Neighborhood Segmentation and Clustering

Setting up a restaurant in Oslo

Introduction

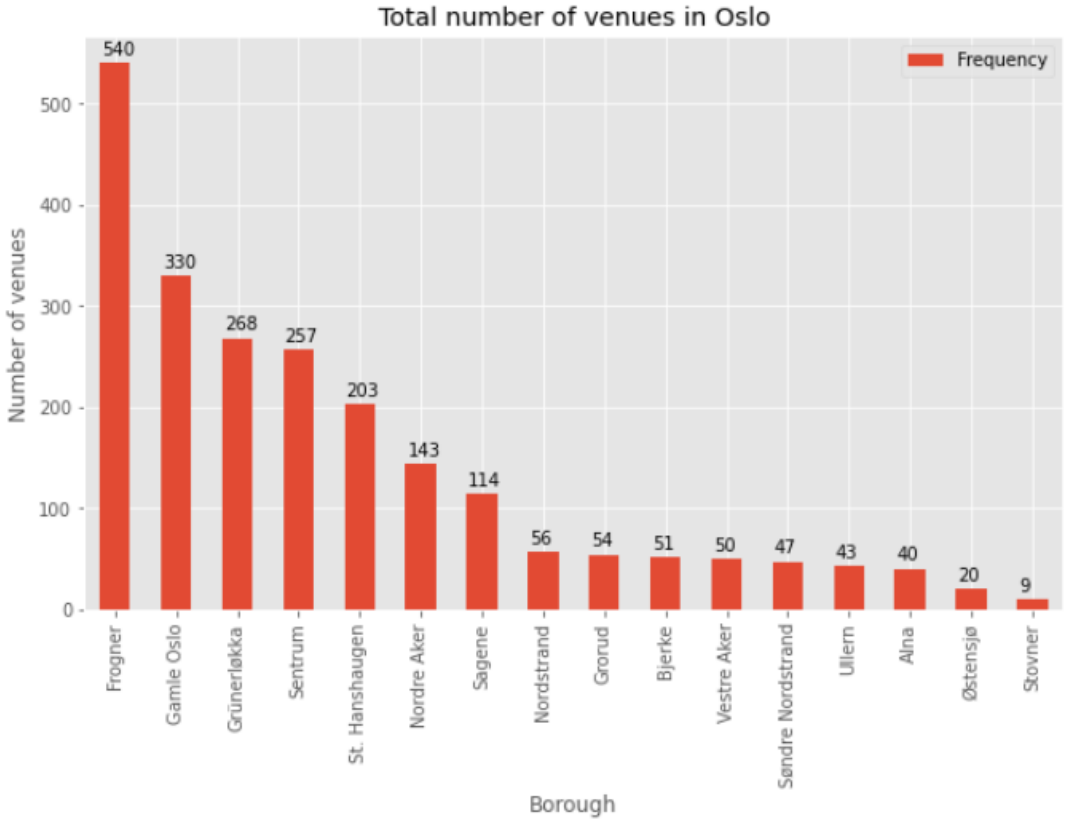
- Dining outside is an important part of peoples
- Restaurant owners should reflect upon their customers' needs
- Serious consideration and there is more to it than meets the eye
- Location of the restaurant is one of the most important decisions
- Determine its success or failure.
- Select the best locations in the city of Oslo to open a new restaurant
- Focus on geospatial analysis of the city of
- Machine learning techniques like clustering
- Recommend location for new restaurants

