



Business Expansion Analysis

IBM Applied Data Science Project

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Introduction

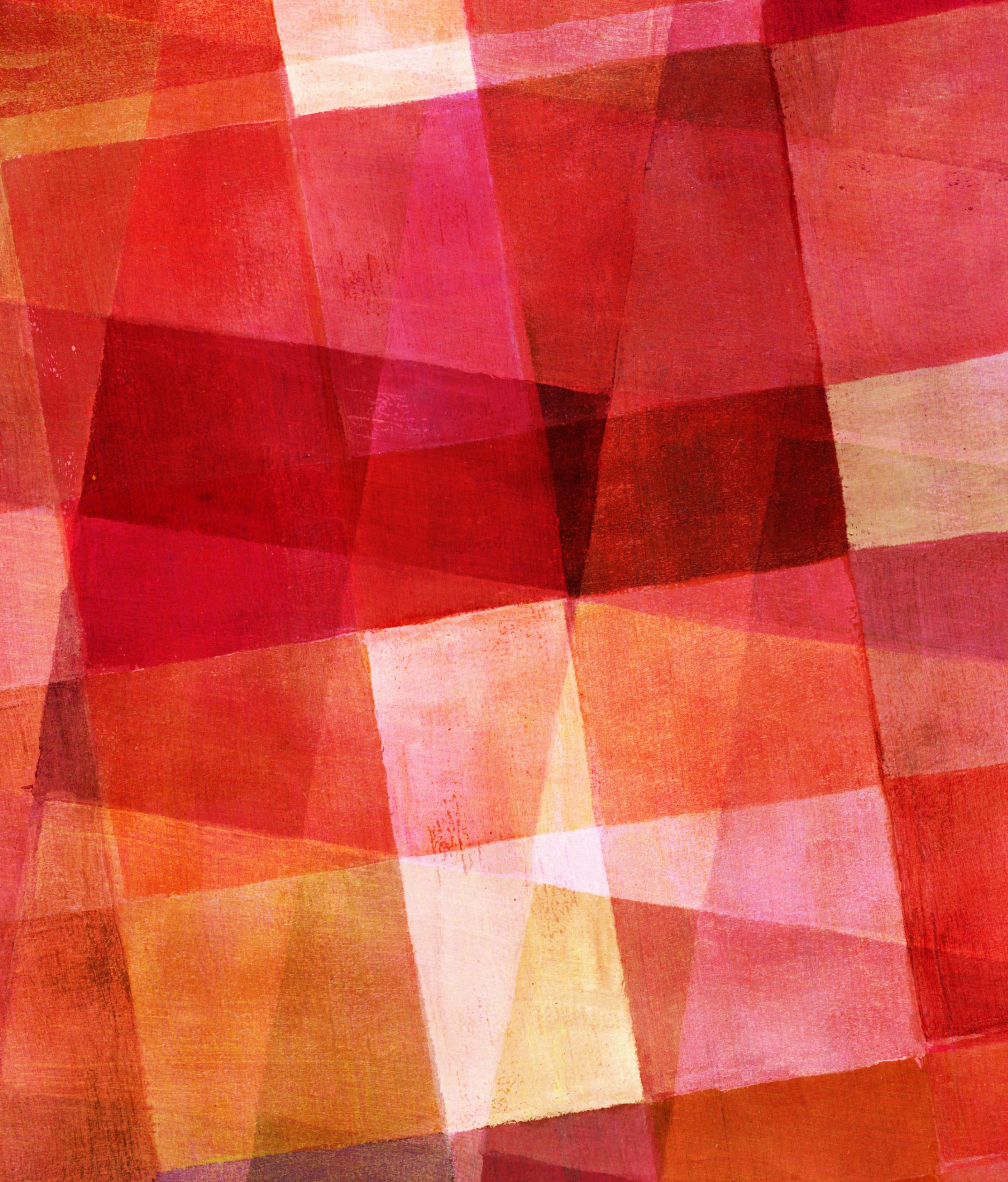
In the last years, the city of Santo Domingo has had a great growth of fast food businesses such as food trucks. Many customers are replacing visits to fast food restaurants with visits to foodtrucks.

Business Problem

The objective of this project is to analyze and select the best locations in the city of Santo Domingo, Distrito Nacional to open a Food Truck. Using data science methodology and machine learning techniques like clustering, this capstone project aims to provide solutions to new investors looking to the best location to open a Food Truck.

Target Audience

A food truck owner has contacted us to help him find the best location for a second food truck.



