Capstone Project: Opening a Mexican Restaurant in Hong Kong

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Introduction

Background

Hong Kong - also known as the "Fragrant Harbour" - has been dubbed the Financial Hub of the East. The city's established financial status has attracted tens of thousands of foreigners to conduct businesses here, which has in turn contributed to its diverse culinary scene. Though restaurants hailing from Asia, Europe, and North America can easily be spotted on the streets of Hong Kong, the city seemed to be lacking in options for authentic Mexican cuisines. In this capstone project, we will be exploring the neighborhoods of Hong Kong to help potential Mexican restaurant owners select the prime location to kick start their businesses. Given Hong Kong's packed and fast-paced nature, I believe this report would be a useful starter guide for potential Mexican restaurant owners to narrow down their location options.

Business Problem

Even though Hong Kong is a culturally dynamic city tightly squeezed into cramped spaces, neighborhoods are culturally segregated despite their proximity to each other. The city can be divided into three main territories — Hong Kong Island, Kowloon and New Territories. The three territories can be further subdivided into 18 Districts, which will serve as the base unit for this project. The project aims to use Foursquare APIs to search for districts that have little to no Mexican restaurants, but at the same time, packed with as many night venues (i.e. clubs, bars) as possible. At the same time, the project will also attempt to divide the district offices into clusters and seek for the ones that best satisfy the definition of "prime location," which is having the least amount of pre-existing Mexican restaurants nearby, while being in a dynamic neighborhood filled with nightlife options.

Target Audience

Entrepreneurs who are looking to open an authentic Mexican restaurant or a fusion restaurant serving Mexican cuisines will find this report useful when it comes to selecting the prime location to kickstart their businesses. The report is catered towards foreign entrepreneurs who are not already familiar with the dynamic of different Hong Kong neighborhoods, although local entrepreneurs will also find the report beneficial to a certain extent.

Data and Methodology

Data Acquisition

I acquired the dataset "District Offices and Sub-offices" on the Hong Kong GeoData Store. I selected the CSV format instead of the GeoJSON format since the latter one did not include the coordinates of the offices, which are crucial when using Foursquare APIs.

Data Description

The data include 36 District Offices and Sub-offices spreading across 18 Hong Kong Districts. Although some districts have more than three offices stationed, while some only have one, I decided to use all 36 offices as I believe it will provide a more fair and accurate representation of the geographical distribution of the city. For instance, some districts are more spread out or populous, which will require more representation (in this case, offices), in the dataset in order to cover most areas of Hong Kong when running the Foursquare APIs.

Data Cleaning & Feature Selection

The dataset has provided 25 features in total, but most of them are irrelevant to our study. Some of the features are merely duplicates in Chinese and can be easily removed. Only five features are deemed relevant, including *Facility Name, District, Address, Latitude and Longitude*. Fortunately, there is no missing data among these five relevant features.

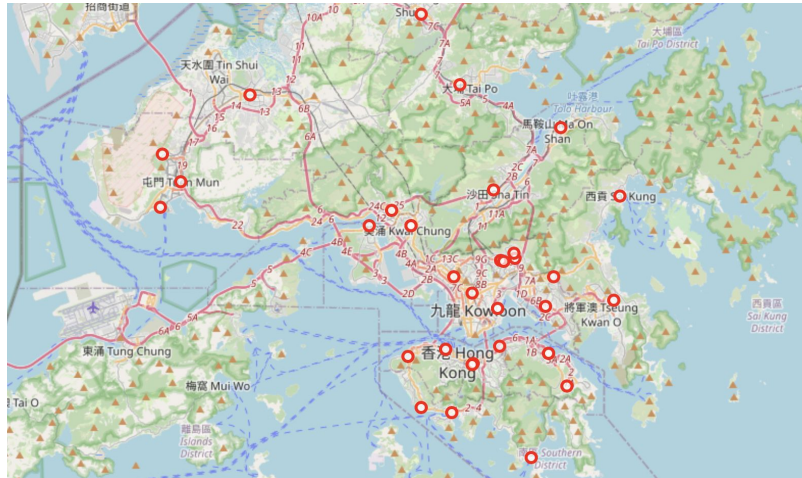|	Office Name	Address	District	Latitude	Longitude
0	Wan Chai District Office - Sub Office	G/F., 2 O'Brien Road, Wan Chai, Hong Kong.	WAN CHAI	22.27737	114.17320
1	Wan Chai District Office	21/F, Southorn Centre, 130 Hennessy Road, Wan ...	WAN CHAI	22.27726	114.17283
2	Eastern District Office - Chai Wan Sub-office	New Jade Garden, Level One, 233 Chai Wan Road,...	EASTERN	22.26391	114.23635
3	Eastern District Office - Causeway Bay Sub-office	1/F, Causeway Bay Community Centre, 7 Fook Yum...	EASTERN	22.28845	114.19106
4	Eastern District Office - Shau Kei Wan Sub-office	G/F, Eastern Law Courts Building, 29 Tai On St...	EASTERN	22.28419	114.22429