Data and Sources

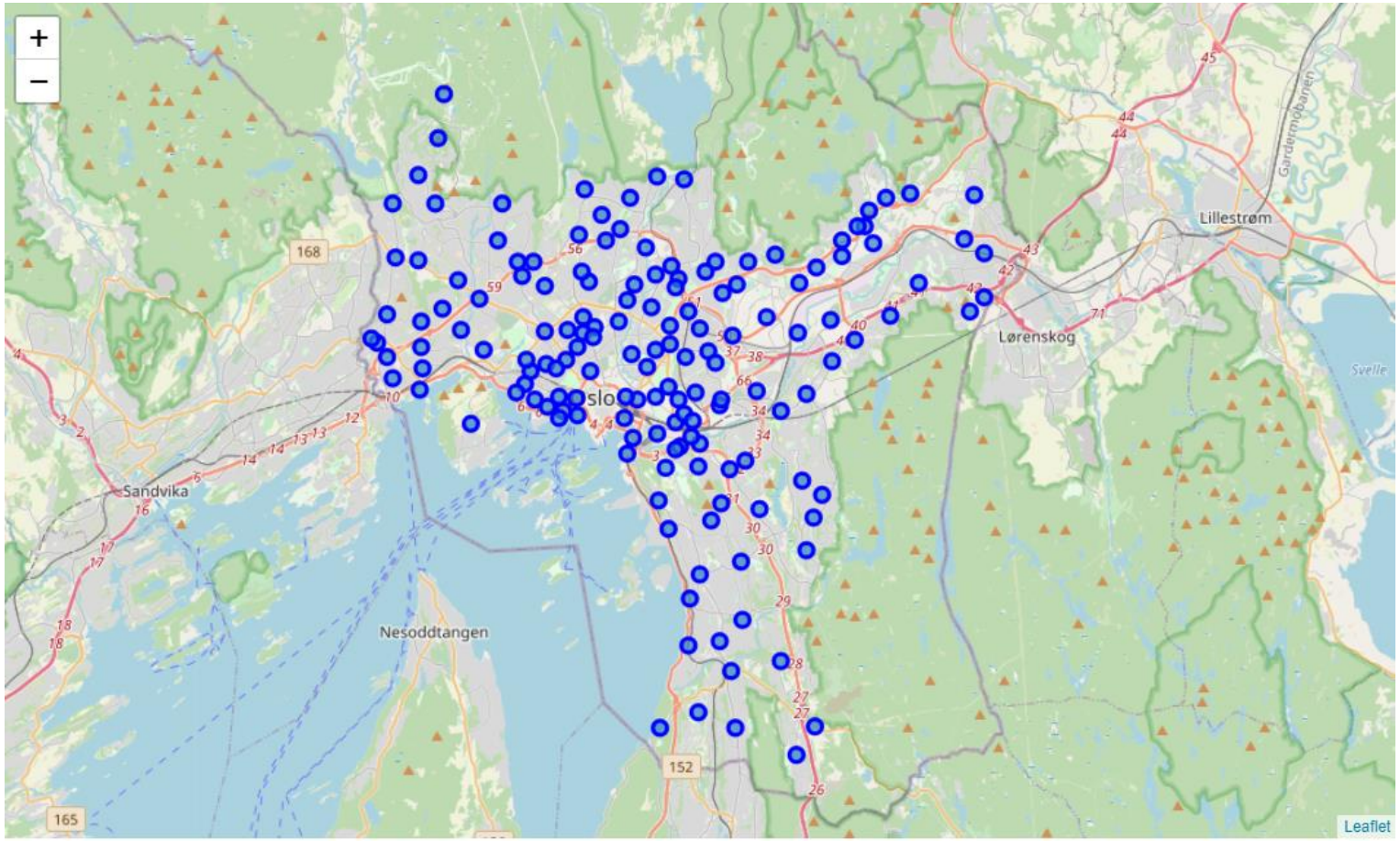
- Wikipedia – Create a list of all boroughs and neighborhoods in the city of Oslo
- Python Geopy – Retrieve latitude and longitude of all neighborhoods
- Foursquare API – Get venues of neighborhoods

