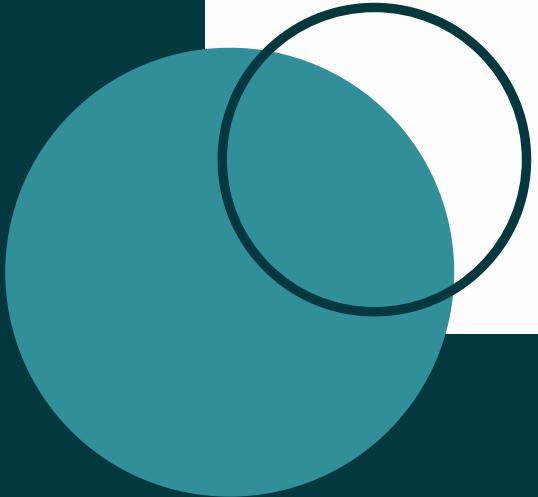
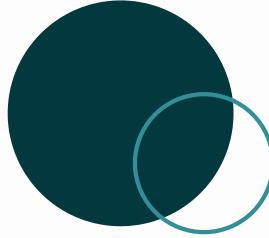


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**CAPSTONE PROJECT FOR APPLIED DATA  
SCIENCE SPECIALIZATION**

**Best location for a  
new restaurant in  
Bogotá, Colombia**





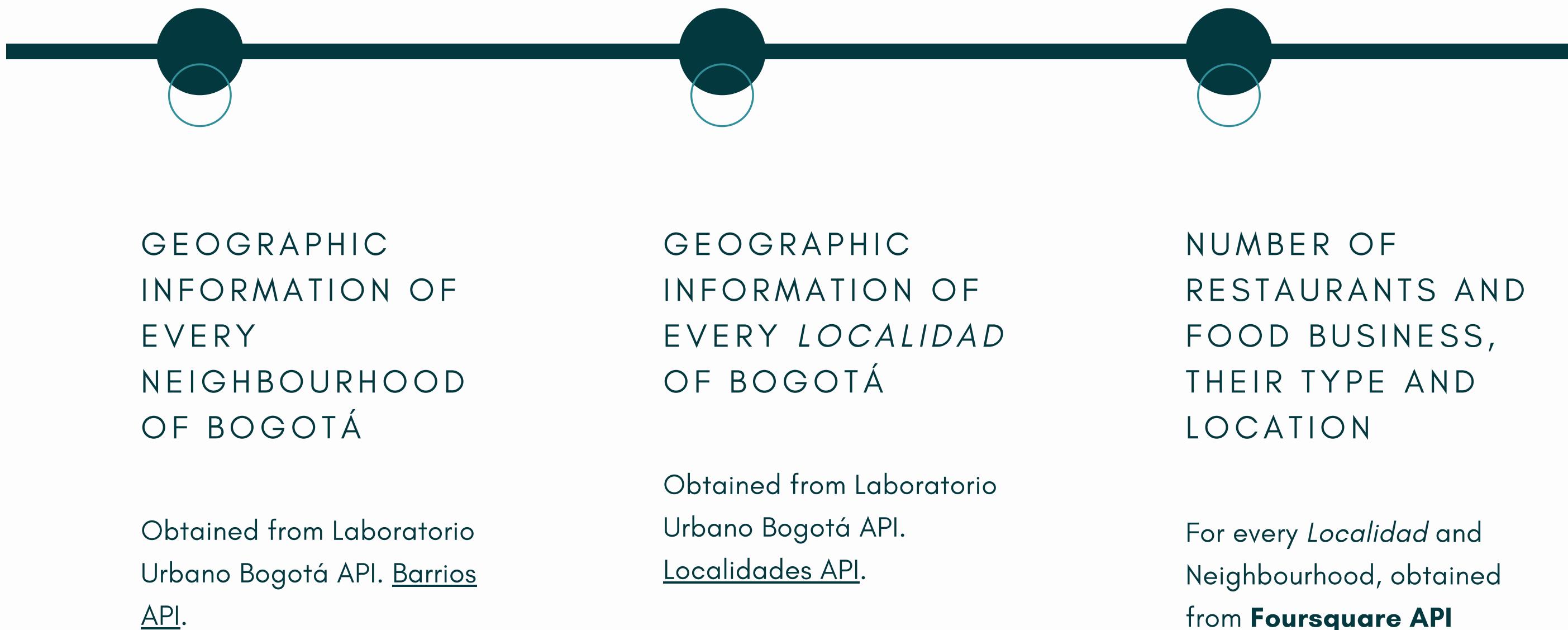
# **FINDING THE OPTIMAL LOCATION FOR A NEW RESTAURANT IN BOGOTÁ, COLOMBIA.**

We will provide information so that the most promising neighborhoods and the best possible location can be chosen by the investor interested in opening a restaurant in Bogotá

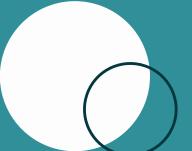
Identifying those city zones where the restaurant and food service industry are already located and what type of restaurants or food business are running

Identifying locations that have not plenty of restaurants already on service

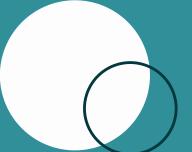
# GETTING THE DATA



# Cleaning and wrangling the data



from the data sets, keeping only data that include the neighbourhood name, *localidad* name and their geographic information



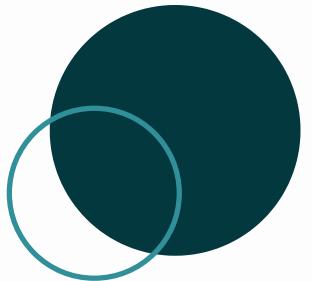
removing any null value from the data set, since we need the corresponding *localidad* and the location for every neighbourhood.



from the Foursquare data set, identifying those venues whose categories are related to restaurants and food businesses, select only the venues categories of interest for our analysis

# METHODOLOGY

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In order to deliver information that helps us finding the optimal location for a new restaurant in Bogotá, we are going to:

