

COURSERA Capstone Project
The Battle of Neighborhoods
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VIÑA DEL MAR OR VALPARAÍSO, WHO HAS BETTER RATING FOOD?



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1. Introduction

Viña del Mar and Valparaíso, are widely know Chilean cities in the coast of the central region of the country. Both cities are neighbors and share a variety of gastronomic option in the opinion of people. Lately, there have been many new signature cuisine restaurants, burgeries, bar & pubs opening, offering a widely variety of alternative to taste different flavors. Both cities, offer different kind of activities, especially during summer time, were both are full of tourist from foreign countries and from central region of Chile. If you ask people on vacation where they find the best restaurants, you'll have an overwhelming number of different answers, so maybe it's time to put the perception away and do an analysis of ratings and varieties of places where you can eat awesome food in both cities. This report is not an absolute truth, due is based on the partial information that is possible to get from Foursquare. The aim is present a guide to tourists in this region of Chile, and perhaps serve as a guidance to new investors on the gastronomic area.

2. Data Source

The data used in this analysis was obtained from Foursquare API. To do this, first the geographical coordinates of both cities was gotten with the geocoder on Geopy. After that the foursquare's API was used to get all the venues in a radius of 3 km for each pair coordinates. To get the ratings of the places, the foursquare's API was also used, getting all the data needed trough "venues - explore" and "venues - details" endpoints from the API.

3. Methodology

In this section will be describe the process done during the analysis stage.

3.1. Gathering and cleaning data

The first stage was get the coordinate of each city. To do this geocoder from Geopy was used using as address:

- city1 = 'Valparaíso, Chile'
- city2 = 'Viña del mar, Chile'

After got the coordinates for each city, the Foursquare's API was used with the url, https://api.foursquare.com/v2/venues/explore?&client_id={} &client_secret={} &v={} &ll={}, {} &radius={} &limit={}, where ll correspond to latitude and longitude of each city, the radius was set on 3 km and the limit of responses number was set to 150. With this settings was possible to get a json file with 200 records of venues in both cities, with 87 unique venue categories. The json file was converted to a Pandas DataFrame, usign *id*, *name*, *location* and *categories* from response fields, after that we check for "nan" value, and group to find how many unique venues categories had. With the purpose

of use only venues related to food serving, a filtering of the previous data was made. To achieve this, a list with key terms was defined, as show in the following figure:

```
# define search values
searchValues = ['Restaurant', 'Bagel', 'Beer', 'Bar', 'Breakfast', 'Brewery', 'Burger', 'Coffee', 'Cupcake', 'Dessert', 'Diner', 'Launch', 'Pizza', 'Pub', 'Sandwich', 'Hot Dog', 'Ice Cream', 'Steakhouse']
foodVenues = venuesVinaValpo[venuesVinaValpo['Venue Category'].str.contains('|'.join(searchValues), regex = True)]
foodVenues.reset_index(drop = True, inplace = True)
print(foodVenues.shape)
print('Existence of Null values: {}'.format(foodVenues.isna().any()))
foodVenues.tail(50)
```

Figure 1: Key word used

After this process only data related to places that serve food was left. To obtain the rating of each food place, the "venue-details" endpoint from Foursquare's API was used, where the "id" of each venue was got on the previous step and save into the DataFrame. The response of this endpoint was also a json file, where only the *rating* response field was used. All this data was save to a Dataframe like is shows on the next figure:

	City	City Latitude	City Longitude	id	Venue	Venue Latitude	Venue Longitude	Venue Category	Rating
0	Valparaíso	-33.045846	-71.619675	54136e12498e5447674366c9	Hotzenplotz	-33.048339	-71.622510	German Restaurant	9.1
1	Valparaíso	-33.045846	-71.619675	4b61eaf6f964a5202a2b2ae3	Bogarín	-33.046735	-71.619637	Sandwich Place	8.6
2	Valparaíso	-33.045846	-71.619675	570bcfb2498eb339ee9d9d95	Sazón Nazca	-33.046749	-71.616066	Peruvian Restaurant	8.9
3	Valparaíso	-33.045846	-71.619675	54cd707f498e0e083b18ba42	Habrakadabra Sabores	-33.048186	-71.615182	Pizza Place	8.7
4	Valparaíso	-33.045846	-71.619675	5155d374e4b0ec92c7aa4946	Espíritu Santo	-33.048899	-71.622355	Restaurant	8.5

