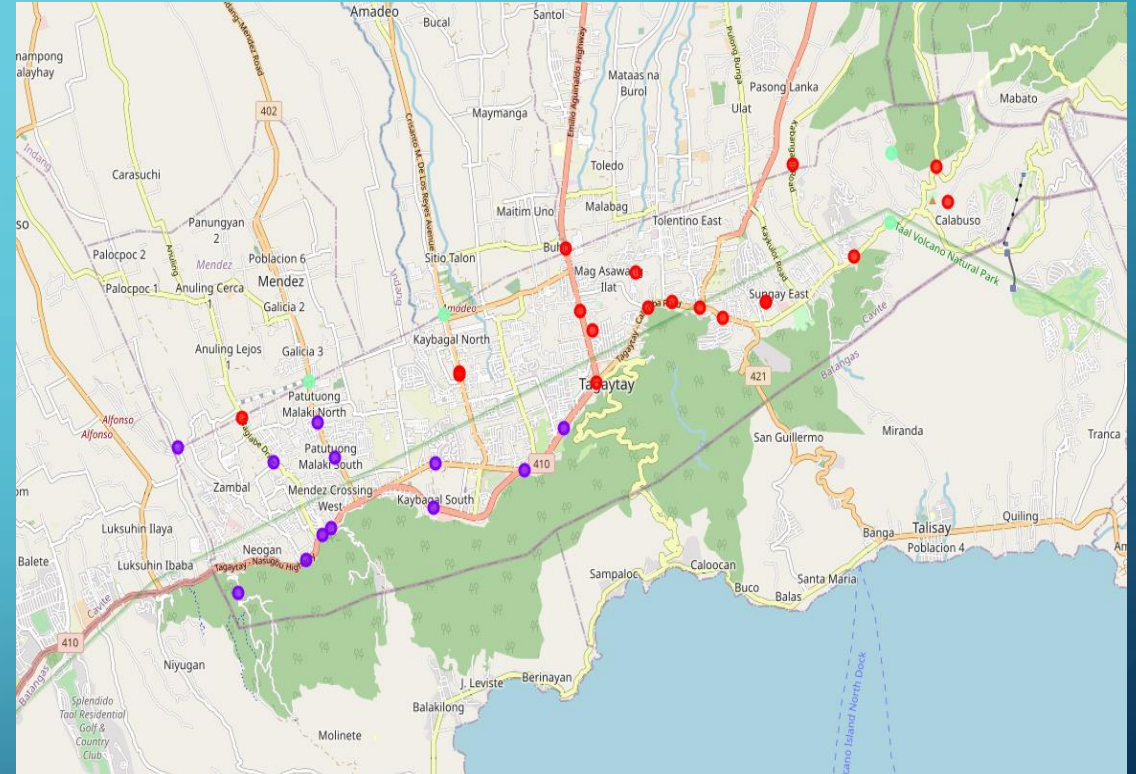
- Wikipedia page for the list of barangays in Tagaytay City
- Geocoder Package for the longitude and latitude of the barangays
- Foursquare API for the venue data for each barangays

METHODOLOGY

1. Web Scraping Wikipedia for the list of Barangays
2. Getting the geographical coordinates of each Barangay using Geocoder package
3. Use the Foursquare API to get the venue data of each Barangay
4. Merge all types of Restaurant into one venue category only.
5. Group data by Barangay and then take the mean of the frequency of occurrence of each venue category
6. Filter venue category by Restaurant
7. Perform k-means clustering algorithm to cluster the data.
8. Visualize the clusters using the Folium Package

RESULTS

- Categorized the Barangays into 3 cluster
 - Cluster 0: Barangay with high concentration of restaurants
 - Cluser 1: Barangay with moderate concentration of restaurants
 - Cluster 2: Barangay with low concentration of restaurants.



Legend:

Cluster 0 – Red

Cluster 1 – Violet

Cluster 2 – Green

DISCUSSION

- Majority of the restaurant are near the barangays on cluster 0 which is the central part of the city. It is not recommended to establish new restaurant in this cluster.
- Cluster 1 has a moderate frequency of occurrence of restaurant, it is also not wise to establish new restaurant in this cluster of barangay.
- Cluster 2 has the lowest frequency of occurrence of restaurants, there is a high potential to open a new restaurant as it has the lowest number of possible competitions

LIMITATIONS

- Only one factor was used in this project which is the frequency of occurrence of restaurants per barangay.
- Other factor such as population and buying capability was not included in the project. These factors could help to further enhance the result of this project.
- The researcher has limited access to the data for the other factors, as such it is not included.

CONCLUSIONS

- It is not recommended to establish new restaurant business in barangay on cluster 0 and 1 as it has the highest number of possible competitions.
- The barangays in cluster 2 are most recommended location to establish new restaurant business as it has the lowest number of competitions.



THANK YOU