Methodology

Using Foursquare data, I did an initial scan on each district office / sub-office to see which of them has yet to have a Mexican restaurant within two kilometers of the neighborhood. Aside from scouring districts with no pre-existing Mexican restaurants, I also did a scan to see which neighborhood has the most vibrant nightlife - an important factor constituting the neighborhood's ability to draw crowds. After running through two of the most prominent factors in selecting a location, I've also classified the 36 offices into clusters using the k-means clustering techniques based on similarities of their nearby venues within two kilometers. The final recommendations will be based on an integrated analysis of all the results obtained. Folium map was also used to visualize the offices, which are color-coded based on the cluster assigned.
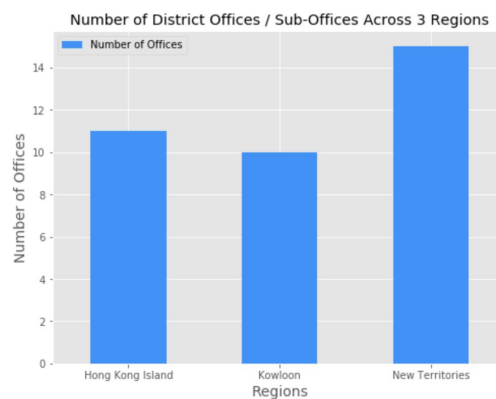
Exploratory Data Analysis

Visualization of the 36 Offices

The map below shows the distribution of the 36 district offices and sub-offices across 18 districts in Hong Kong. From the map below, we can see that the offices have covered most major parts of Hong Kong, with the Lantau Island and other small outlying islands being left out. The map also shows that Kowloon has the highest concentration of offices, with some potentially overlapping when running the Foursquare analysis using two kilometers as the radius. Meanwhile, offices are mostly spread out in the New Territories region.
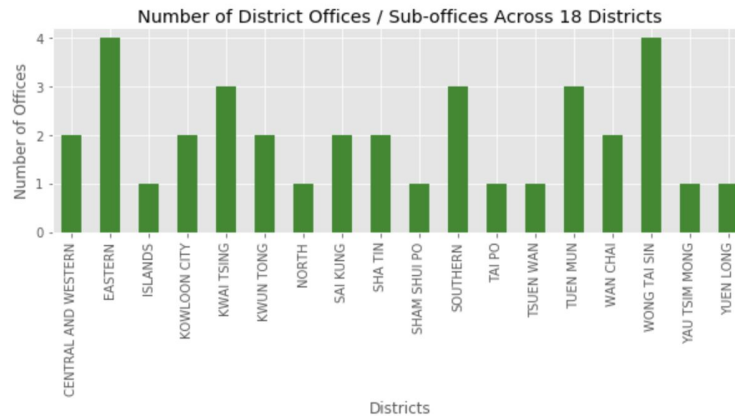