Figure 2: DataFrame

3.2. Analysis

With the gather and cleaning stage complete, was possible to perform analysis on data. First all, was needed to define what be considered a "good places to eat", for analysis scope. The rating from Foursquare are in a scale of 1 to 10, being 10 the best. Considering that, the threshold of being a good place was set on 7.0. In this way, any place rated equal or more than this qualification was considered as a good place. The result of the filtered DataFrame, according to the set threshold value, was transform into a Heat Map, using folium library, in order to saw in a more friendly way, where the food places scoring over 7.0 was located and if was possible to identify some "cluster" of good places. To have a more quantitative approach, some metric on data was taken. This include the number of

places with rating score over 7.0 in each city, the distribution of this scores on both cities and the numbers of unique categories in each of them, presenting finally the best top 10 places according the Foursquare rating.

4. Results

The analysis found that Valparaíso has 47 places rated over 7.0, in comparison with Viña del mar that has 59 places rated over 7.0, means a 20% less of good places to eat. Seeing the heatmap is posible to note that Valparaíso has a cluster of good restaurant with higher rate in the "Cerro Concepción - Cerro Alegre" area, in contrast, viña del mar has his better food places distributed in a bigger area form by the intersections of "4 poniente - 4 norte - 2 poniente - 8 norte" streets. This results can be view on the following figures:

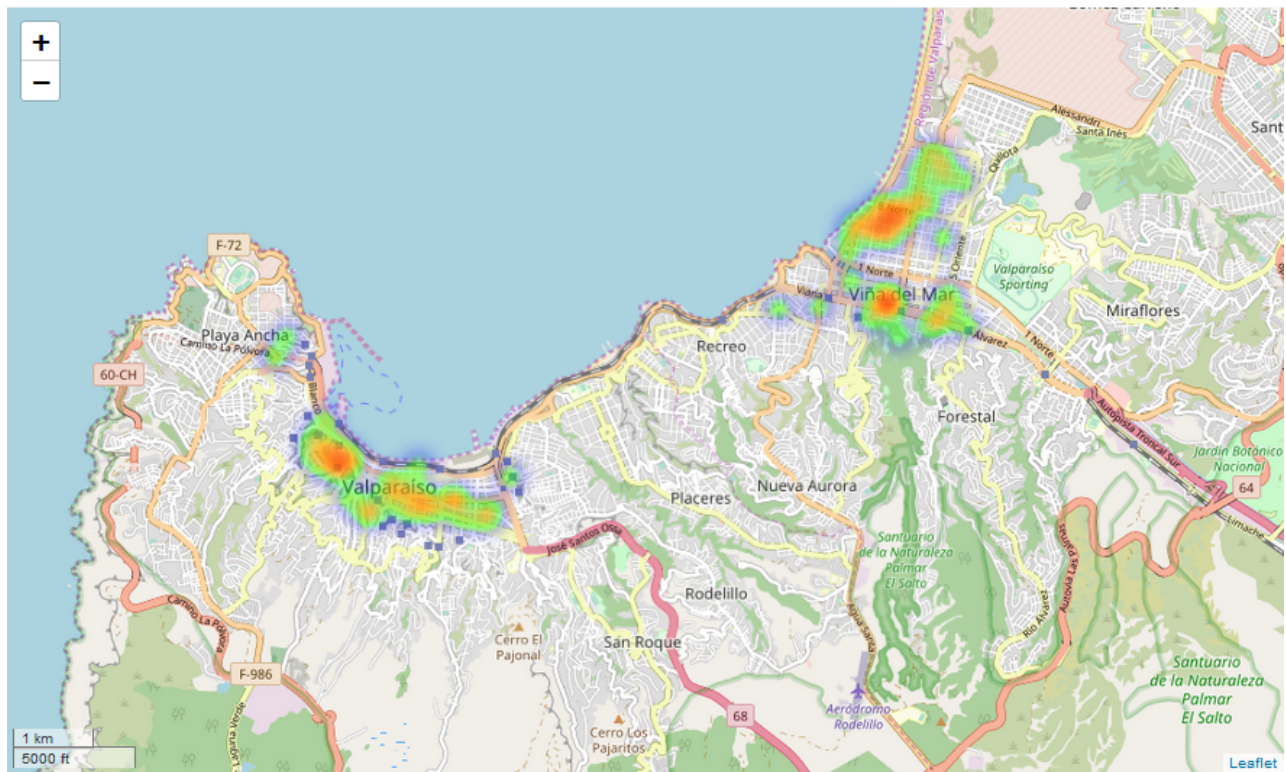
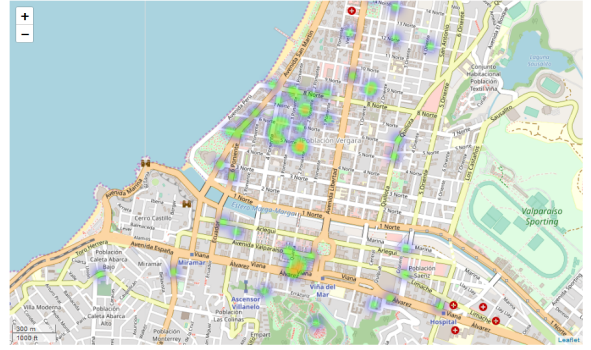