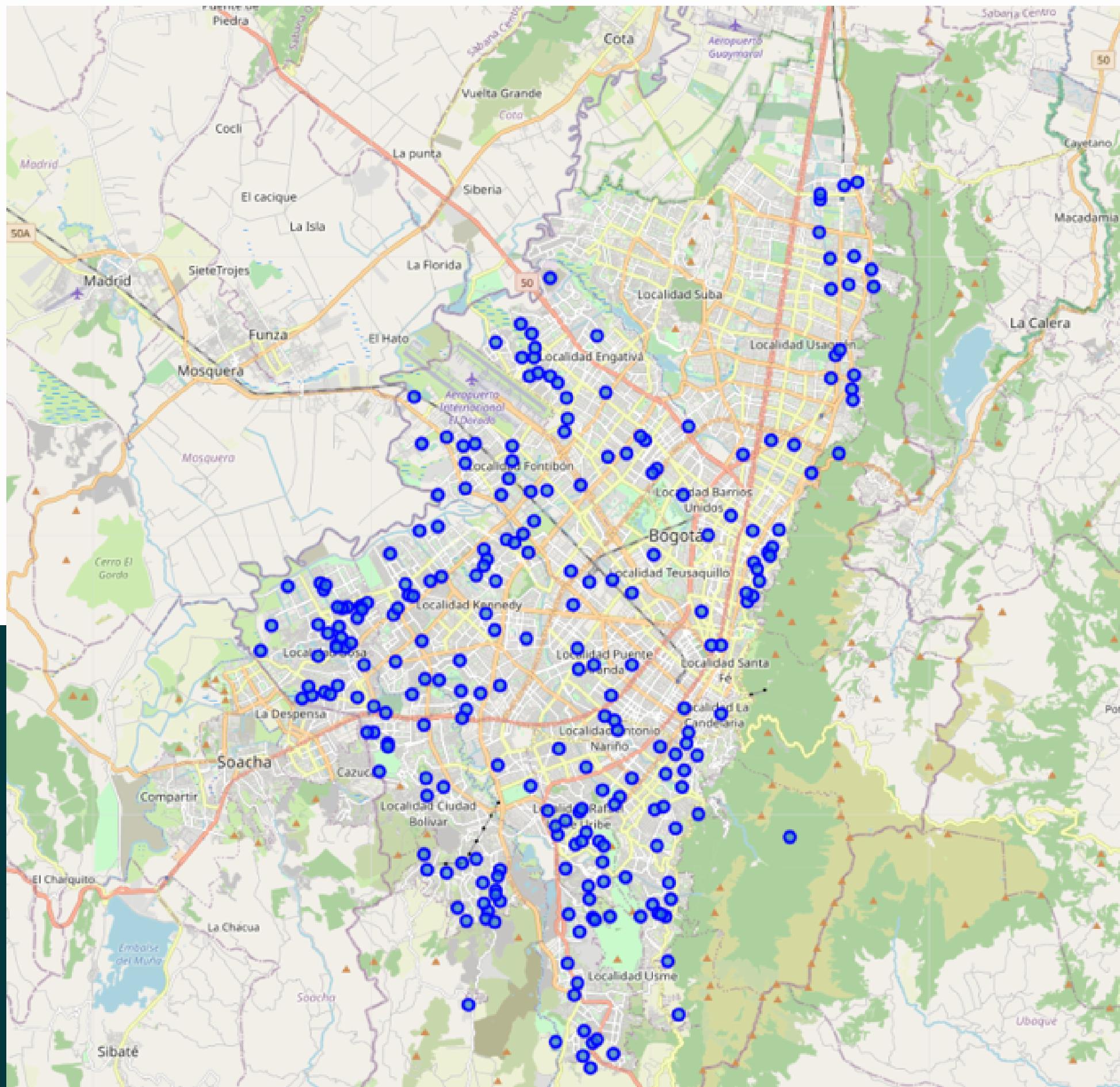
Explore and arrange the data to identify the Neighbourhoods with the highest and lowest number of existing restaurants

Explore and arrange the data to identify the number of existing restaurants in every Localidad.

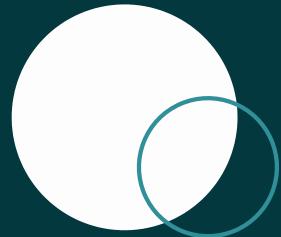
Explore and arrange the data to identify the number of existing restaurants by type/category

Segmentate the neighbourhood by type/category of restaurant or food business using k-means method

