

Applied Data Science Capstone by IBM/Coursera

The best place for a Beer Bar in Santiago, Chile

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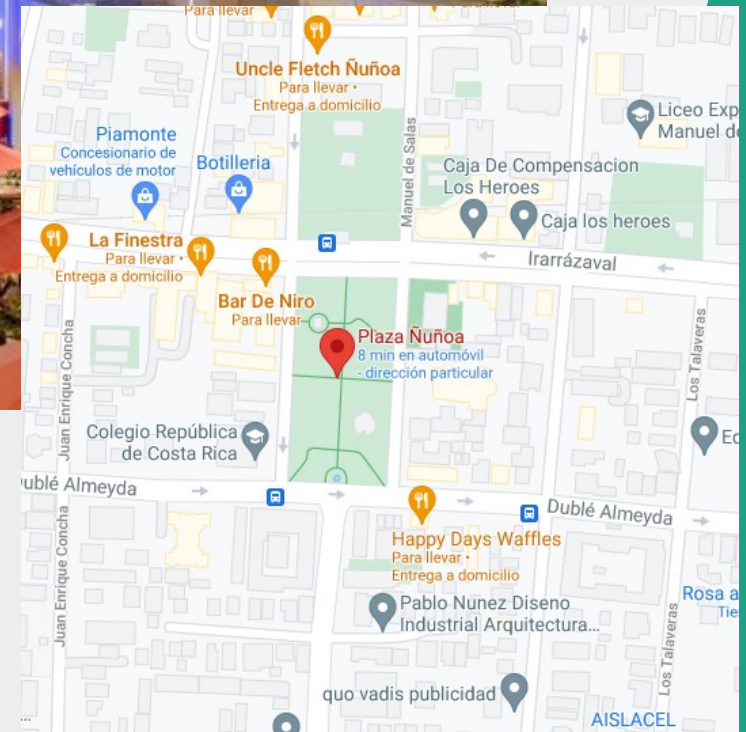
Introduction

- Business problem:
 - Find an optimal location for a Beer Bar in Santiago, Chile.
 - Preferably close to Plaza Ñuñoa, a well know location in Santiago for its nightlife.
- Also, we will look at locations with few Bars and no Beer Bars

Introduction

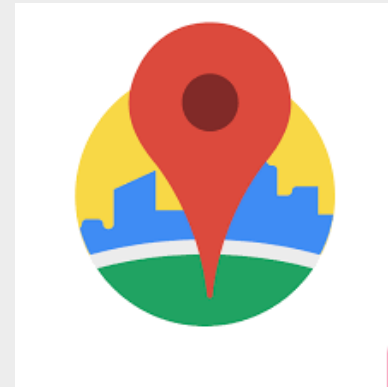
- A few most promising neighborhoods will be generated based on this criteria.
- Advantages of each area will then be analyzed, so that best possible final location can be chosen by stakeholders.

Plaza Ñuñoa – Santiago de Chile



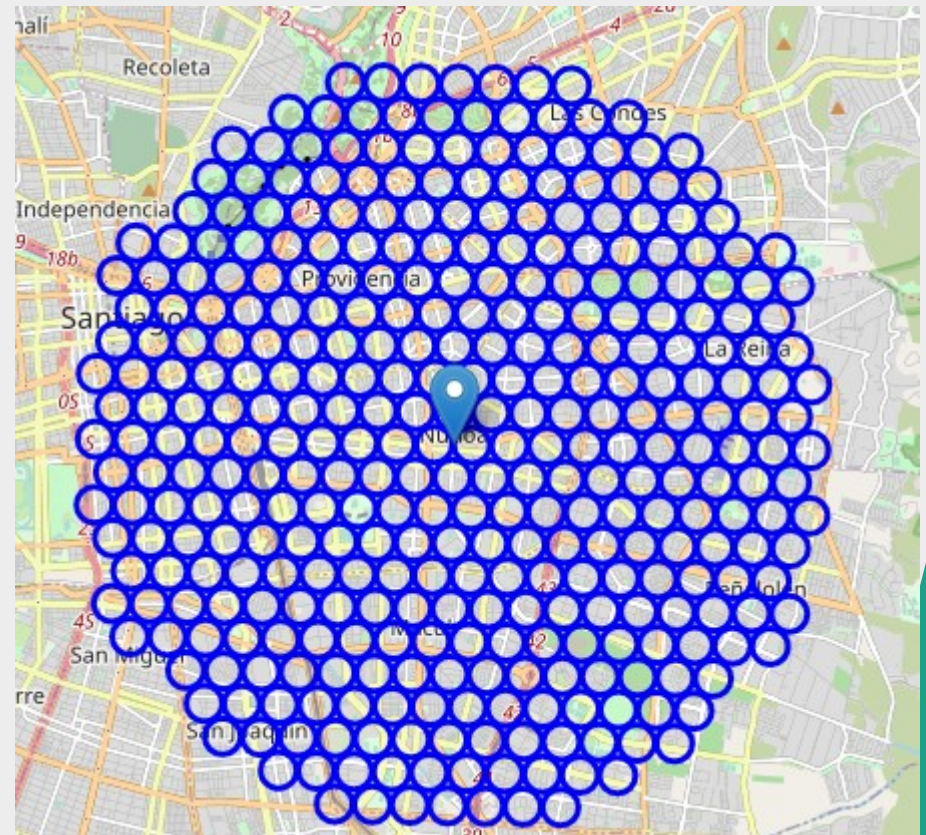
Data Sources

- Google Maps API reverse geocoding
 - Candidate addresses
- Foursquare API
 - Bar venues
- Google Maps API geocoding
 - Coordinates of locations of interest



Neighborhood Candidates

- 364 candidate neighborhood centers generated algorithmically.
- circular areas with a radius of 300 meters.