Figure 3: Both Cities Heat Map



(a) Valparaíso Heat Map



(b) Viña del Mar Heat Map

Figure 4: Clusters on both cities

An analysis to the distribution of rating on those food places rating over 7.0 was done for the two cities, finding that Valparaíso has a higher average rank, and in general its food place tend to be better rank in comparison to food places in Viña del Mar. This can be view in the following figure: If variety

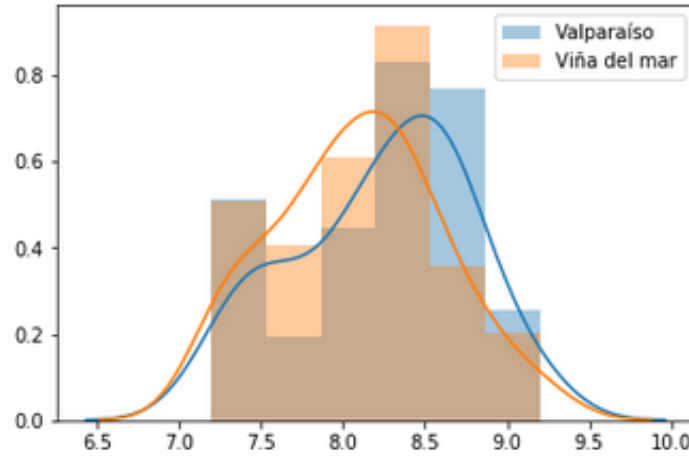


Figure 5: Rating Distribution on Both Cities

in gastronomic offer is interpreted as how many unique food places category exists on each city, the data shows that Viña del Mar has much variety because had 29 different categories in contrast with 23 of Valparaíso. Finally a top ten food place list was made in order to know which are the better places overall in both cities with the following results:

	index	City	Venue	Venue Latitude	Venue Longitude	Venue Category	Rating
0	53	Viña del mar	helados Coletti	-33.015976	-71.553024	Ice Cream Shop	9.2
1	58	Viña del mar	Don Vito e Zanoni	-33.014724	-71.554099	Italian Restaurant	9.2
2	19	Valparaíso	La Dulcería	-33.042442	-71.630630	Dessert Shop	9.2
3	9	Valparaíso	Malandrino	-33.043878	-71.628771	Pizza Place	9.1
4	0	Valparaíso	Hotzenplotz	-33.048339	-71.622510	German Restaurant	9.1
5	55	Viña del mar	Pizzeria Monte Amiata	-33.016756	-71.554636	Italian Restaurant	9.0
6	62	Viña del mar	Glasgow Pub	-33.015129	-71.553750	Beer Garden	8.9
7	2	Valparaíso	Sazón Nazca	-33.046749	-71.616066	Peruvian Restaurant	8.9
8	54	Viña del mar	San Romano	-33.017734	-71.555488	Pizza Place	8.8
9	18	Valparaíso	Brecon's	-33.041745	-71.628720	Pub	8.8

Figure 6: Top Ten Food Places List

5. Discussion

The results obtained and also the analysis could be improve by means of adding more data source. If it will be possible to add data, especially rating, from tripadvisor, google and other portals, the analysis may conduct to a more consistent result. Also, with more information and details from every food place, as range price, type of food, and so on will be possible to make a cluster analysis in order to identify factors of success (high rating).

6. Conclusion

None of both cities is an absolute winner in this analysis. This is because, Valparaíso present food places slightly better rank than Viña del mar, meanwhile viña del mar offer more places and also more variety (different kinds of place), and both cities have five places between the top ten. In conclusion both cities have attractive gastronomy if you are interested only in high rating food and dont want spend much time walking around, maybe is a good option to go to Valparaíso "Cerro Concepción" area. On the other hand, if you want quality in a much wider area, perhaps Viña del Mar area must be the chioce.