Number of District Offices / Sub-offices in Each Region

As the biggest region by far, New Territories has the most number of offices at 15. Despite being the least populous of the three, Hong Kong Island also has 11 offices representing the region, while the notoriously crowded Kowloon has 10.
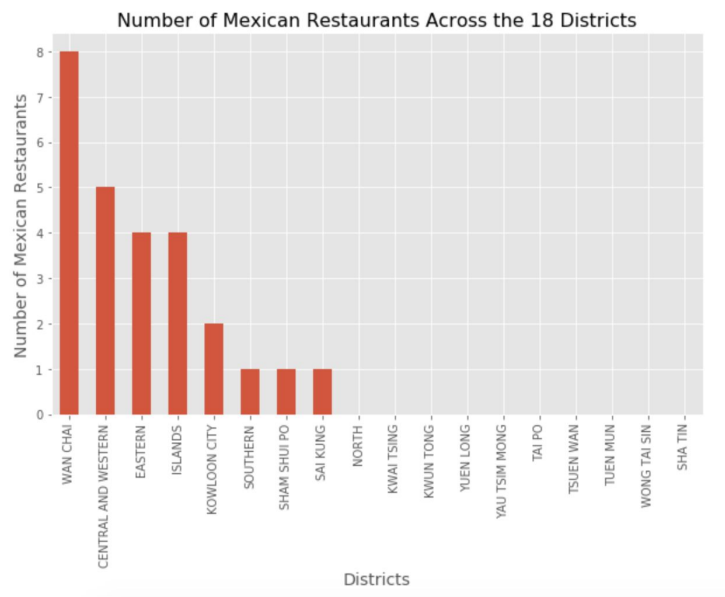
Number of District Offices / Sub-offices Across 18 Districts

Both Eastern and Wong Tai Sin Districts have four offices representing, followed by Kwai Tsing, Southern and Tuen Mun District with three offices each.
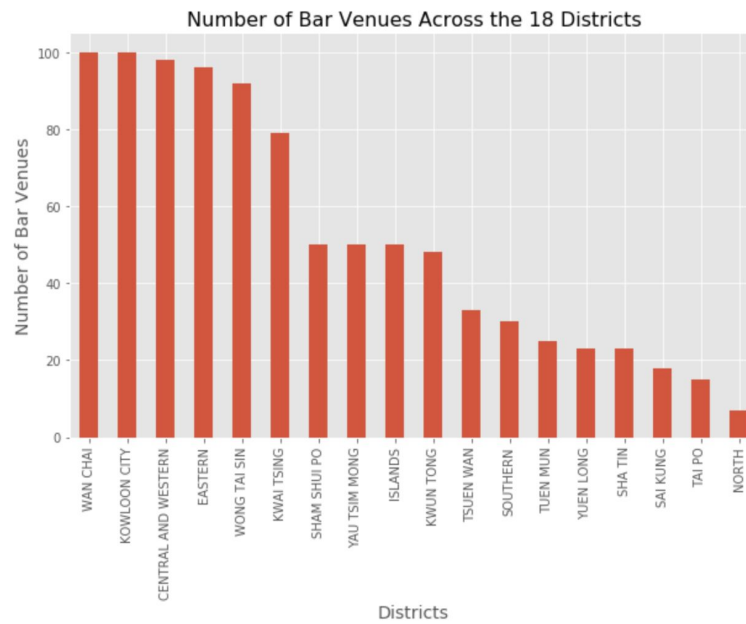

Number of Mexican Restaurants Across the 18 Districts

According to the figure, it seems like Hong Kong Island has the most number of Mexican restaurants, with Wan Chai, Central and Western, Eastern, and Islands Districts taking the top four spots. This makes sense given that Hong Kong Island is the most culturally diverse region in the city. Meanwhile, 13 districts have less than two Mexican restaurants, with 10 having none nearby. All of these 13 districts would be great locations to open a Mexican restaurant as they have little to no competition.

