



Defining the best
place to install a
liquor store

Performing a data-driven analysis to find the best place to set up a business is very valuable to an entrepreneur

- Setting up a business is a great challenge that involves not only an investment but a life decision.
- The best location to carry it out was studied in the Las Condes commune in Santiago de Chile.
- Chileans have the custom of going out to eat and then continuing the party either at home or in discos, especially on Thursday, Friday and Saturday.
- Define the best place to help stakeholders make the best decision.

Data acquisition and cleaning

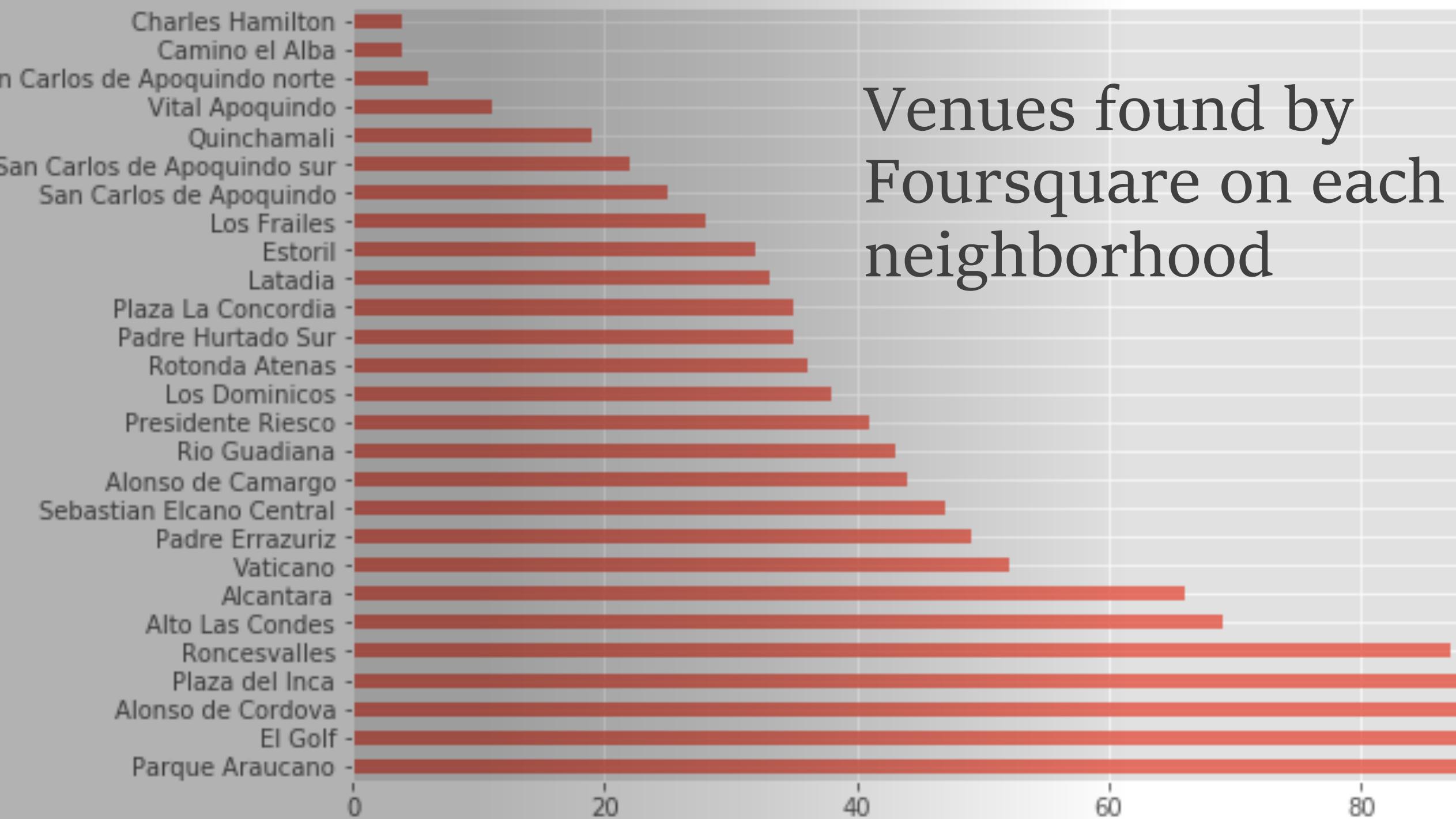
Factors that will influence our decision