Exploratory Data Analysis

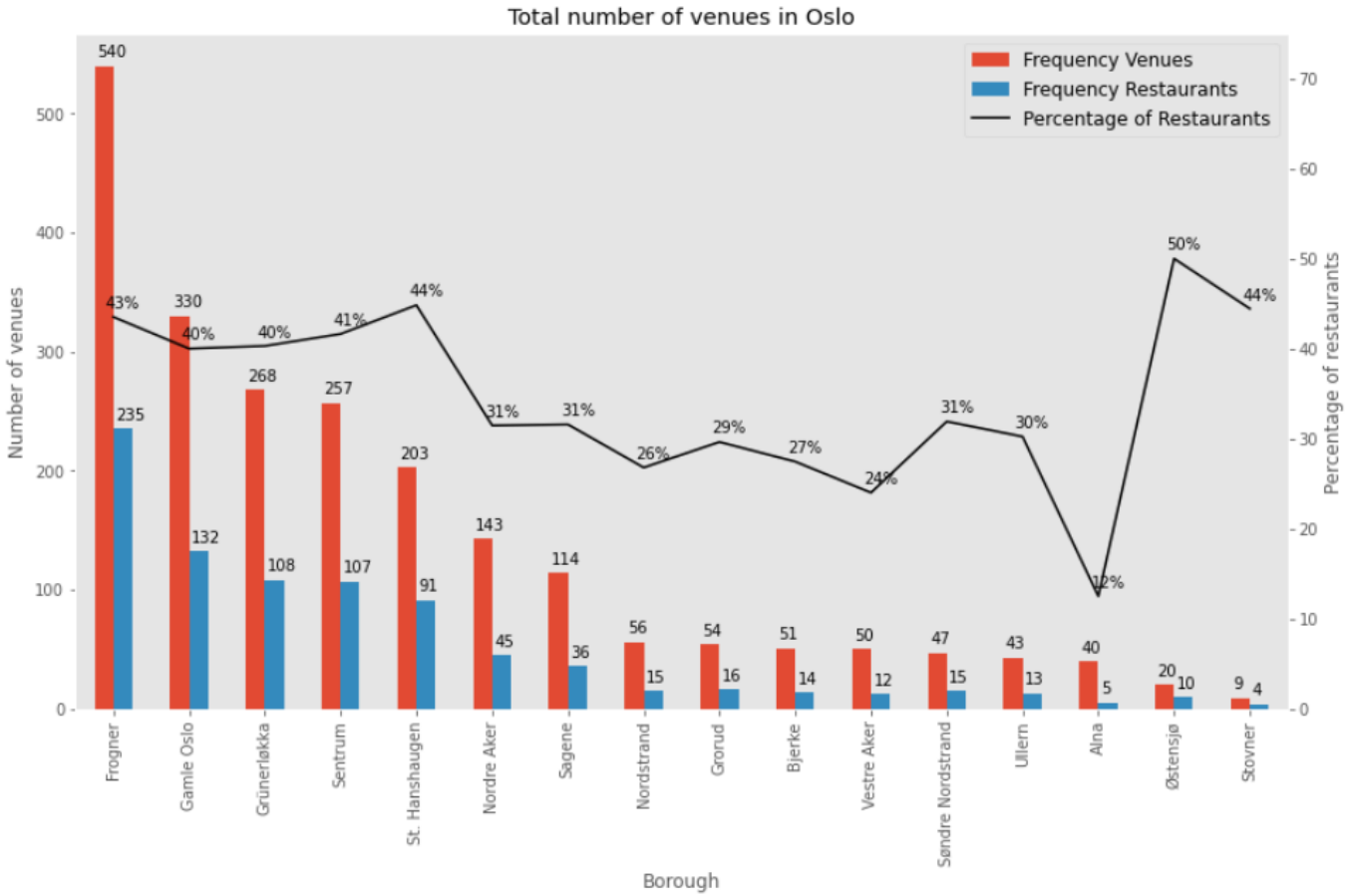
- 16 Boroughs
- 157 Neighborhoods
- 2401 venues
- 227 venue categories



