

Location of a new business near a subway station

Data Science Capstone Project

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Business near a subway station

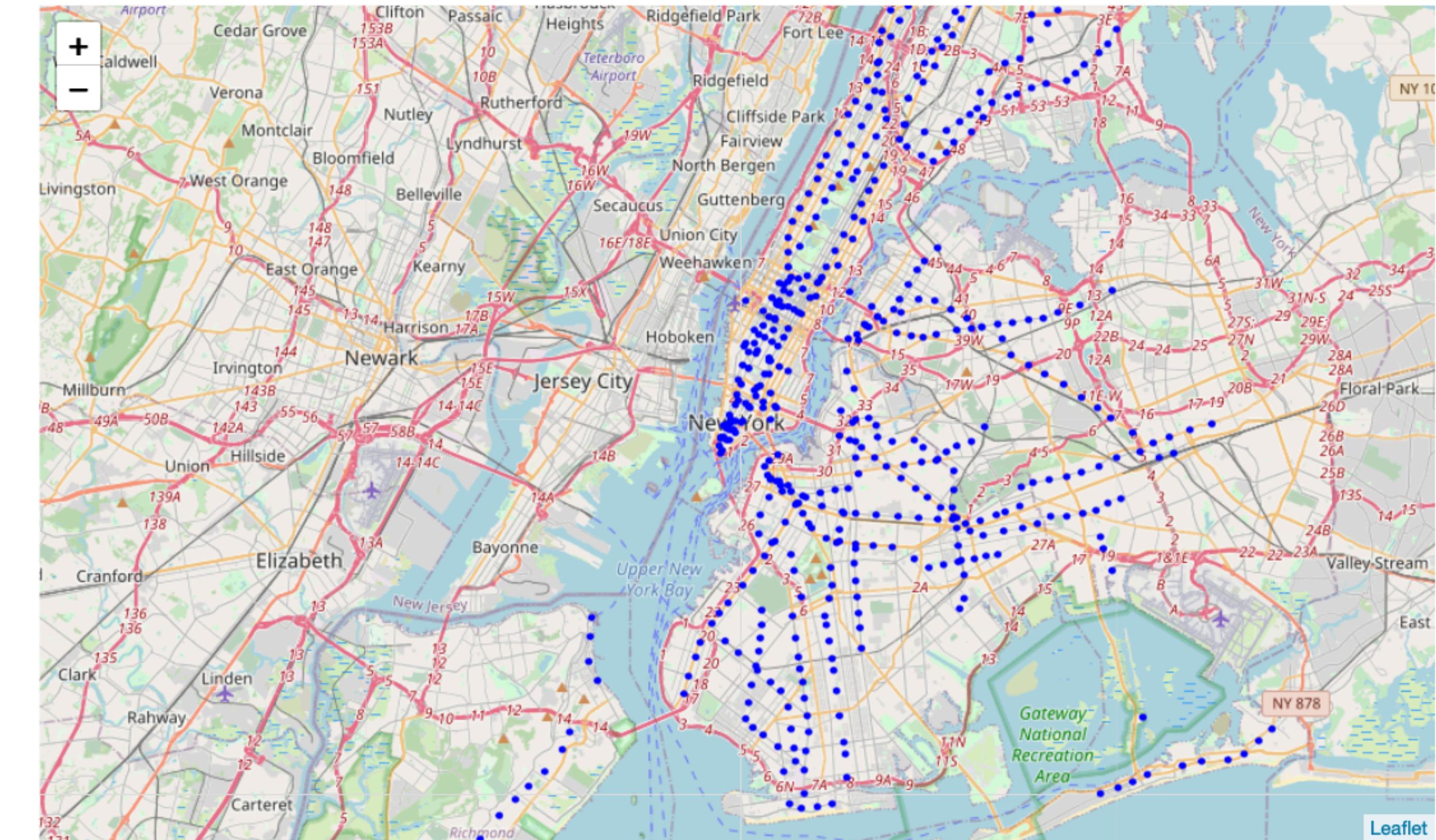
- Subway station concentrates retail businesses and other services in their surroundings due to the high rate of people transit.
- In growing cities, like Santiago de Chile, the subway network (Metro) is still growing, having recently opened stations and others still projected.
- In this study, the objective is to identify business opportunities based on the venues located near stations in a consolidated city (New York was selected) and make a contrast with the growing city.