- number of existing restaurants within a radius of 800 meters from the predefined center of the neighborhood (any type of restaurant)
- number of liquor points of sale (bars, supermarkets, liquor stores, among others) in the same distance range

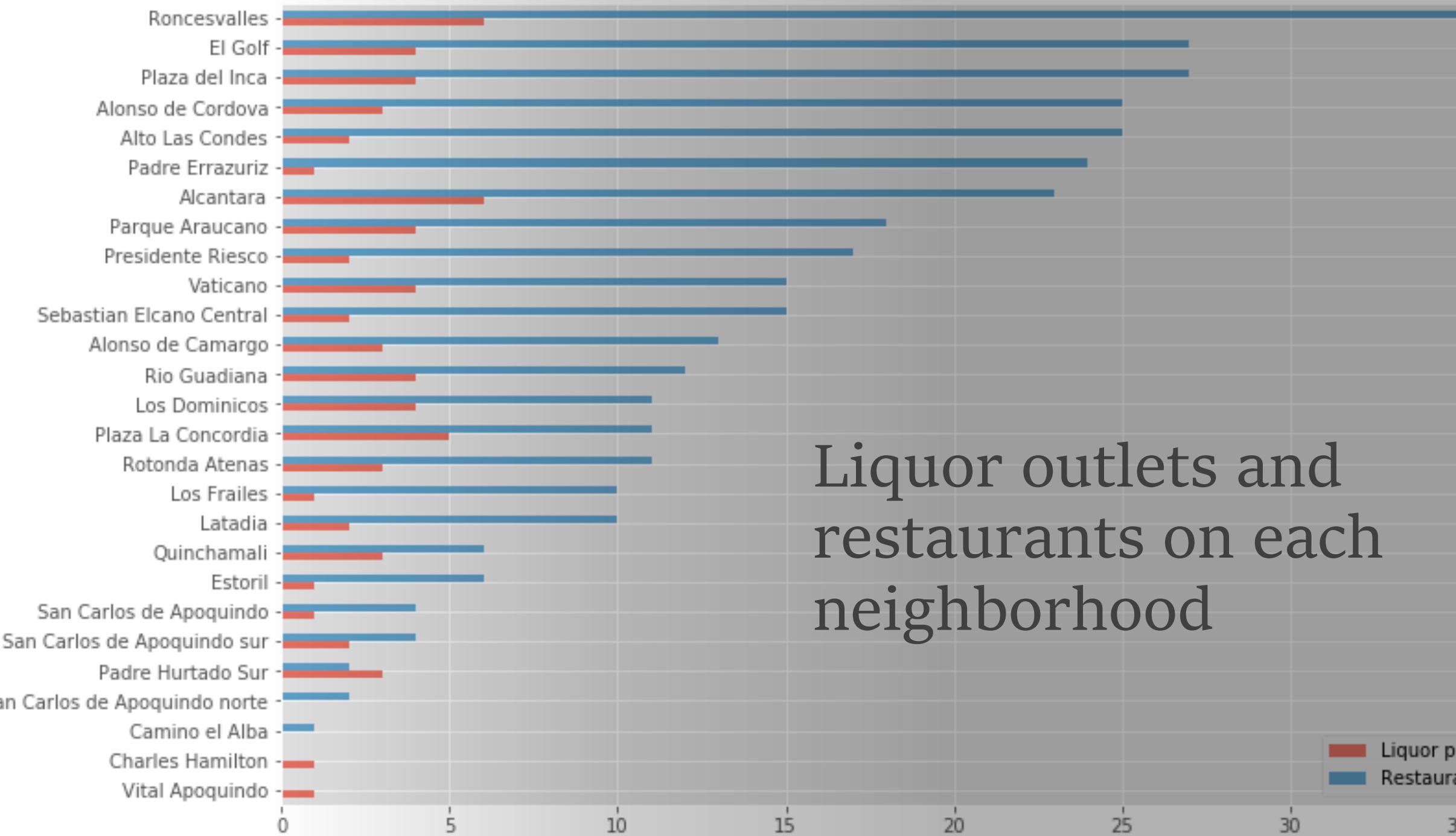
Data sources that will be needed to extract/generate the required information:

- The center of each zone will be determined based on the sectorization proposed by the Las Condes mayor's office and the coordinates were obtained through the page <https://www.mapcoordinates.net/es>
- number of restaurants and their type and location in every neighborhood will be obtained using **Foursquare API**
- The number of bars, alcohol outlets and their location in each neighborhood will be obtained using **Foursquare API**