# All the neighbourhoods incluided in the analisis

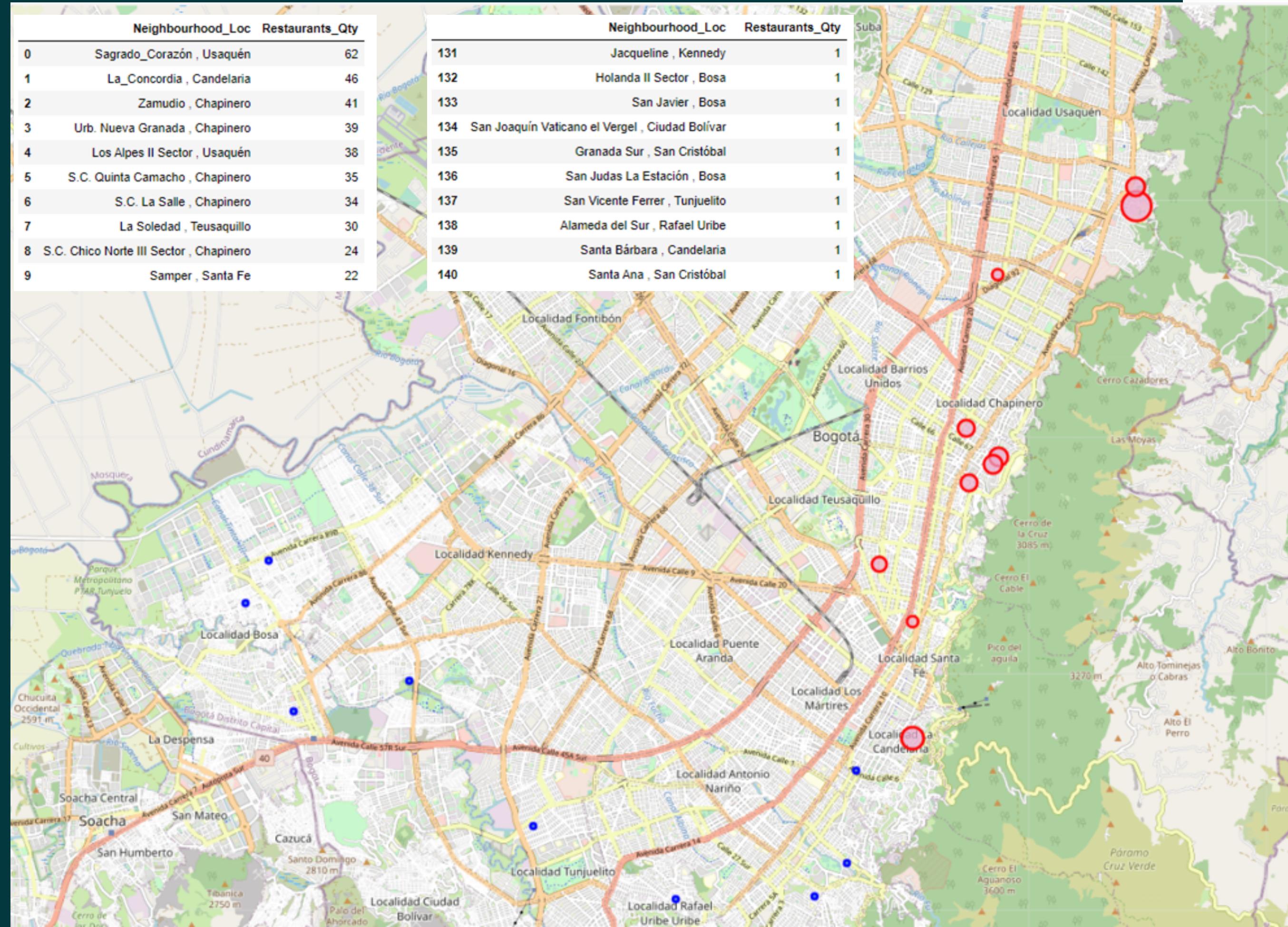


# 1. Amount of restaurants and food