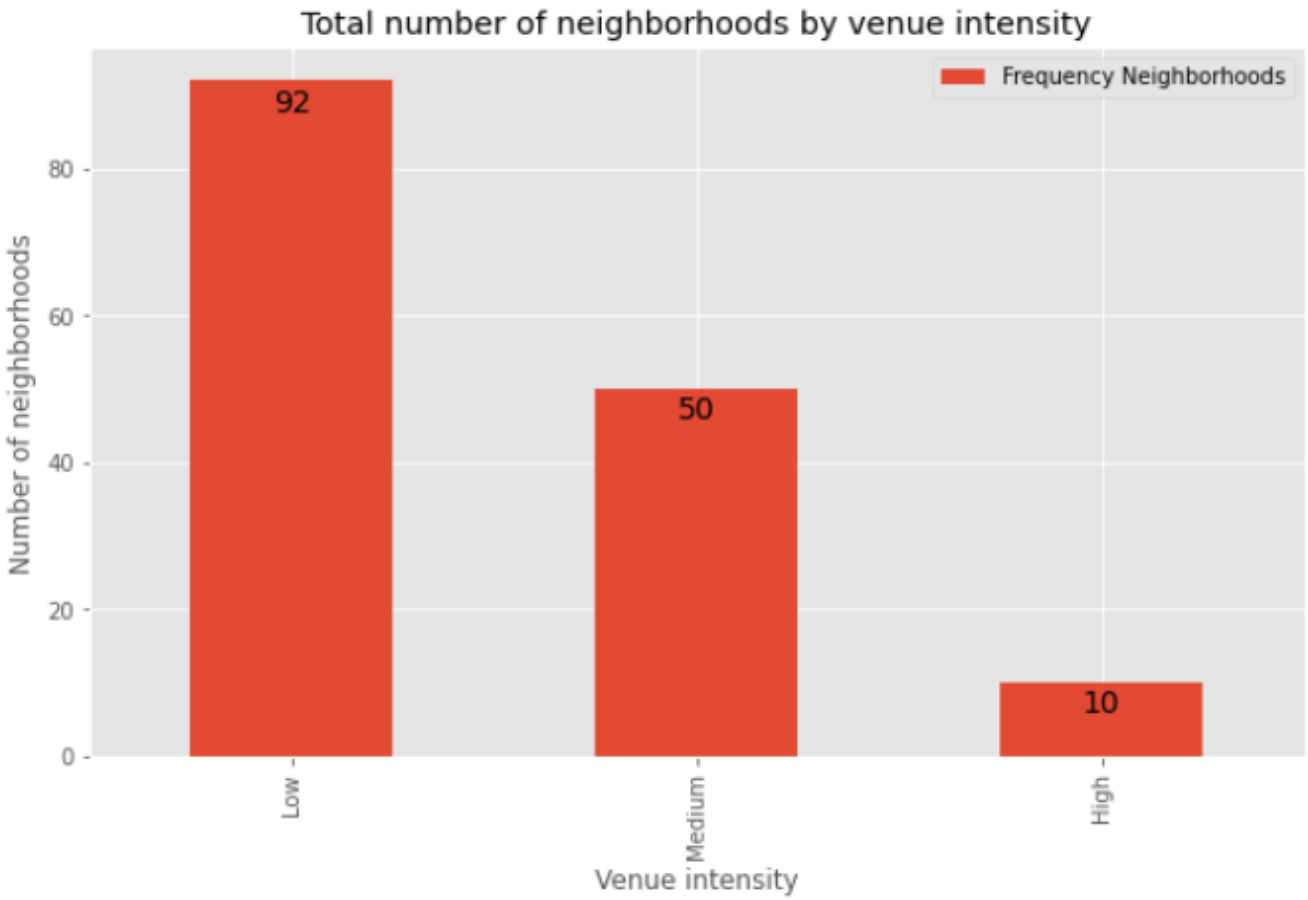
Map of Oslo


+
−
Oslo
Sandvika
Nesoddtangen
Lørenskog
Lillestrøm
Gardermobanen
Svelle
168
152
165
Leaflet