Data acquisition and exploration

- Subway stations of New York subway network, with their geographic coordinates from the [MTA](#) website.
- Subway stations of Metro de Santiago network, with their geographic coordinates from the [Observatorio de Ciudades UC](#) (Universidad Católica)
- Venues around each station for both cities from Foursquare API.
- Details for each of the venues selected around Metro stations from Foursquare API
- Total of 613 lines for subway stations for both cities and a total of 7,097 lines of venues.

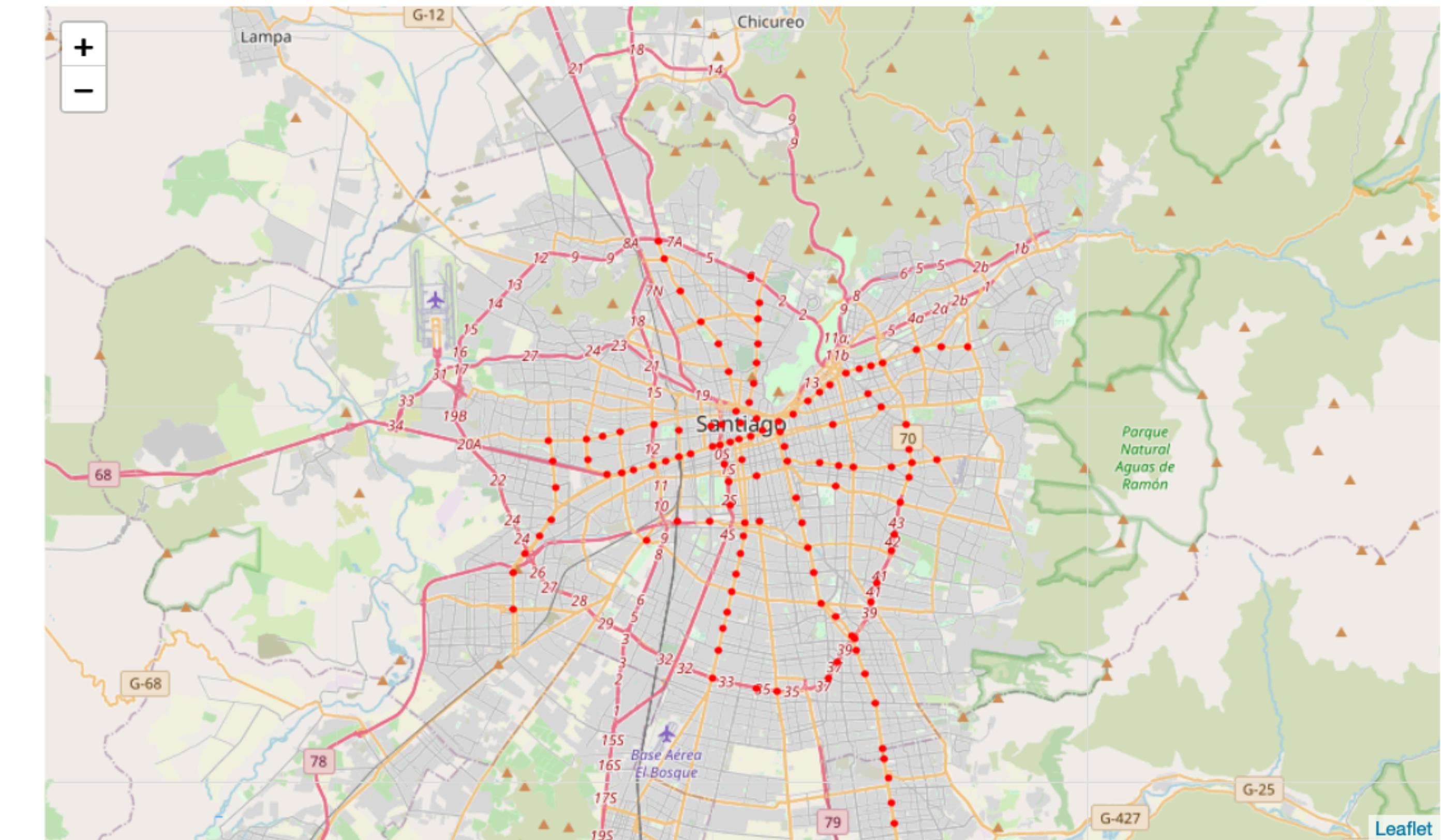
Stations in NYC

- Dataset downloaded from MTA, processed in a a dataframe and visualized in a map
- Total of 496 stations