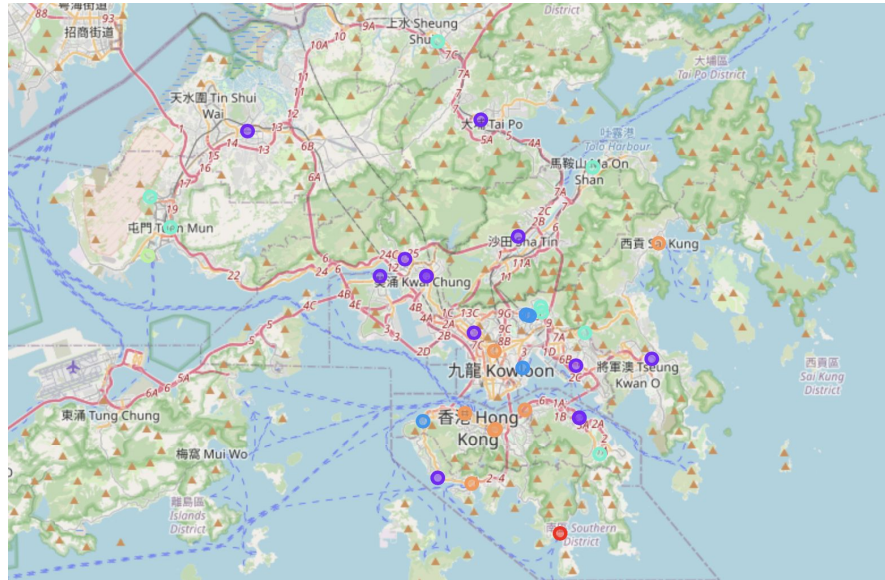**Number of Bars Across the 18 Districts**

   From the figure below, districts in Hong Kong Island and Kowloon have significantly more bar venues in general than New Territories. This would make districts in Kowloon the preliminary prime locations since they tend to have less pre-existing Mexican restaurants but have a decent amount of bar venues in general.

Number of Bar Venues Across the 18 Districts
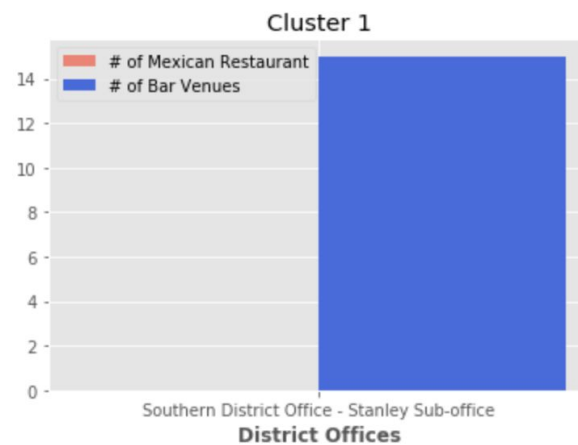
A Map Visualization of the Six Clusters

The following map shows the six clusters classified by the similarity of their eight most common venues within two kilometers of the office's vicinity.

Top 8 Venues + Number of Mexican Restaurants + Number of Bar Venues for Each Office in Each Cluster