Venues found by Foursquare on each neighborhood

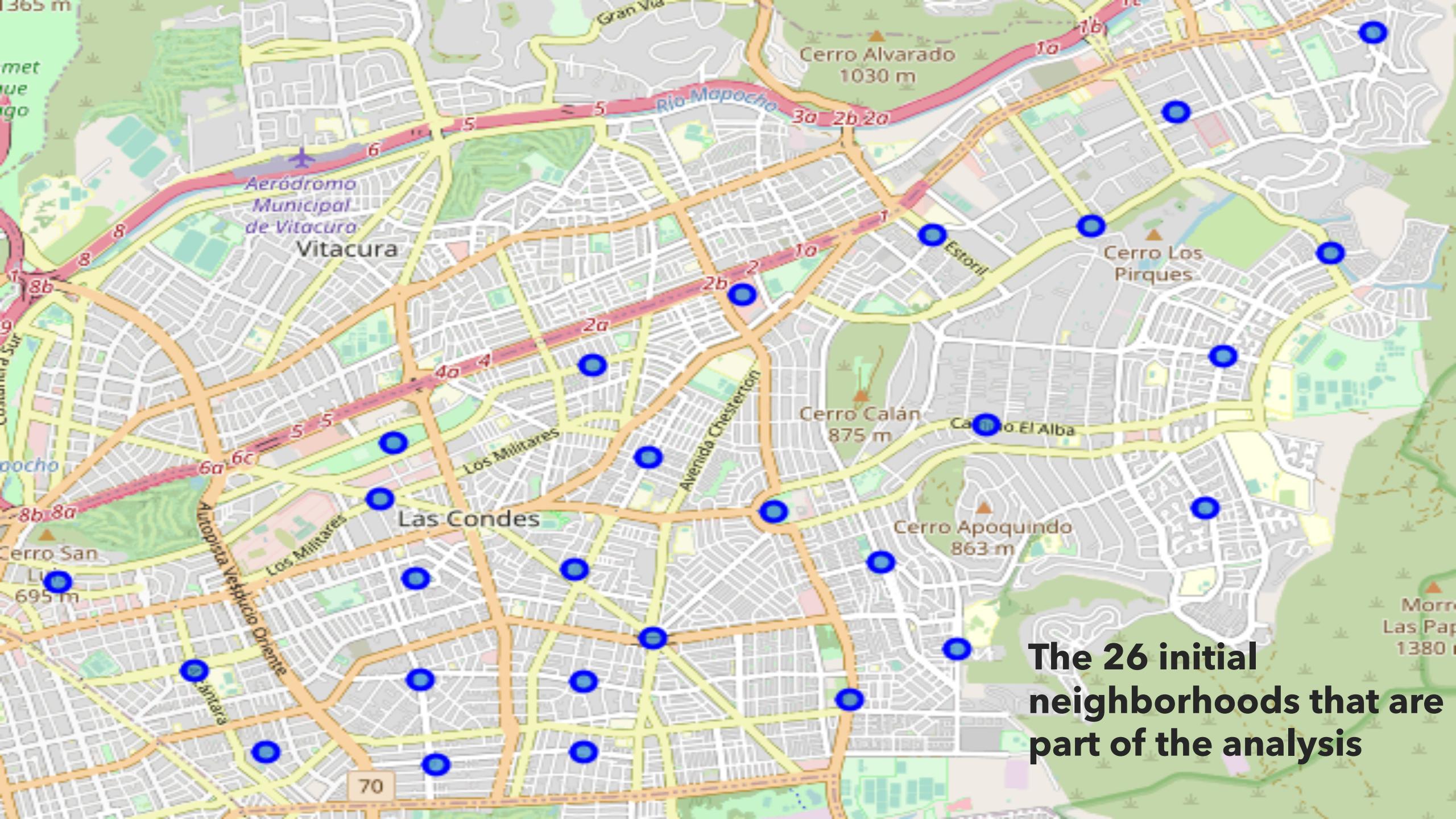


Neighborhood



Liquor outlets and
restaurants on each
neighborhood

Liquor outlets
Restaurants



The 26 initial
neighborhoods that are
part of the analysis