businesses by Neighbourhood in Bogotá

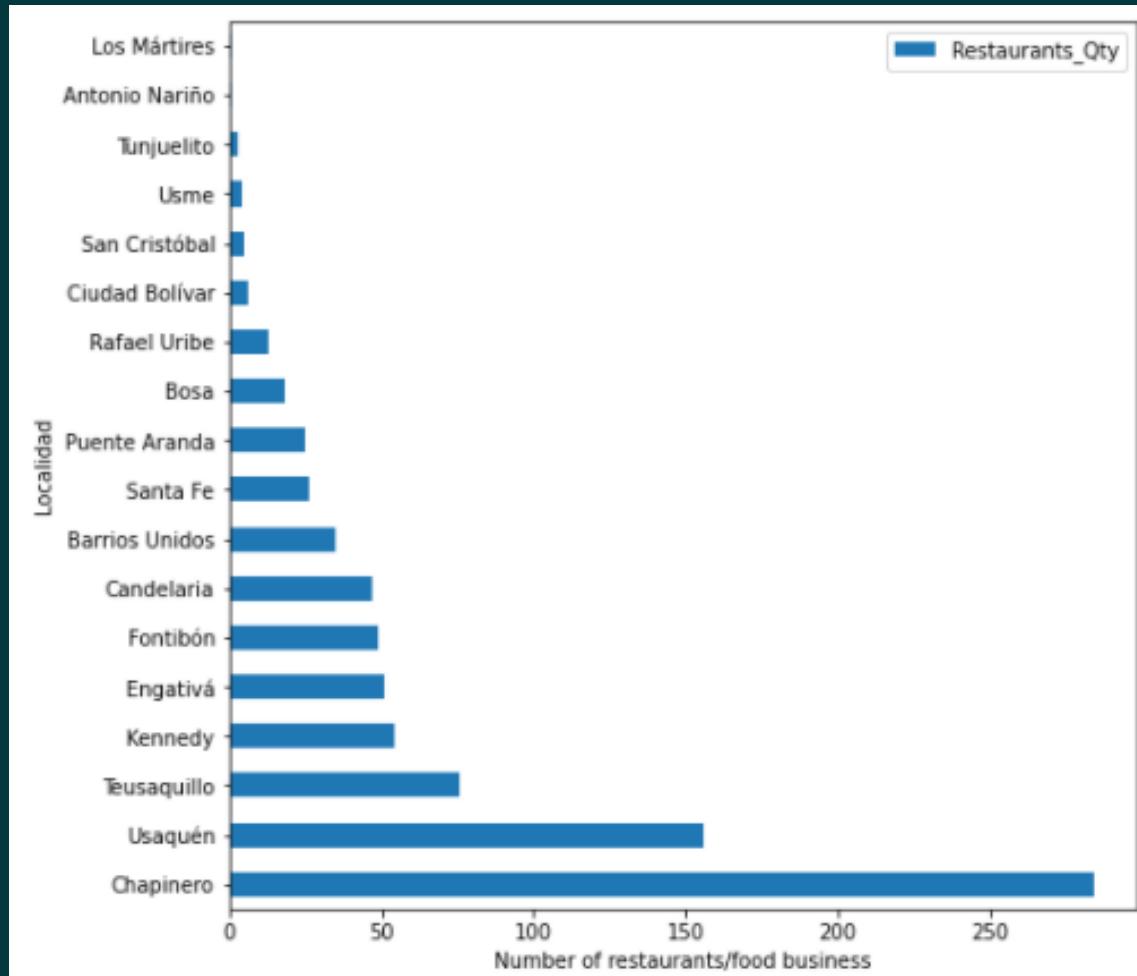
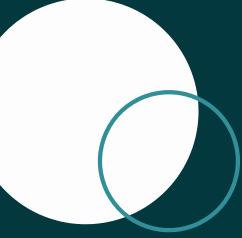


The map shows:

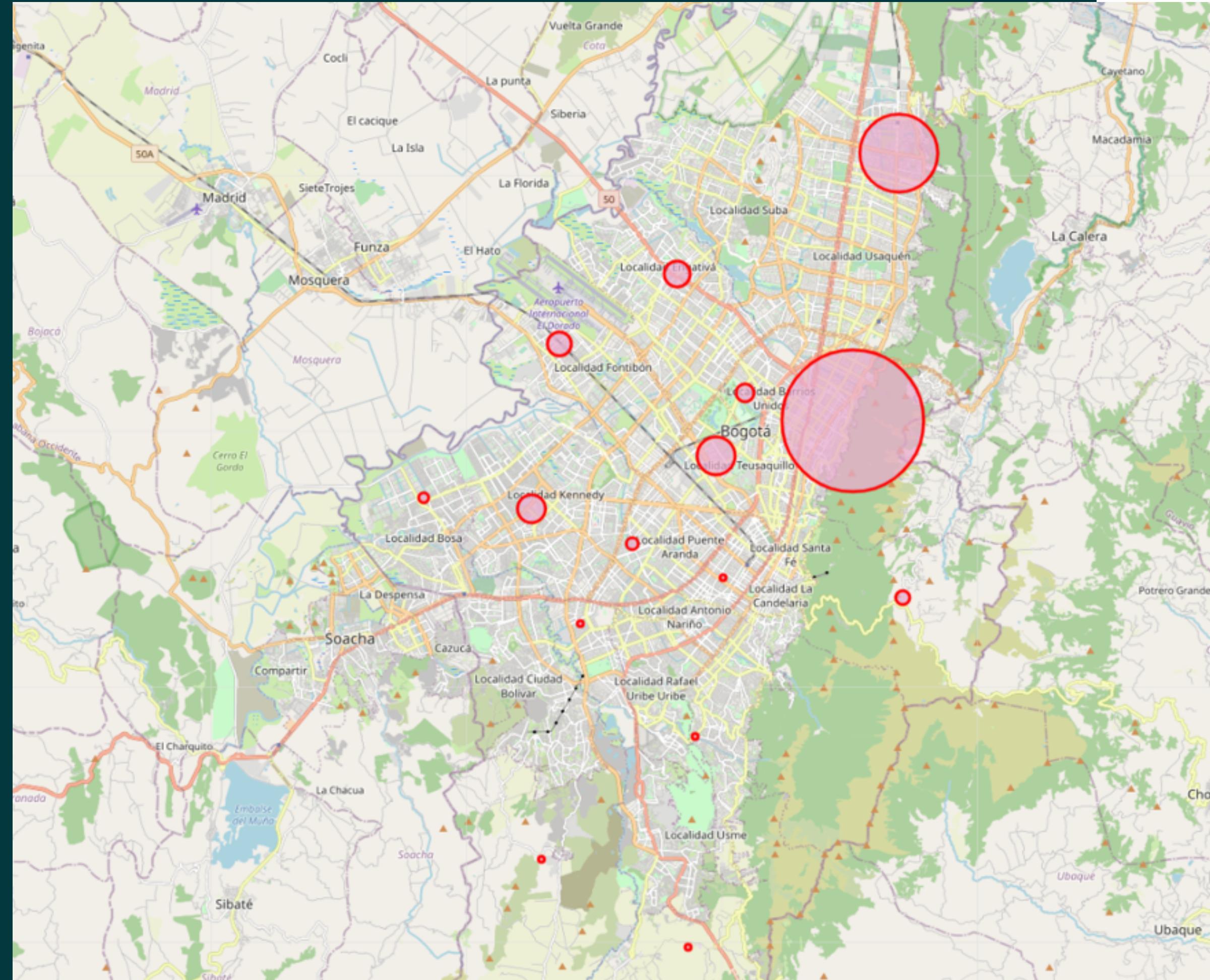
- the location of the neighbourhoods with the higher number of restaurants/food businesses (**red circles**). Here, the size of the circles is proportional to the amount of restaurants/food businesses, **the bigger the circle, the higher the number of restaurants**.
- the location of the neighbourhoods with the lower number of restaurants/food businesses (**blue circles**).



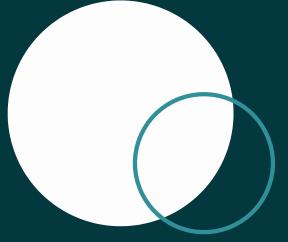
## 2. Amount of restaurants and food businesses by Localidad in Bogotá



On the map we can see the geographical location of the *Localidades*. Here, the size of the circles is proportional to the amount of restaurants/food businesses, the bigger the circle, the higher the number of restaurants.

