THE BATTLE OF THE NEIGHBORHOODS

Introduction/Business problem

■ Young and highly motivated business entrepreneurs are willing to help their city and open a new Pizza restaurant. There are many details and risks to be considered when opening a restaurant. The problem to decide on a most suitable city location for a new venture is in question.

■ For decision on a suitable place to be made, some of the factors need to be analysed:

■ - population of the neighborhood

■ - area of the neighborhood

■ - number of competitors in the neighborhood.

■ In this project, the most suitable location for a new Pizza restaurant will be analysed based on above mentioned criterias and insights for business owners will be provided based on conducted modeling of Vilnius neighborhood locations.
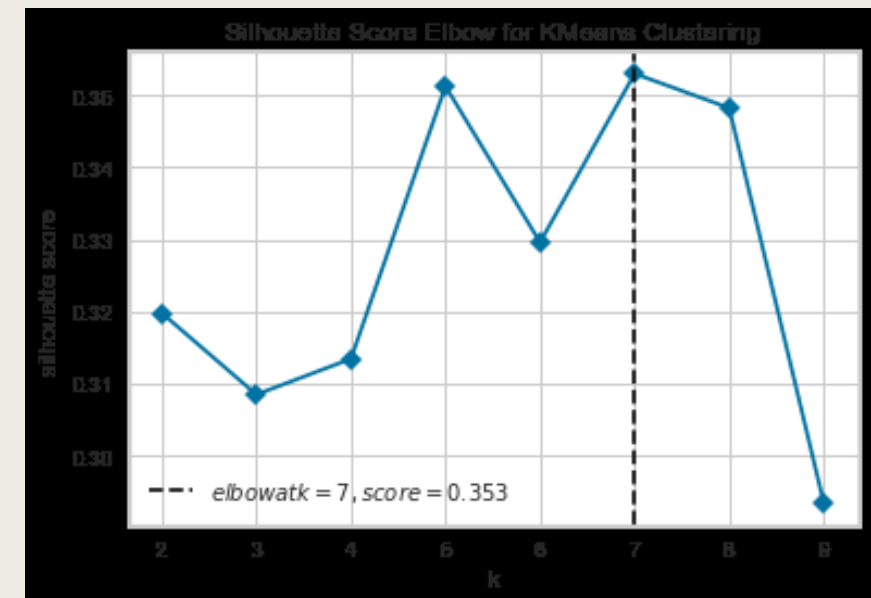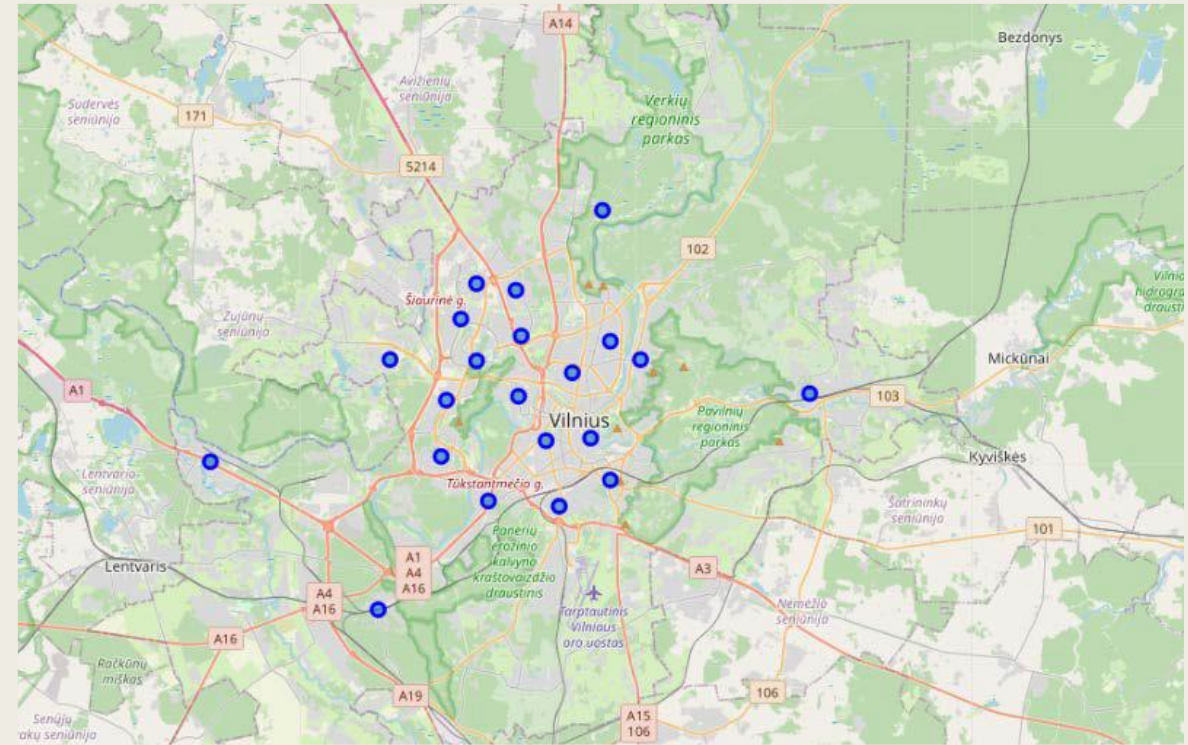
2. Data description

