

OPENING A LATIN RESTAURANT IN VANCOUVER

CAPSTONE PROJECT - THE BATTLE OF NEIGHBORHOODS

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INTRODUCTION

1.1. Background

Vancouver has been recognized as one of the 5 best cities in the world to work, live and study. This fact is due to order, security, cleanliness and the enormous cultural offer for both locals and foreigners.

Without a doubt, it is one of the most attractive cities for latin people who seek to emigrate or carry out some type of study abroad.

According to official censuses, approximately 500,000 latin people live in Vancouver and the number of students each year is increasing.

1.2. Problem Description

One of the things that are most missed when emigrating is the food, so with this project we will seek to analyze a series of data that will allow us to make a recommendation about the place where it would be a good decision to open a new Latin restaurant.

For this, some of the techniques, libraries and applications learned throughout this course will be used.

The goal will be to answer the following questions:

- ✓ In which area of Vancouver are there more restaurants?
- ✓ What is the recommended area?

1.3. Target Audience

- ✓ People looking to open new restaurants
- ✓ Restaurants
- ✓ Latin people live and studying in Vancouver

2. DATA

The data will be generated and extracted like this:

- List of postal codes of Vancouver, the information will be read and prepared to create a dataframe with the necessary columns ['PostalCode', 'Borough', 'Neighborhood']. Source:
https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_V



The screenshot shows the Wikipedia page titled "List of postal codes of Canada: V". It includes an introductory paragraph about postal codes in British Columbia and a table of postal codes categorized by urban areas. The table has two rows of data, each with nine columns representing different urban areas and their corresponding postal codes and neighborhoods.

Urban	Urban	Urban	Urban	Urban	Urban	Urban	Urban	Urban
V1A Kimberley	V2A Penticton	V3A Langley Township (Langley City)	V4A Surrey Southwest	V5A Burnaby (Government Road / Lake City / SFU / Burnaby Mountain)	V6A Vancouver (Downtown / Chinatown / Downtown Eastside)	V7A Richmond South	V8A Powell River	V9A Victoria (Vic West / Esquimalt) Canadian Forces (MARPAC)
V1B Vernon East	V2B Kelowna Northwest	V3B Port Coquitlam Central	V4B White Rock	V5B Burnaby (Fairview-Ridgway / Annapolis-South)	V6B Vancouver (NE Downtown / Gastown / Harbour Centre / International Village / Victory Square / Westhills)	V7B Richmond (Oak Island / FYR)	V8B Squamish	V9B Victoria (West Highlands / North Langford / View Royal)

- Get the Longitude and Latitude of each Vancouver postal code. Create new dataframe.
- Using Foursquare API get the restaurant's number and their type and location.

Libraries which are used to develop this project

- ✓ Pandas: To create and manipulate data frames.
- ✓ Folium: Python visualization library would be used to visualize the neighborhood cluster distribution of using an interactive leaflet map.
- ✓ JSON: Library to handle JSON files.
- ✓ Geocoder: To retrieve Location Data.
- ✓ Scikit Learn: To import k-means clustering.
- ✓ BeautifulSoup and Requests: To scrap.
- ✓ Matplotlib: To Plotting.
- ✓ urllib.request: Open URL

3. Methodology

- ✓ Use the Vancouver zip code list. Available at the link:

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_V

The data downloaded from the source allows us to identify all the Vancouver postal codes and neighborhoods that will be used to determine the number of restaurants per area.

	Neighborhood	Latitude	Longitude
0	Strathcona	49.277693	-123.088539
1	NE Downtown	49.287469	-123.119579
2	Waterfront	49.285544	-123.113541
3	SE West End	49.285998	-123.127358
4	NW West End	49.284131	-123.131795
5	West Fairview	49.263476	-123.115243
6	North Hastings-Sunrise	49.278714	-123.039998
7	Central Kitsilano	49.269410	-123.155267
8	North Grandview-Woodland	49.275849	-123.066934
9	NW Arbutus Ridge	49.246305	-123.159636
10	South Hastings-Sunrise	49.262493	-123.056896
11	South Grandview-Woodland	49.262493	-123.056896
12	West Kerrisdale	49.220985	-123.159548
13	SE Kensington-Cedar Cottage	49.247632	-123.084207

Data Post-Processing

In order to get the latitude and longitude information, geopy.geocoders.Nominatim package is used. After that, the data frame is updated with the latitude and longitude information.