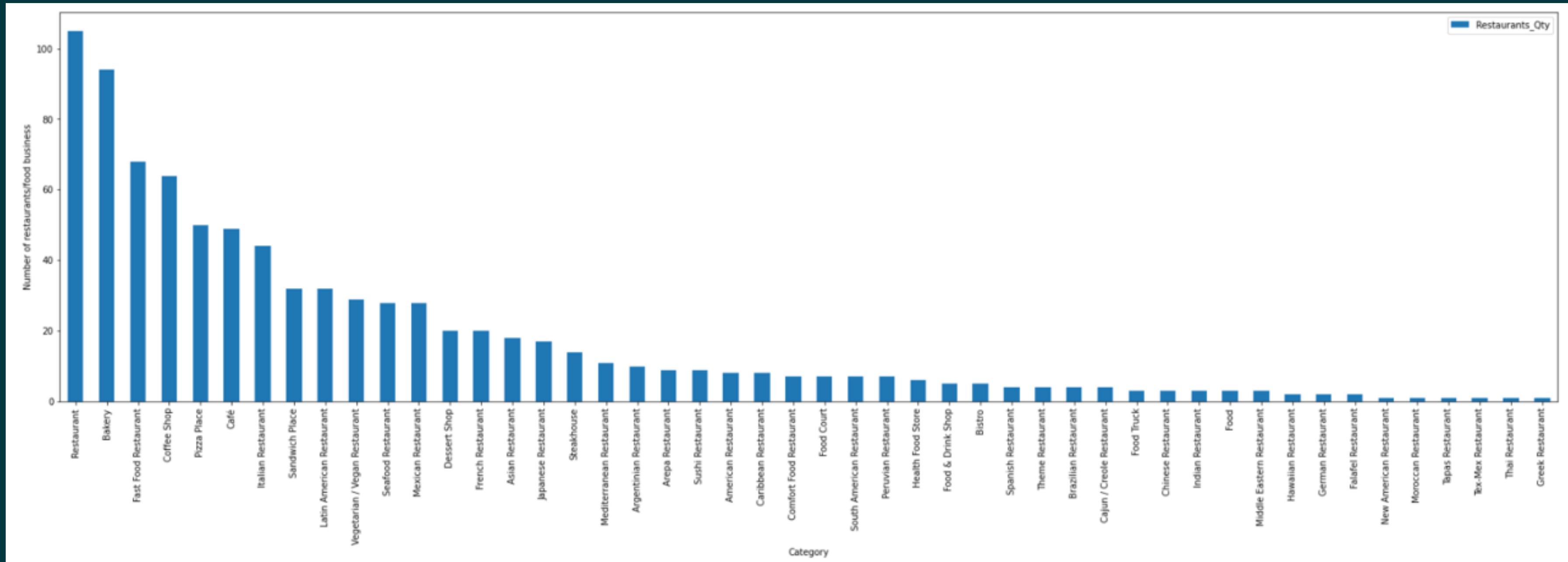


### 3. Amount of restaurants and food businesses by category in Bogotá

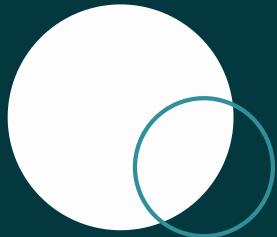


On the graph we can see the number of restaurants and food businesses by Category in Bogotá.