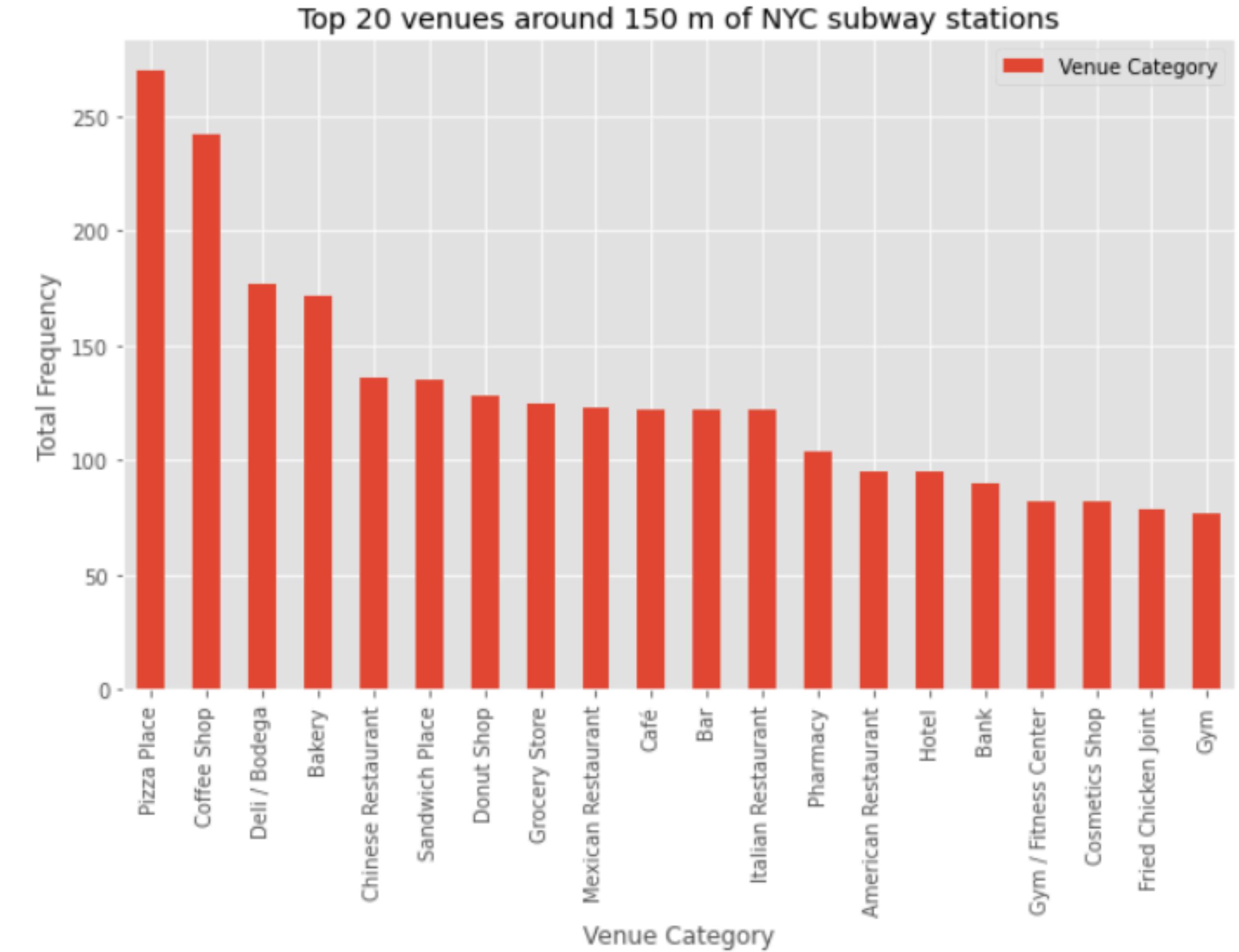
Stations in Santiago

- Dataset downloaded from Observatorio de Ciudades UC, processed in a a dataframe and visualized in a map
- Total of 117 stations