Cluster 1 - Beaches and Hangouts

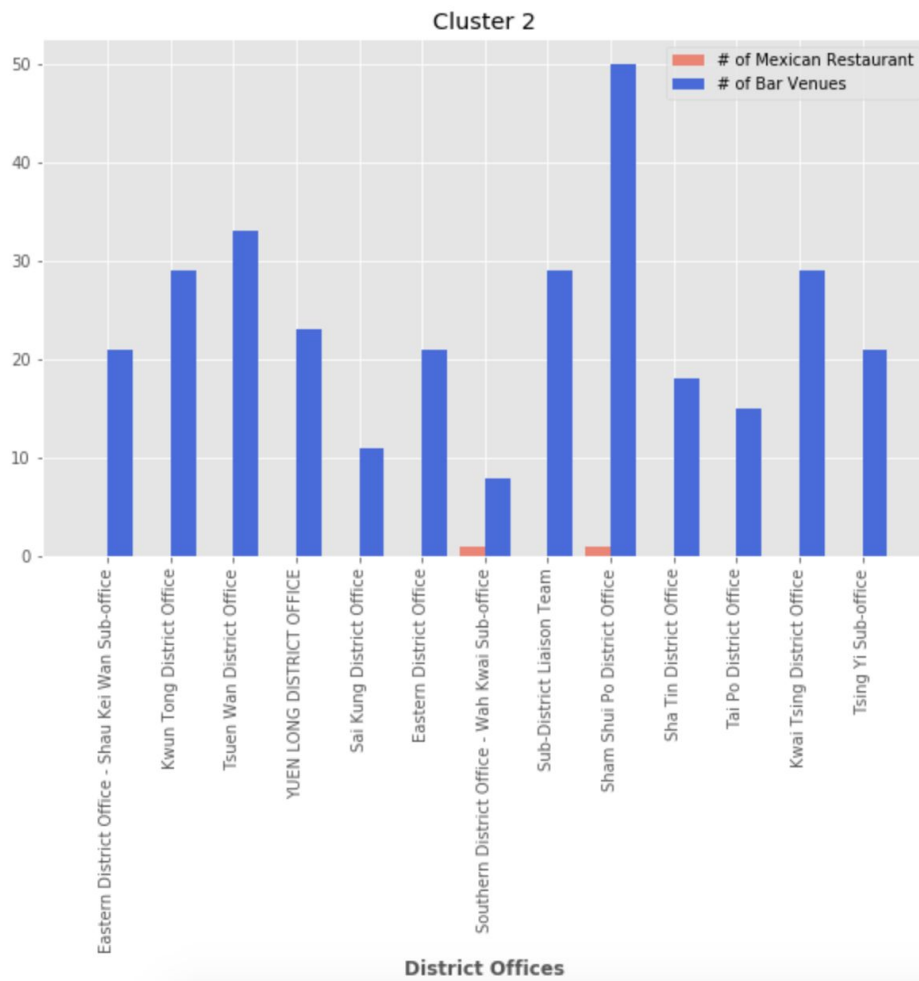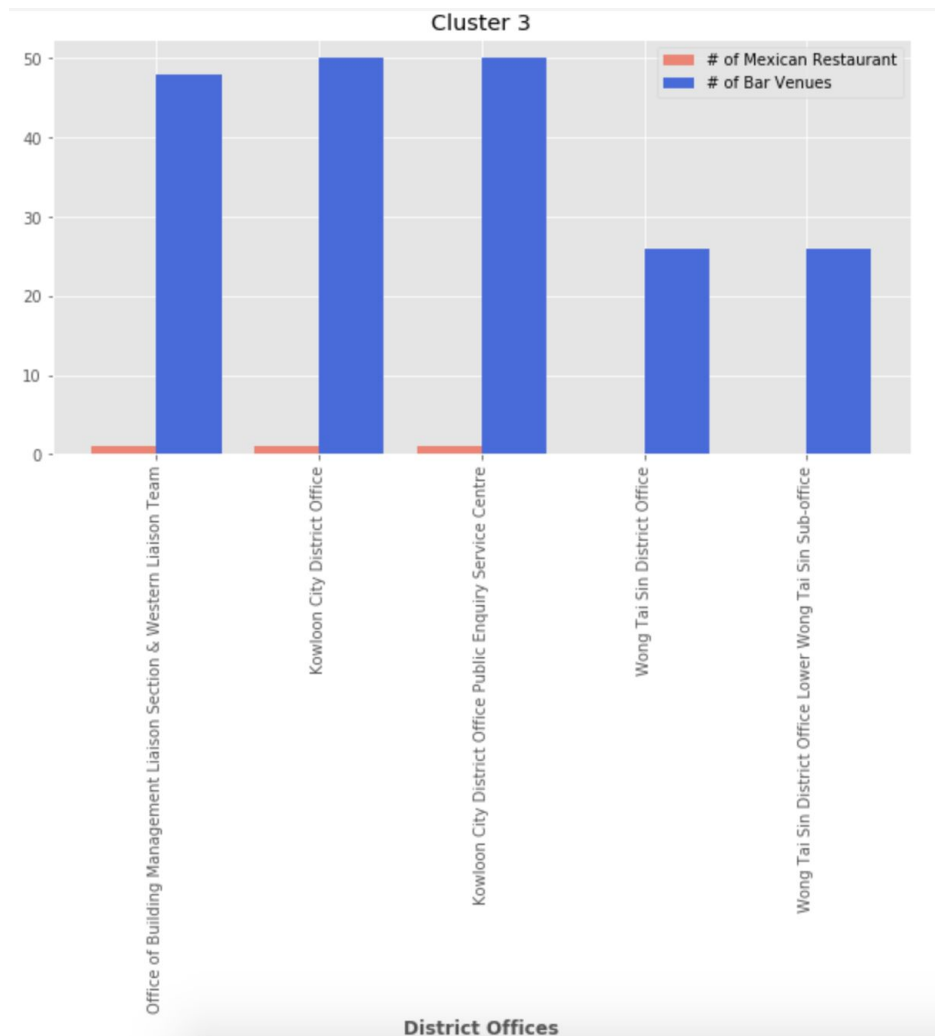|	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
16	Southern District Office - Stanley Sub-office	SOUTHERN	Beach	Surf Spot	Café	Pizza Place	Bar	Coffee Shop	Monument / Landmark	Shanghai Restaurant	0	15