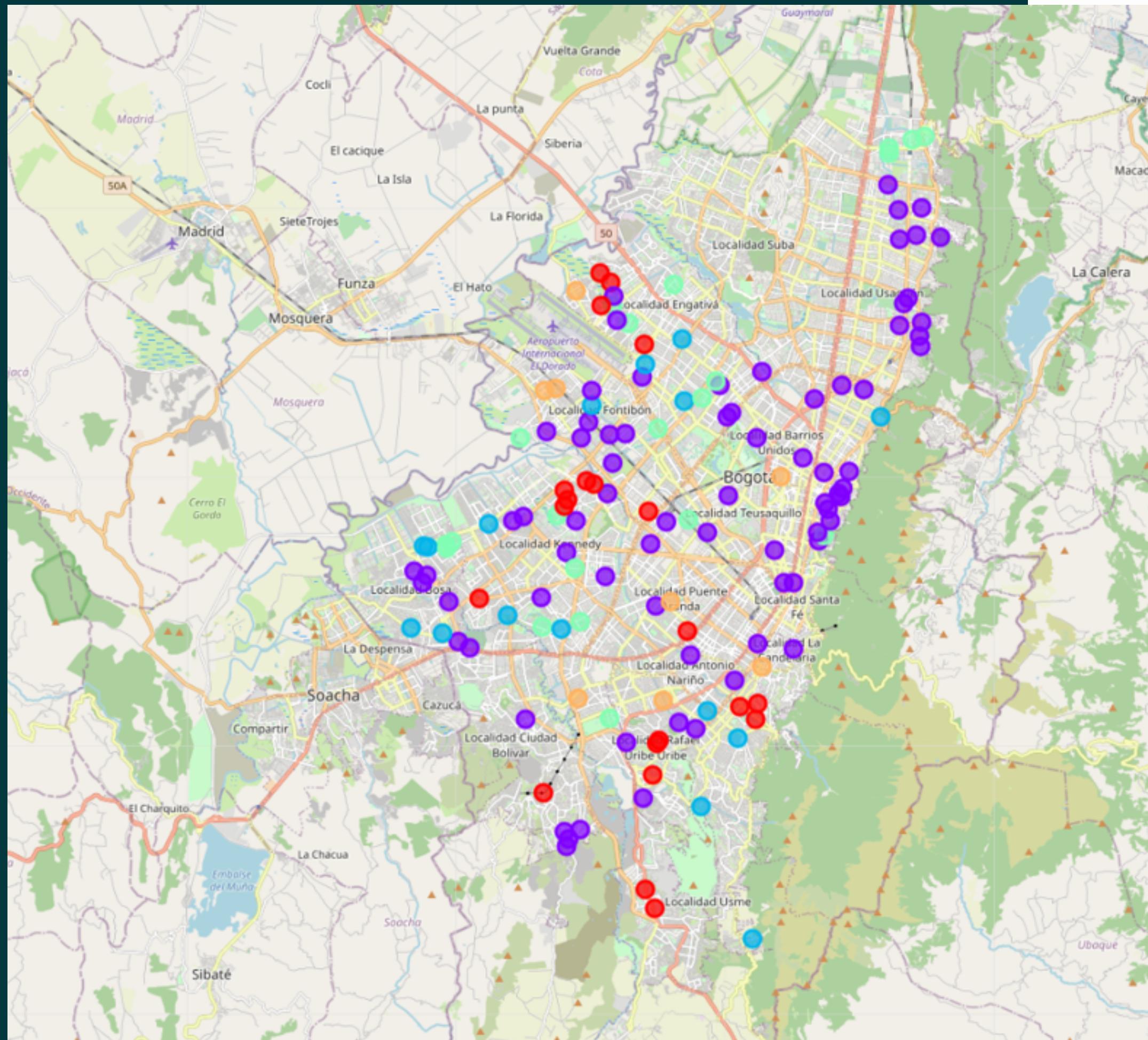
Our analysis has shown that bakeries, fast food restaurants, cafes/coffee shops, italian restaurants and pizza places are the most common categories/types of restaurants in the city.



#### 4. Segmentation of the neighbourhoods by category of restaurant using k-means method



On the map we can see the geographical distribution of the restaurants/food business, colored according with the assigned cluster: red = cluster 0, purple = cluster 1, blue = cluster 2, light green = cluster 3, orange = cluster 4.



# Results

Our analysis, performed based on the information available on Foursquare, has shown

The number of restaurants and food businesses vary widely from one neighbourhood to another, having some neighbourhoods with scarce or none restaurants running, and others with a high amount of restaurants or food businesses operating. The situation is very similar for the localidades

The highest number of restaurants are located on the center, east and northeast parts of the city. Those areas where the restaurants and food service industry are already located, are identified as potentially interesting locations to start a new business, since those are areas where the potential customers usually go searching for a place to eat.

The neighbourhoods and Localidades on the south of the city have a much lower number of restaurants on service, which can be a business opportunity, since there may be a demand not being attended yet.

From the clustering performed based on the restaurant type, we have five groups of neighbourhoods/locations. We can see that bakeries, coffee shops, vegetarian/vegan restaurants are spread all around the city, while fast food restaurants are very common on the center and the southparts of the city.

# CONCLUSIONS

We had brought together the geographic information of the Bogotá's neighbourhoods and Localidades with the Foursquare data about the distribution of restaurants and food businesses around the city.

By an exploratory analysis, we were able to identify the number of existing restaurants in every neighbourhood and Localidad, the number of existing restaurants by category, and also we could segmentate the locations into five groups based on the type/category of restaurant or food business.

With this valuable information our target audience may make a better decision about the location for a new restaurant, based on the potential demand for their products