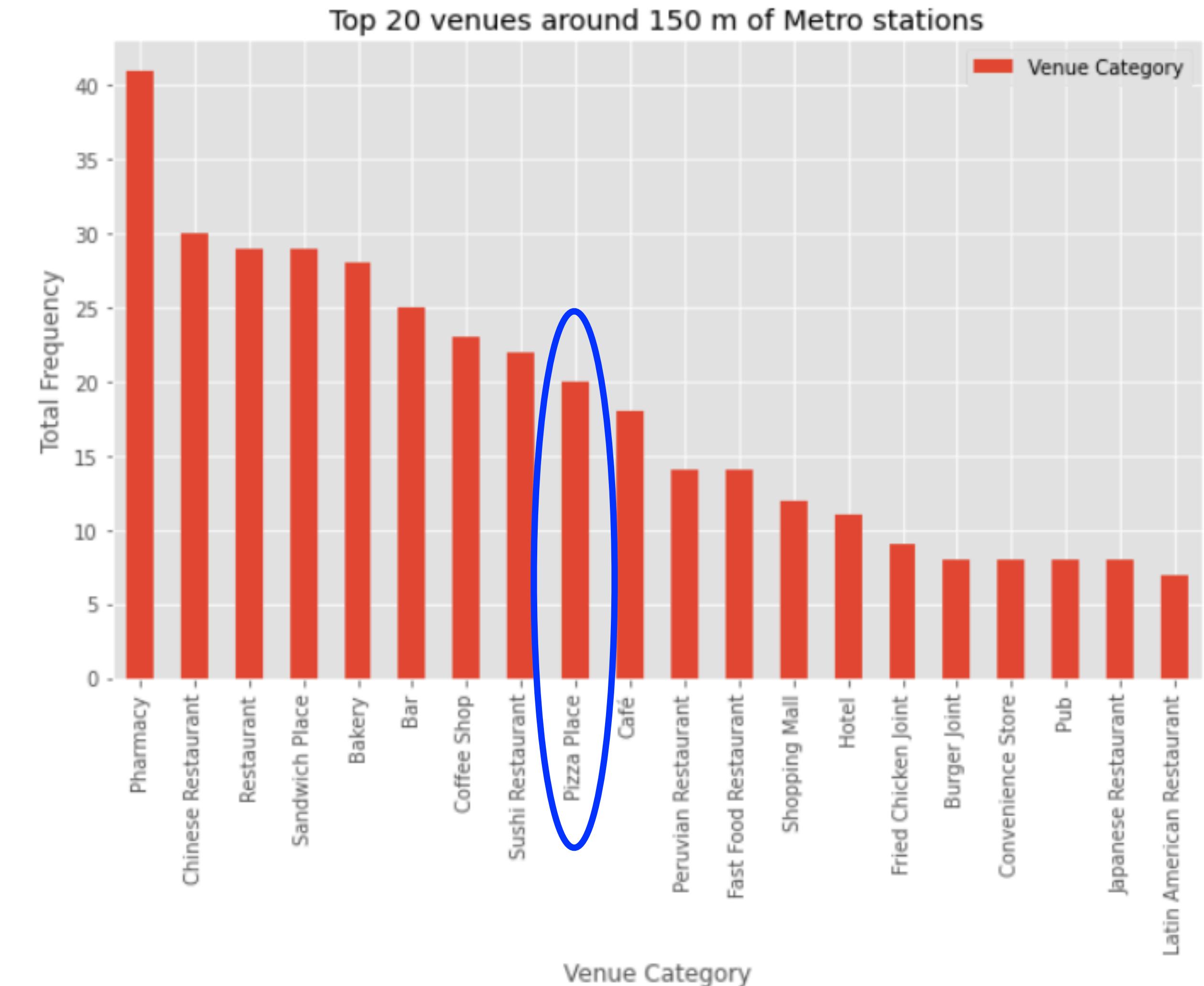
Venues in NYC

- Considering a radius of 150 m around each station, 6,375 venues were found from Foursquare.
- Rating the top 20, found that the Pizza Places is the most frequent business around stations.