Data for the project was retrieved from from several public data sources. Data sources that are used for further data analysis of the project:

- "Neighborhoods of Vilnius". Source: https://en.wikipedia.org/wiki/Neighborhoods_of_Vilnius

    - List of neighborhoods of Vilnius, Lithuania

    - Area, km2 of Vilnius neighborhoods

    - Population of Vilnius neighborhoods

- Foursquare API:

    - Data of the venues that are located in Vilnius neighborhoods in defined radius

- Geolocator API

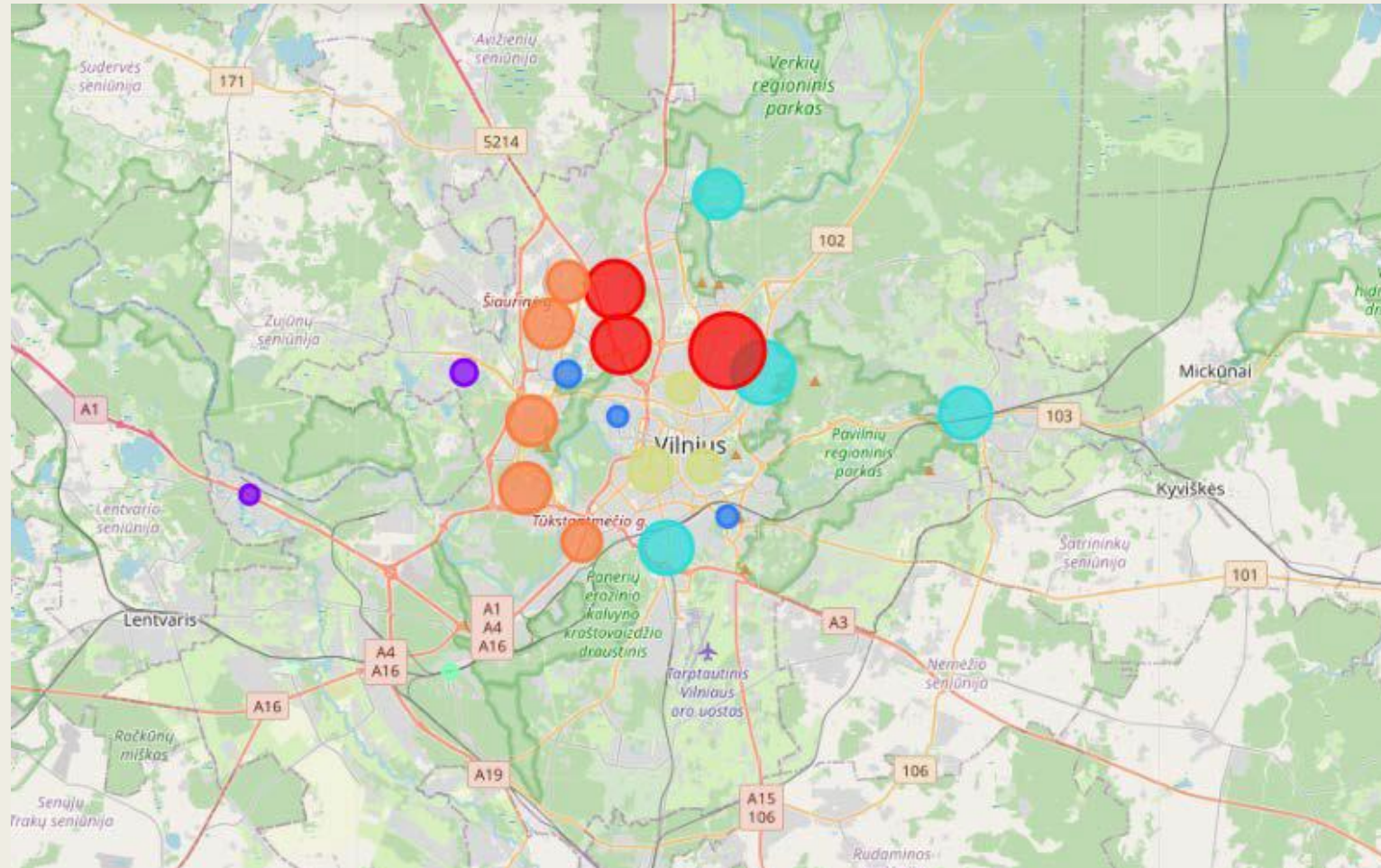   - Latitude and Longitude coordinates of analysed locations