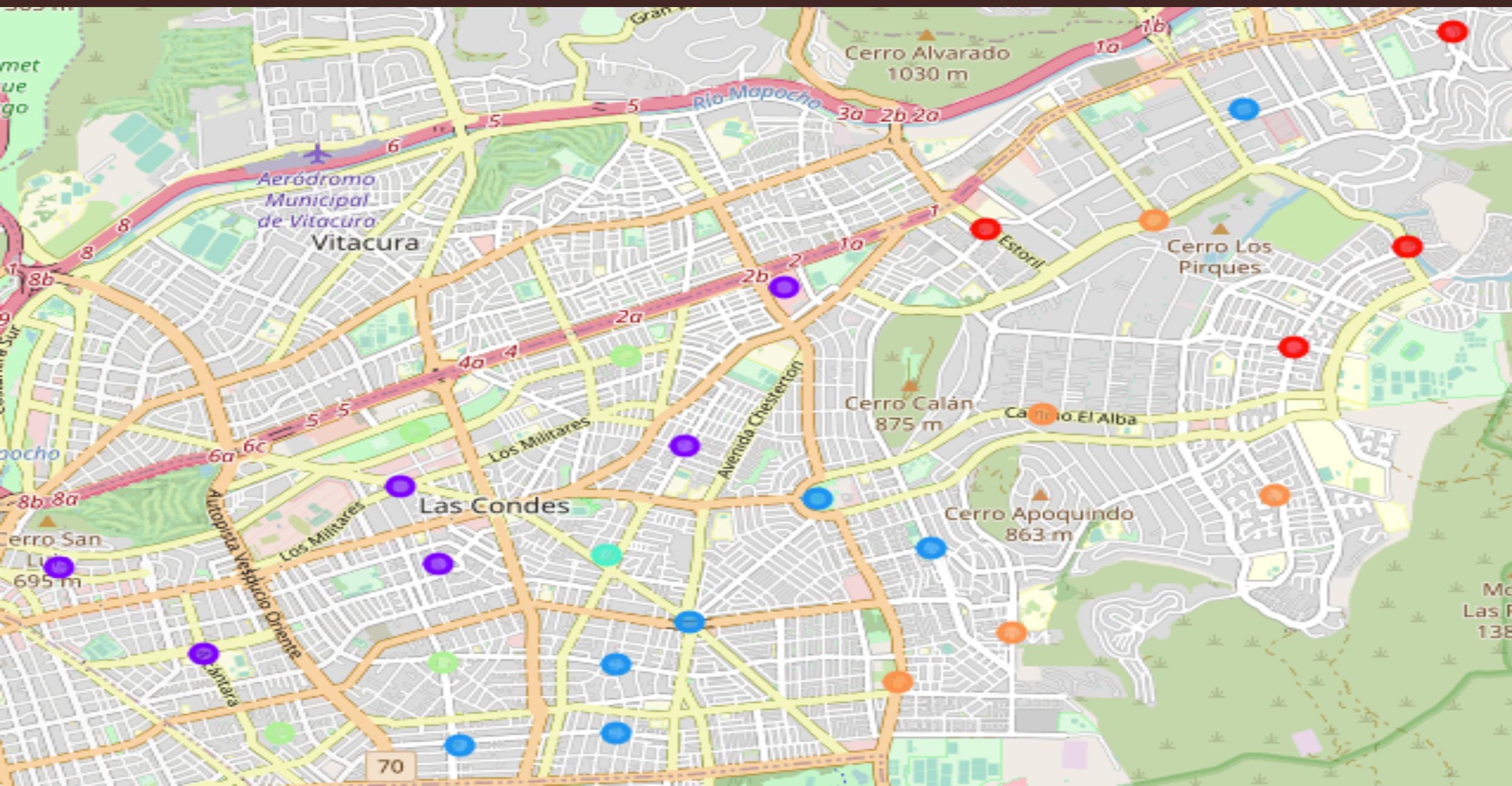
Clustering

K-means algorithm

It was iterated over different values of k

$k = 6$ proved to be the most appropriate number

Result of clustering



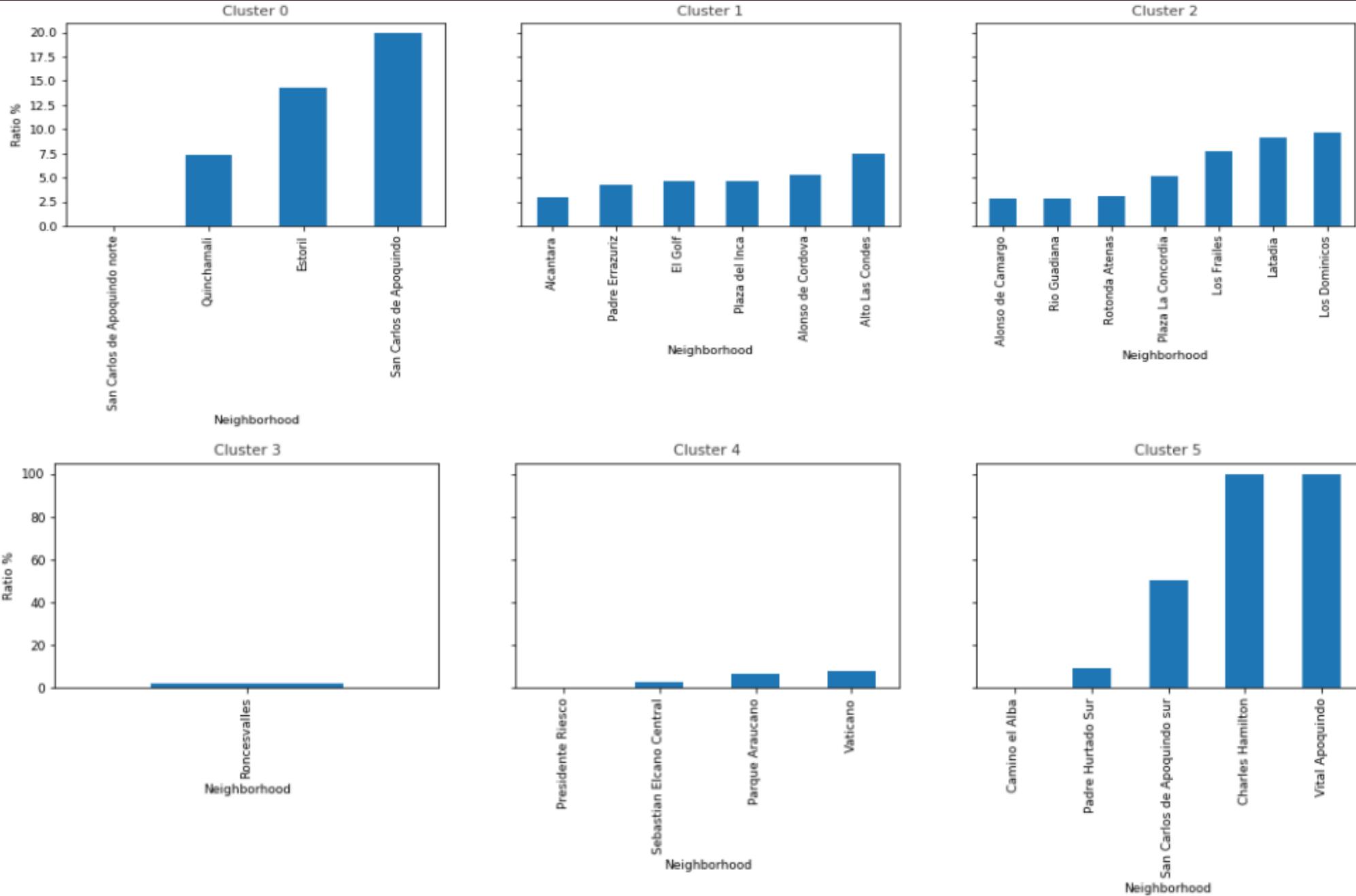
New indicator: percentage ratio

$$R\% = \frac{N_{liquor}}{N_{liquor} + N_{restaurants}}$$

- $R\%$: Percentage Ratio
- N_{liquor} : number of nearby liquor stores, bars, supermarkets or alcohol outlets
- $N_{restaurants}$: number of nearby restaurants