- ✓ Analyze the number of Latino restaurants by area in Vancouver.

Using the browse feature in the Foursquare API, each neighborhood in Vancouver is analyzed for popular places around latitude and longitude information. In this case, the radius has been set at 500 meters, while the maximum limit of popular places is by default 100.

```
vancouver_venues.groupby('Neighborhood').count()
```

Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Bentall Centre	69	69	69	69	69	69
Central Kitsilano	52	52	52	52	52	52
East Fairview	55	55	55	55	55	55
East Mount Pleasant	57	57	57	57	57	57
Killarney	19	19	19	19	19	19
NE Downtown	50	50	50	50	50	50
NW Arbutus Ridge	9	9	9	9	9	9
NW West End	55	55	55	55	55	55
North Grandview-Woodland	35	35	35	35	35	35
North Hastings-Sunrise	28	28	28	28	28	28
Pacific Centre	15	15	15	15	15	15

The total number of popular venues explored around the neighborhoods in Vancouver city

For the analysis, 26 Neighborhoods and a total of 928 businesses were found divided into 160 categories.

27	Scandinavian Restaurant
28	Seafood Restaurant
29	South Indian Restaurant
30	Sushi Restaurant
31	Szechuan Restaurant
32	Tapas Restaurant
33	Thai Restaurant
34	Turkish Restaurant
35	Vegetarian / Vegan Restaurant
36	Vietnamese Restaurant

Types of restaurant in Vancouver.

✓ Filter restaurants and group by type Latin Restaurant

	Neighborhood	Latin Restaurant
0	Bentall Centre	0.000000
1	Central Kitsilano	0.019231
2	East Fairview	0.000000
3	East Mount Pleasant	0.000000
4	Killarney	0.000000
5	NE Downtown	0.000000
6	NW Arbutus Ridge	0.000000
7	NW West End	0.018182

Mean frequency of Latin Restaurant

The restaurants with categories related to Latin Restaurants were grouped and a DataFrame was created with the results. This was done since the category we are looking for does not exist but there are several that are related

✓ View the restaurants in Latin classification by area.