Neighborhood Candidates

- Total number of Bars: 495
- Total number of Beer Bars: 91
- Percentage of Beer Bars: 18.38%
- Average number of Bars in neighborhood: 1.2

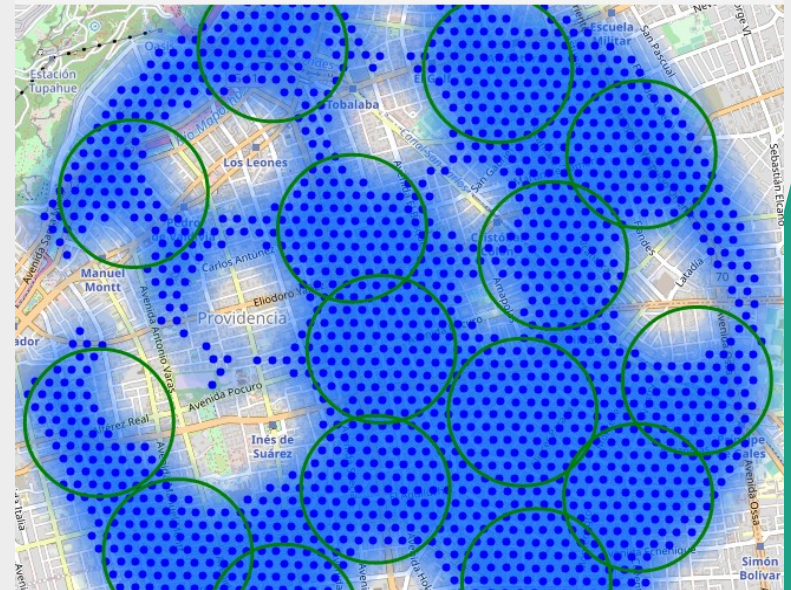
Neighborhood Candidates

- For each neighborhood the number of Bars and distance to a Beer Bar is obtained.

	Address	Latitude	Longitude	X	Y	Distance from center	Bars in area	Distance to Beer Bar
0	Vicuña Mackenna 5537, San Joaquín, Macul	-33.507336	-70.614073	350081.083034	-3.708699e+06	5992.495307	2	81.681010
1	Unnamed Road, Macul	-33.507420	-70.607615	350681.083034	-3.708699e+06	5840.376700	0	579.666128
2	Froilán Roa 5900, Macul	-33.507504	-70.601158	351281.083034	-3.708699e+06	5747.173218	0	878.958205
3	Av. Departamental 4400, Macul	-33.507587	-70.594700	351881.083034	-3.708699e+06	5715.767665	0	670.404520
4	Villa Gildemeister 4372, Penalolen, Peñalolén	-33.507670	-70.588242	352481.083034	-3.708699e+06	5747.173218	0	733.052224
5	Chillán 6092, Penalolen, Peñalolén	-33.507753	-70.581785	353081.083034	-3.708699e+06	5840.376700	0	318.300159
6	Los Cerezos 6046, Penalolen, Peñalolén	-33.507835	-70.575327	353681.083034	-3.708699e+06	5992.495307	2	620.696721
7	Piramide 237, San Joaquín	-33.502525	-70.623672	349181.083034	-3.708179e+06	5855.766389	0	506.975224
8	Emco 5080, San Joaquín	-33.502609	-70.617214	349781.083034	-3.708179e+06	5604.462508	0	680.167088
9	José Caroca 2087, Macul	-33.502694	-70.610757	350381.083034	-3.708179e+06	5408.326913	1	657.242953

Clustering

- Based on this information, the candidates areas are clustered.
- Each of those locations has no more than two bars in radius of 250m, and no Beer bar closer than 400m



Results and Discussion

- There are significant areas of low Bar density fairly close to Plaza Nuñoa.
- We focus or attention to Providencia, which offers a combination of popularity among tourists, closeness to Plaza Nuñoa, strong socio-economic dynamics and and significant areas of low Bar density.
- Result of all this is 15 zones containing largest number of potential new Bar locations.

Conclusions

- Purpose of this project was to identify Santiago areas close to Plaza Ñuñoa with low number of Bars (particularly Beer Bars) in order to aid stakeholders in narrowing down the search for optimal location for a new Beer Bar.
- Clustering of those locations was then performed in order to create major zones of interest and addresses of those zone centers were created to be used as starting points for final exploration by stakeholders.