Cluster 2 - Chinese Restaurants, Malls, and Typical Hong Kong Eateries

	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
4	Eastern District Office - Shau Kei Wan Sub-office	EASTERN	Chinese Restaurant	Park	Coffee Shop	Japanese Restaurant	Seafood Restaurant	Café	Department Store	Noodle House	0	21
6	Kwun Tong District Office	KWUN TONG	Chinese Restaurant	Coffee Shop	Café	Park	Shopping Mall	Fast Food Restaurant	Cruise Ship	Sushi Restaurant	0	29
8	Tsuen Wan District Office	TSUEN WAN	Chinese Restaurant	Coffee Shop	Fast Food Restaurant	Shopping Mall	Cha Chaan Teng	Dessert Shop	Noodle House	Cantonese Restaurant	0	33
12	YUEN LONG DISTRICT OFFICE	YUEN LONG	Chinese Restaurant	Fast Food Restaurant	Noodle House	Dessert Shop	Coffee Shop	Japanese Restaurant	Train Station	Shopping Mall	0	23
13	Sai Kung District Office	SAI KUNG	Chinese Restaurant	Fast Food Restaurant	Shopping Mall	Athletics & Sports	Hong Kong Restaurant	Shanghai Restaurant	Hotel	Coffee Shop	0	11
14	Eastern District Office	EASTERN	Chinese Restaurant	Park	Coffee Shop	Japanese Restaurant	Seafood Restaurant	Café	Department Store	Noodle House	0	21
15	Southern District Office - Wah Kwai Sub-office	SOUTHERN	Coffee Shop	Chinese Restaurant	Park	Fast Food Restaurant	Hotel	Shopping Mall	Cantonese Restaurant	Cha Chaan Teng	1	8
18	Sub-District Liaison Team	KWAI TSING	Chinese Restaurant	Shopping Mall	Fast Food Restaurant	Dessert Shop	Cha Chaan Teng	Coffee Shop	Park	Café	0	29
20	Sham Shui Po District Office	SHAM SHUI PO	Chinese Restaurant	Shopping Mall	Noodle House	Dessert Shop	Coffee Shop	Dim Sum Restaurant	Cantonese Restaurant	Cha Chaan Teng	1	50
23	Sha Tin District Office	SHA TIN	Café	Chinese Restaurant	Cantonese Restaurant	Shopping Mall	Coffee Shop	Fast Food Restaurant	Train Station	Hong Kong Restaurant	0	18
25	Tai Po District Office	TAI PO	Chinese Restaurant	Fast Food Restaurant	Cha Chaan Teng	Noodle House	Shopping Mall	Coffee Shop	Athletics & Sports	Hong Kong Restaurant	0	15
27	Kwai Tsing District Office	KWAI TSING	Chinese Restaurant	Shopping Mall	Fast Food Restaurant	Dessert Shop	Cha Chaan Teng	Coffee Shop	Noodle House	Park	0	29
28	Tsing Yi Sub-office	KWAI TSING	Chinese Restaurant	Shopping Mall	Coffee Shop	Park	Noodle House	Cantonese Restaurant	Department Store	Sushi Restaurant	0	21