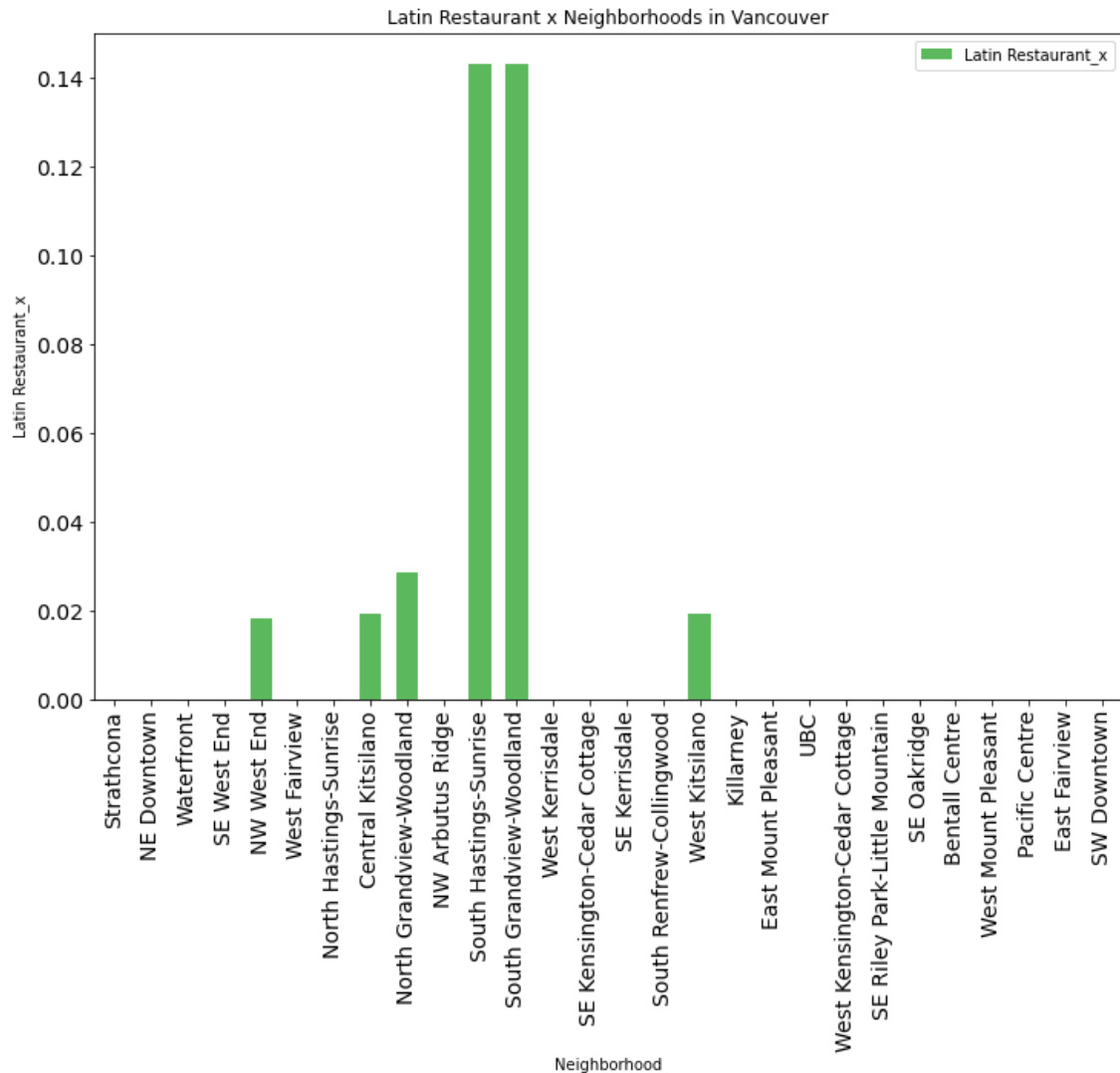
```
#add new column
df_new = df_new.merge(vancouver_grouped, on="Neighborhood", how="left")
df_new.head(30)
```

]:

	Neighborhood	Latitude	Longitude	PostalCode	Borough	Latin Restaurant_x
0	Strathcona	49.277693	-123.088539	V6A	Vancouver	0.000000
1	NE Downtown	49.287469	-123.119579	V6B	Vancouver	0.000000
2	Waterfront	49.285544	-123.113541	V6C	Vancouver	0.000000
3	SE West End	49.285998	-123.127358	V6E	Vancouver	0.000000
4	NW West End	49.284131	-123.131795	V6G	Vancouver	0.018182
5	West Fairview	49.263476	-123.115243	V6H	Vancouver	0.000000
6	North Hastings-Sunrise	49.278714	-123.039998	V5K	Vancouver	0.000000
7	Central Kitsilano	49.269410	-123.155267	V6K	Vancouver	0.019231
8	North Grandview-Woodland	49.275849	-123.066934	V5L	Vancouver	0.028571
9	NW Arbutus Ridge	49.246305	-123.159636	V6L	Vancouver	0.000000

4. Results - Data Visualization

This is the result of the analysis represented in a bar-type graph, in which it can be observed that in very few neighborhoods there are Latino restaurants.



Bar-type graph Neighborhoods – Number of Latin Restaurants.

The Folium package was used, the Vancouver map was generated using the latitude and longitude of Vancouver (49.2608, -123.11339). The following map shows the neighborhoods of Vancouver:



Vancouver's map.

5. Discussion

The low presence of Latino restaurants around Vancouver neighborhoods really does leave a big question about the feasibility of opening this type of restaurant. There may be many aspects but it must be a future analysis in which other aspects are taken into account such as the economic situation of Latin people, the time they live in the country or the failure to open restaurants that have good ratings.

6. Conclusions

This project was carried out in the city of Vancouver, allowing us to observe that the number of Latino restaurants in Vancouver is very low and in only 6 areas out of 27 these types of restaurants appear.

It is a good start to determine if it is really profitable to open this type of restaurant.

On the question of the project, it can be said that the best areas for the opening of the Latin restaurant would be in South Hastings-Sunrise or South Grandview-Woodland.