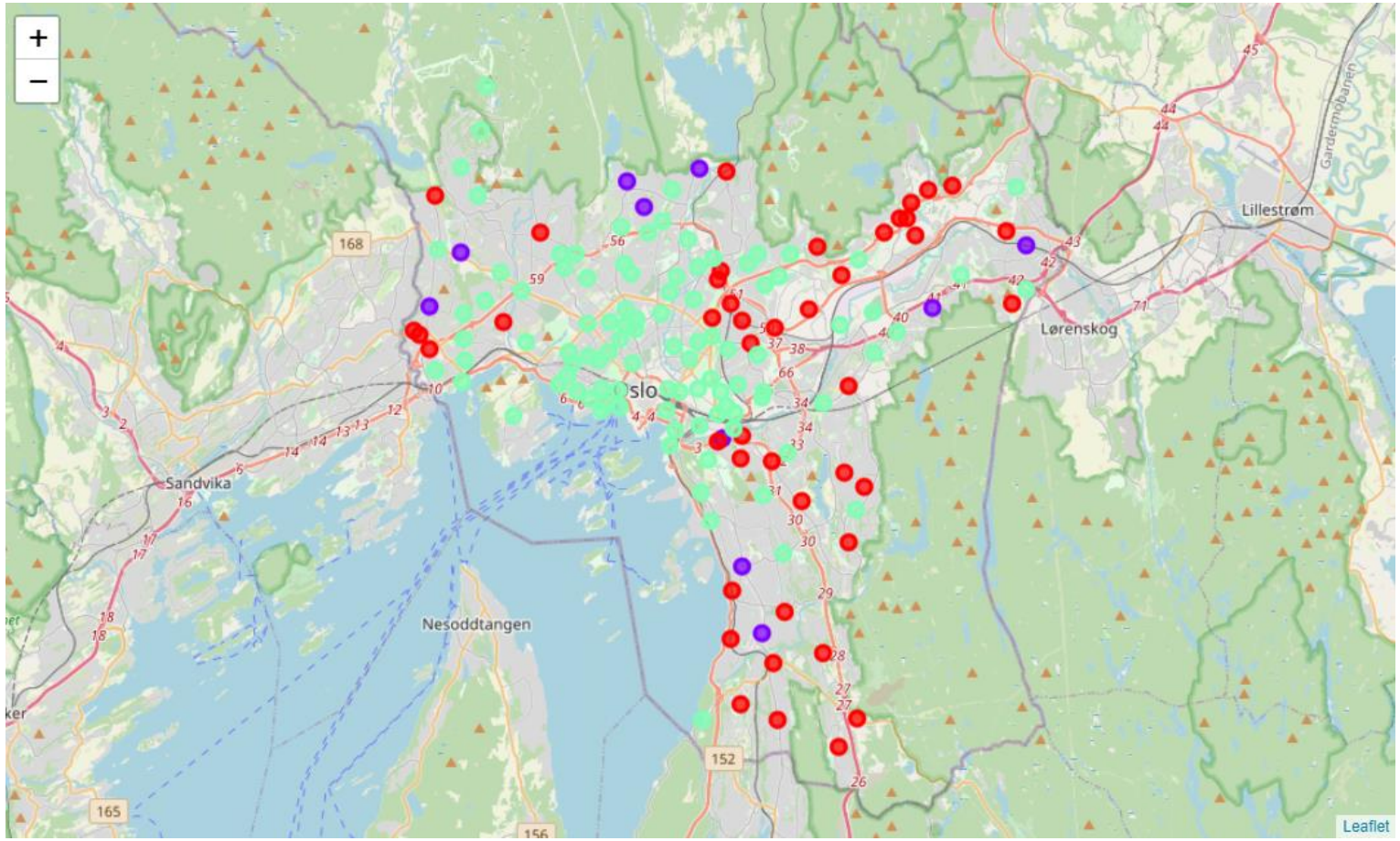
Venues vs Restaraunts



Venue intensity



Clustered Map of Oslo



Findings

- Oslo is a big city with 16 boroughs and more than 150 neighborhoods; k-means clustering algorithm with three clusters; 152 distinct locations
- In cluster 0, there exist multiple social venues. From the 213 venues in total 62 are restaurants. This means that that the restaurant penetration in that cluster defined as the share of restaurants is 29.11%.
- In cluster 1, there exist mainly grocery shops and zero restaurants.
- In cluster 2, there exist many accommodation and restaurant venues. From the 687 venues in that cluster, 258 are restaurants yielding a restaurant penetration equal to 37.55%.

Conclusion

- Starting a new restaurant business is no easy decision
- Requires serious consideration when it comes to location
- Best locations in the city of Oslo for opening a new restaurant.
- Geospatial analysis of the neighborhoods in Oslo
- Machine learning techniques, like unsupervised learning to cluster and segment the neighborhoods in Oslo
- Presence of three major clusters with different restaurant penetration rates