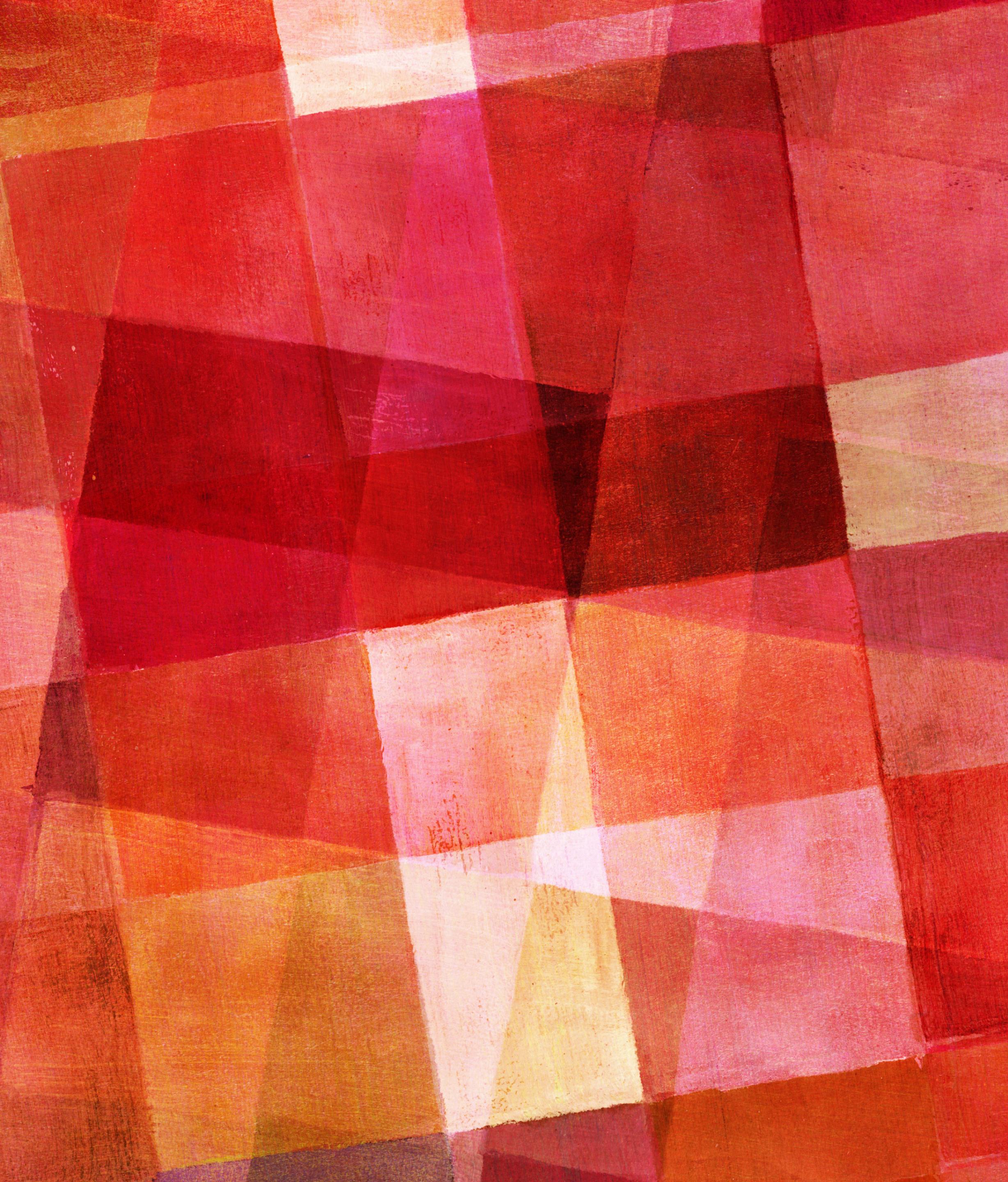
Data

- Data required:
 - List of neighborhoods in Santo Domingo, Distrito Nacional.
 - Latitude and longitude coordinates of the neighborhoods.
 - Venue data related to Food Trucks.
- Sources of data:
 - Wikipedia page for the neighborhoods.
[https://en.wikipedia.org/wiki/
Distrito_Nacional#Sectores_\(neighborhoods\)](https://en.wikipedia.org/wiki/Distrito_Nacional#Sectores_(neighborhoods))
 - Geocoder package for latitude and longitude coordinates with Google Maps API.
 - Foursquare API for venue data.