Venues in Santiago

- Considering the same radius of 150 m around each station, 722 venues where found.
- Top venues are very similar between both cities (restaurants, bakeries).
- Nonetheless, the top 1 venue in NYC is the top 9 in Santiago

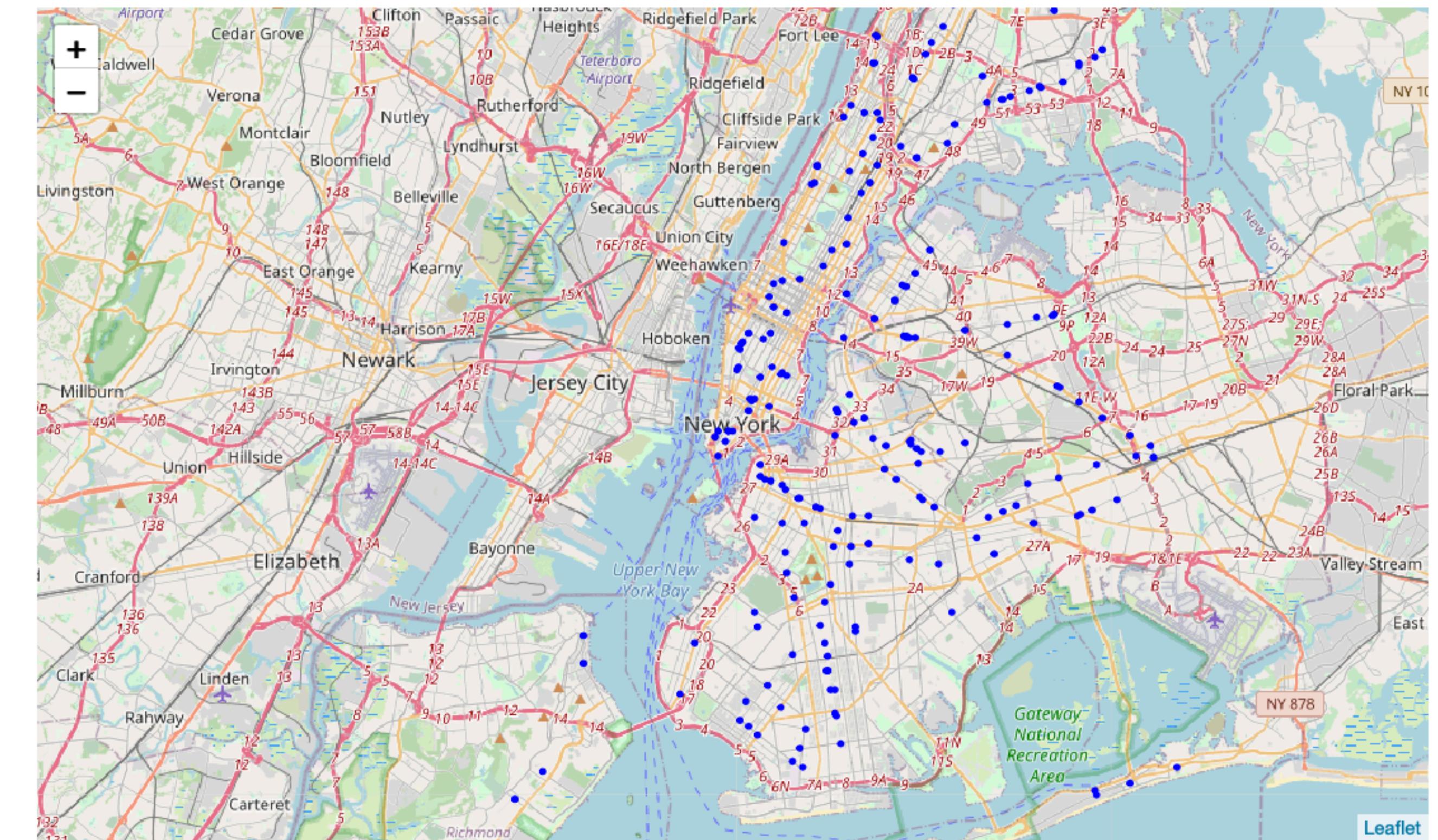


Selected Business

- It seems that there is an opportunity due the notorious difference in pizzerias in Santiago with respect to NYC. This type of venue is selected for the new business.
- To define the location of this new pizzeria, an analysis of actual pizzerias location was made in NYC and in Santiago complemented with an analysis of the number of evaluations received by each of them.