3. Analysis

- 725 Total venues, 42 local Pizza venues retrieved

- 21 observation - Neighborhood

- Neighborhood Area and Population features included

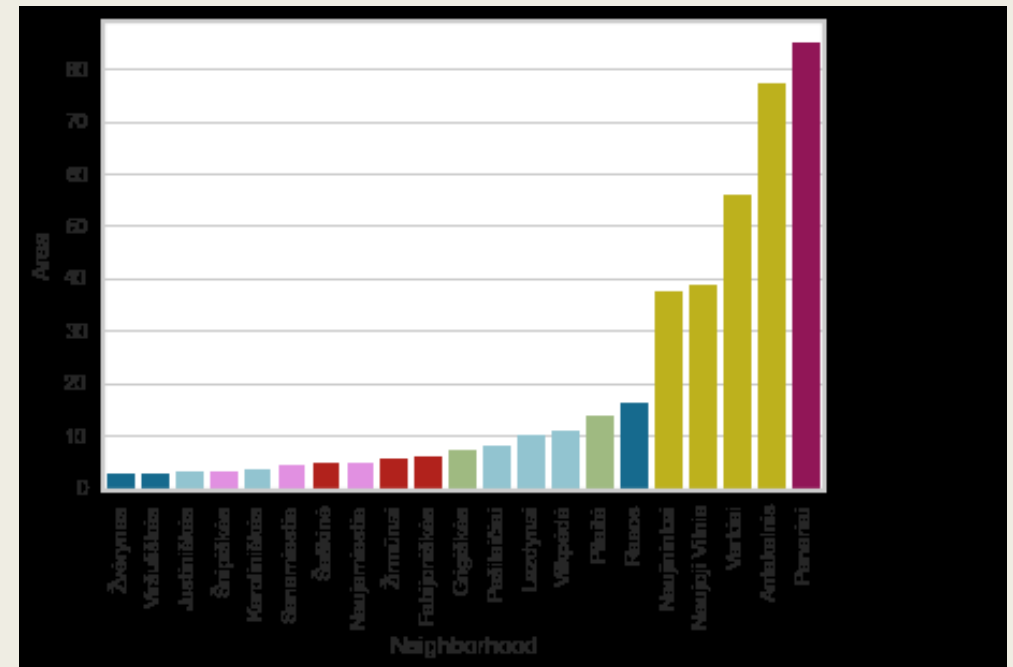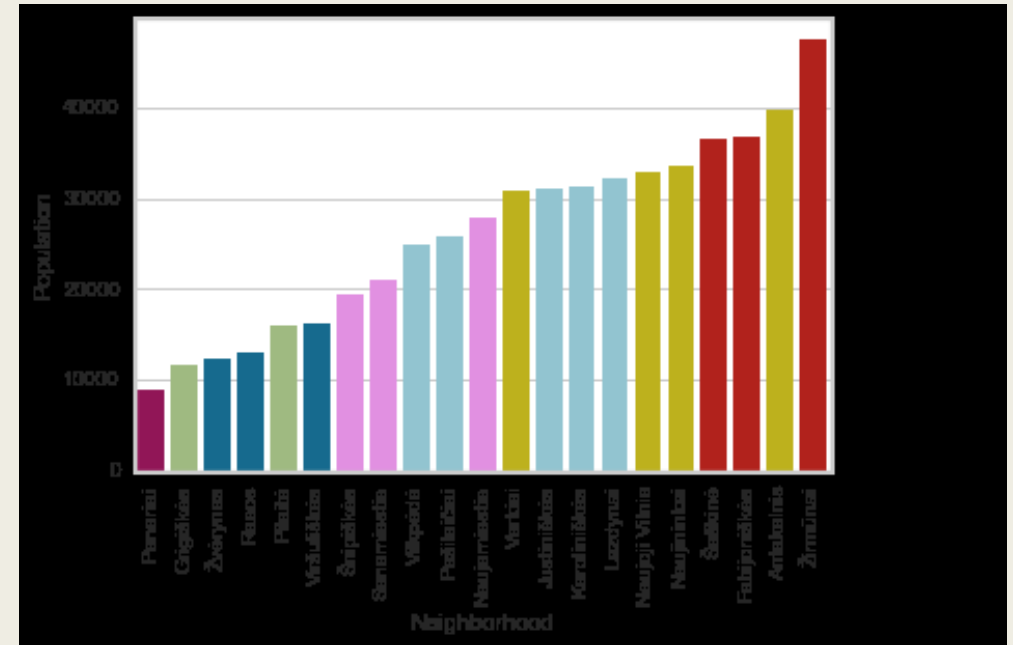- Clustering analysis – **k-Means model**

- **7 clusters**

Clustered Neighborhoods

Cluster names

- - Cluster 0 - Small area, highly populated area with many Pizzerias

- - Cluster 1 - Small area, small population area with no Pizzerias

- - Cluster 2 - Small area, small population area with many Pizzerias

- - Cluster 3 - Large area, highly populated area some Pizzerias

- - Cluster 4 - Very large area, small population area with no Pizzerias

- - Cluster 5 – Small area, medium population area with many Pizzerias

- - Cluster 6 - Small area, medium population area with some Pizzerias

4. Results and discussion

- 1 outlier cluster – Paneriai neighborhood

- Possible location for new restaurant – Cluster 5 neighborhoods:
  - *Small, avg. populated*
  - *Many competitors – people highly interested in Pizza venues*

- Potential neighborhoods – Karoliniškės, Vilkpėdė:
  - *no pizzerias*
  - *highly populated*