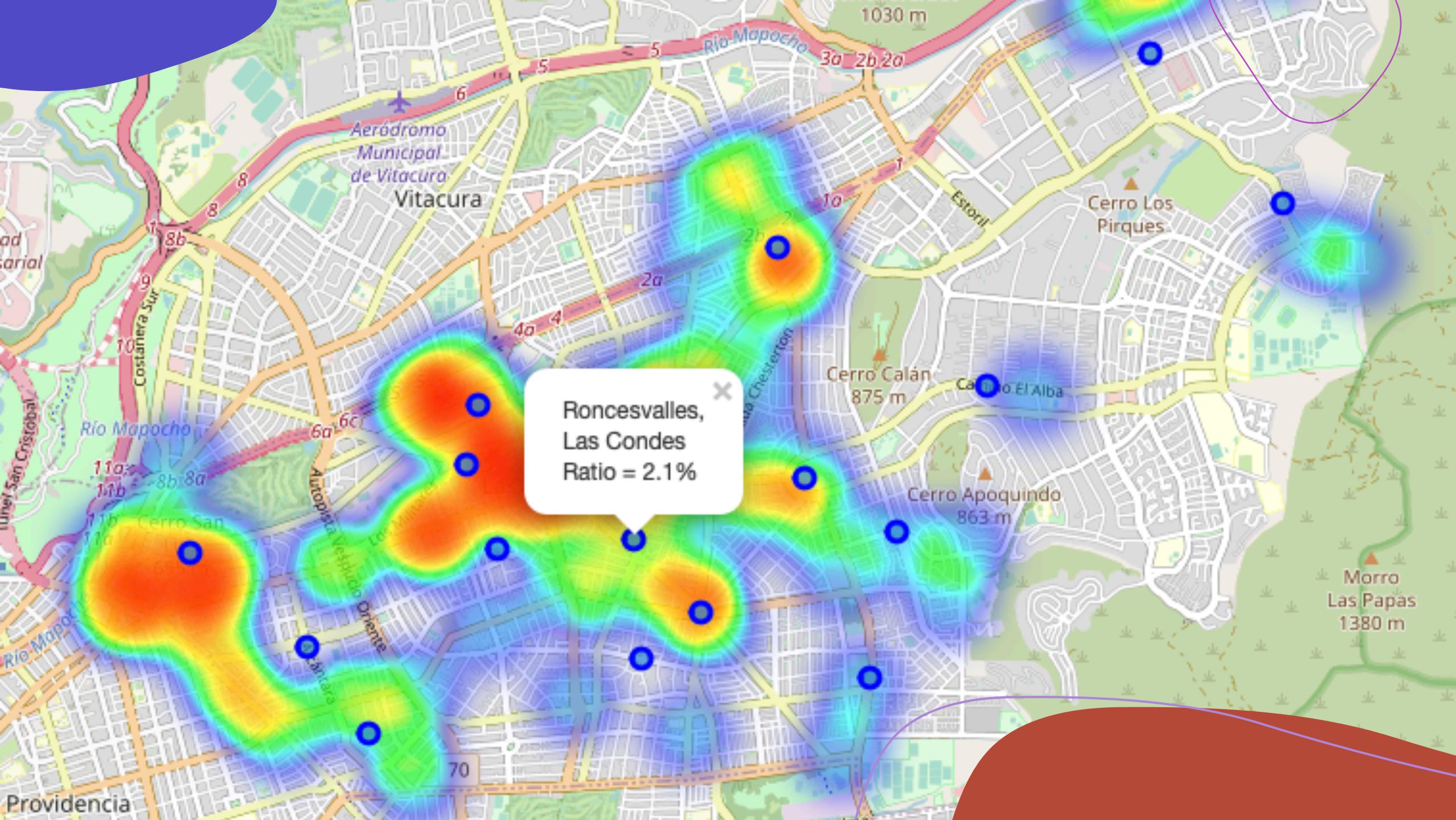
Percentage ratio of neighborhoods for each cluster

- Low ratios are preferred to encourage consumption by customers leaving restaurants
- Clusters 1, 3 and 4 are best suited for in-depth analysis



Results

- Neighborhoods were filtered keeping only those with a ratio less than or equal to 10%
- Using a joint heat map to define better neighborhoods
- Trade-off between high number of people and high competition for clients
- The best neighborhoods are those that have a ratio lower than 10% and fall on green areas of the heat map
- In addition, they are located in the vicinity of the main axis of the commune, Apoquindo avenue, and line 1 of the metro



Selected neighborhoods

Neighborhood	Cluster	Ratio
Alcántara	1	3.0 %
Vaticano	4	7.6 %
Plaza del Inca	1	4.6 %
Roncesvalles	3	2.1 %
Río Guadiana	2	9.0 %

Future directions of analysis

- Accuracy of the models and clusterization has room for improvement.
- Capture more neighborhood attributes such as buildings, demographic and socioeconomic characteristics, distances, accessibility, land use, etc.