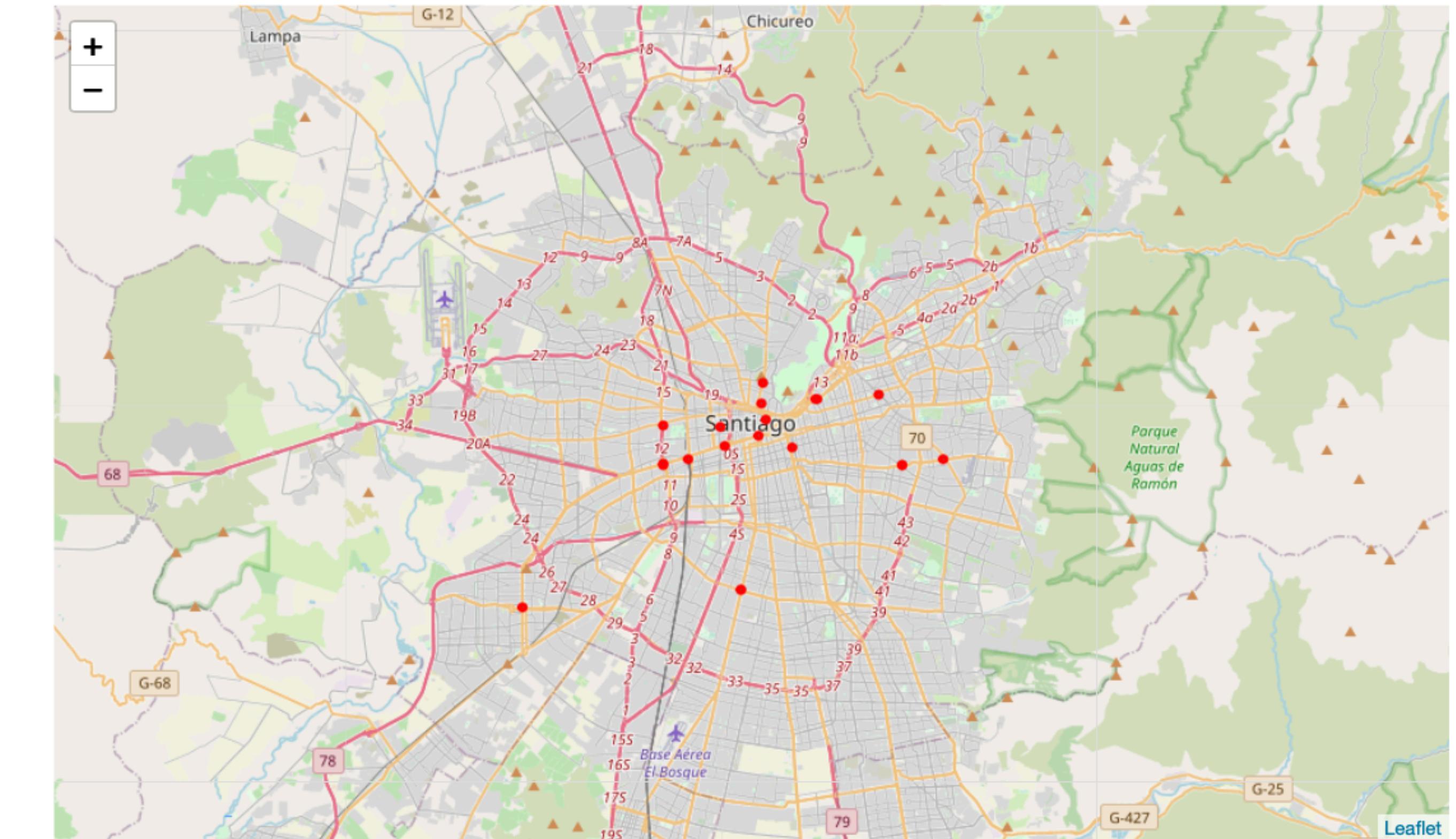
Pizzerias in NYC

- Pizza places where extracted from the total of venues
- No special geographic concentration was found as they are evenly distributed in the city as the map shows



Pizzerias in Santiago

- 20 Pizza places where filtered from the total of venues in Santiago
- Their location is somewhat concentrated in or near the downtown.



Selected Location

- The number of rating signals received of each pizzeria was considered for the location selection
- The assumption that business alike tends to be close to each other, the pizzeria with the highest number of rating signals defined the location.

	Nombre	Rating signals	
5	Pizzería Verace	346	←
6	Da Dino	283	
11	Voraz Pizza	138	
17	Da Cesare&Paolo Pizzeria Ristorante	118	
16	Papa John's	71	

Table 4

Conclusion

- The recommendation is to set up a pizzeria located in a radius of 150 m or less around the *Bellas Artes* Metro station.
- Location is at the downtown and surrounded by a number of restaurants and high people transit, as expected.
- Improvements could be made considering in the analysis the entrances/exits of each subway station.