Methodology

- Web scraping Wikipedia for neighborhoods lists
- Get latitude and longitude coordinates using Geocoder.
- Merge the neighborhood dataset with the geolocation dataset
- Verify the coordinates by plotting a map with the coordinates of the neighborhoods
- User Foursquare API to get venue data
- Group data by neighborhood and taking the mean of the category
- Perform clustering on the data by using K-Means Algorithm.
- Visualize the clusters in a map using Folium



Results

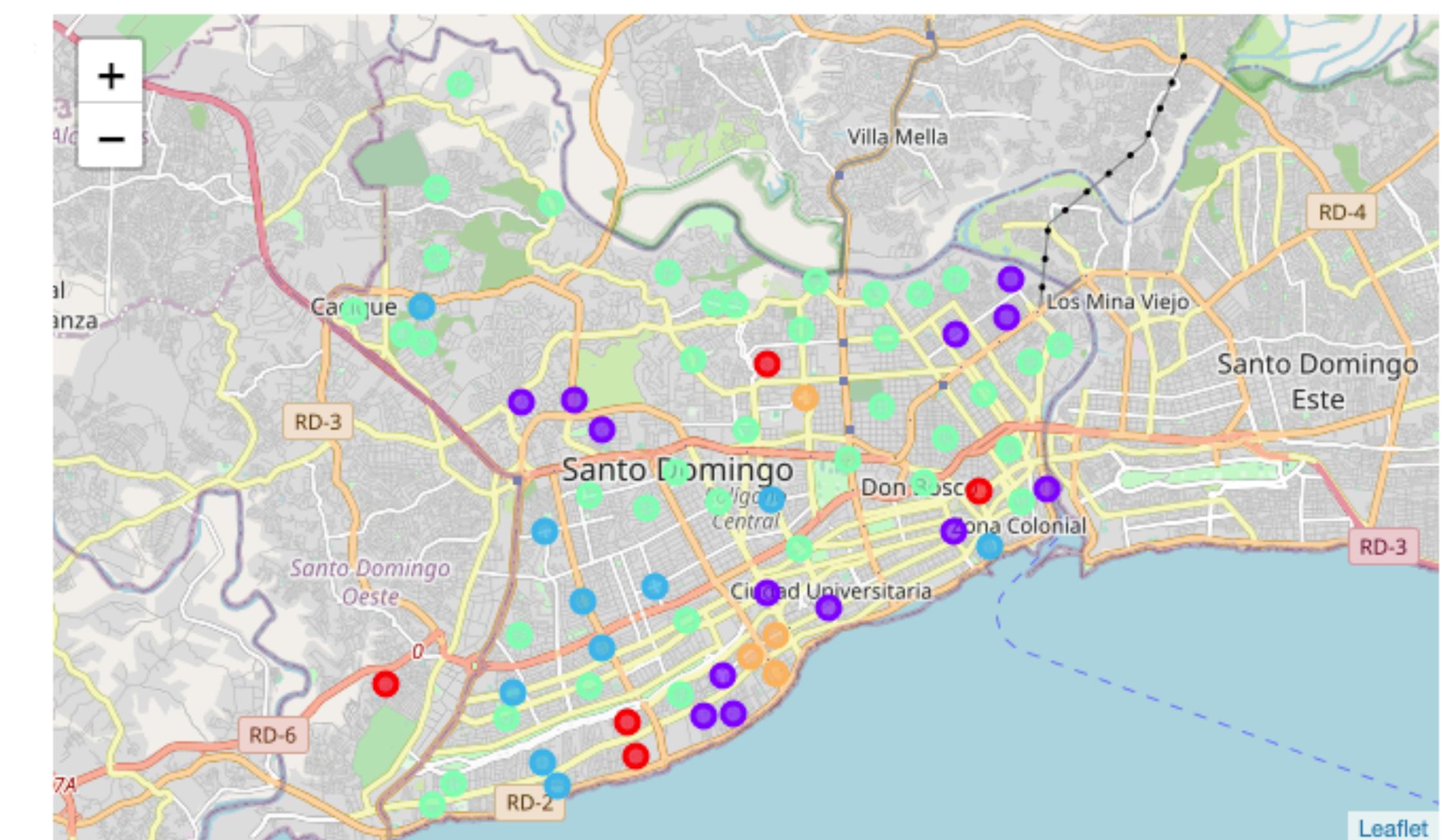
Categorized the neighborhoods into 5 clusters:

Cluster	# of Businesses
Cluster 0	5
Cluster 1	13
Cluster 2	10
Cluster 3	39
Cluster 4	4

As observations noted from the map and the K-Means Report, most of the fast food / food trucks businesses are concentrated in the Cluster 3, which is the north area of Santo Domingo, Distrito Nacional and a moderated number in Cluster 0 and Cluster 4.

Results

And plotted a Folium map with colors of each cluster:





Discussion

As much as Cluster 0 and Cluster 4 represents a great opportunity to open a new location as there is no intense competition due to high concentration of other fast food businesses.

Conclusion

Therefore, this project recommends the investor to capitalize on these findings to open a new location in Cluster 0 or Cluster 4.

Lastly, the investor is advised to avoid Cluster 3 which already have high concentrations of business alike and intense competition.