Cluster 3 - Hotels and Diverse Cuisine

	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
7	Office of Building Management Liaison Section ...	CENTRAL AND WESTERN	Coffee Shop	Park	French Restaurant	Supermarket	Japanese Restaurant	Thai Restaurant	Harbor / Marina	Garden	1	48
10	Kowloon City District Office	KOWLOON CITY	Hotel	Coffee Shop	Chinese Restaurant	Café	Japanese Restaurant	Dessert Shop	Thai Restaurant	Toy / Game Store	1	50
11	Kowloon City District Office Public Enquiry Se...	KOWLOON CITY	Hotel	Coffee Shop	Chinese Restaurant	Café	Japanese Restaurant	Dessert Shop	Thai Restaurant	Toy / Game Store	1	50
31	Wong Tai Sin District Office	WONG TAI SIN	Coffee Shop	Dessert Shop	Thai Restaurant	Café	Japanese Restaurant	Park	Fast Food Restaurant	Noodle House	0	26
32	Wong Tai Sin District Office Lower Wong Tai Si...	WONG TAI SIN	Coffee Shop	Dessert Shop	Thai Restaurant	Fast Food Restaurant	Café	Chinese Restaurant	Asian Restaurant	Noodle House	0	26

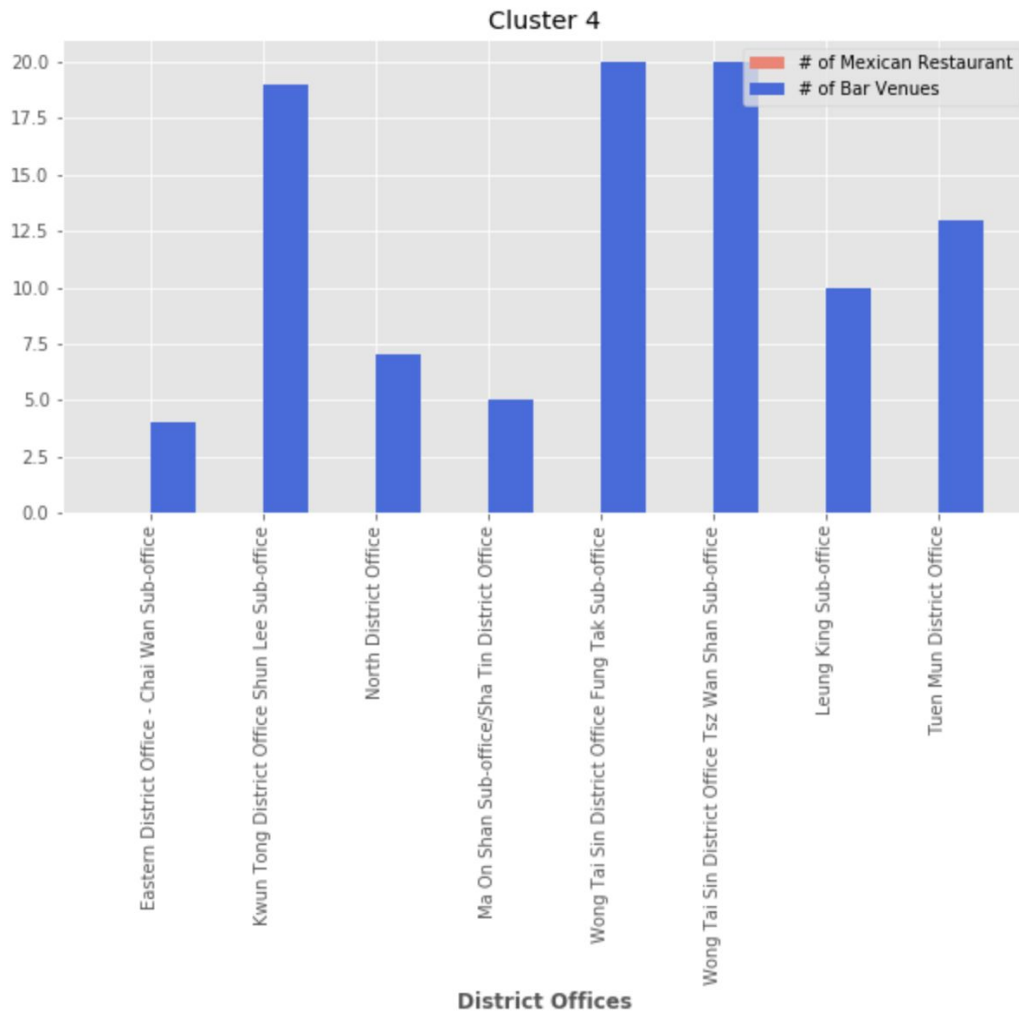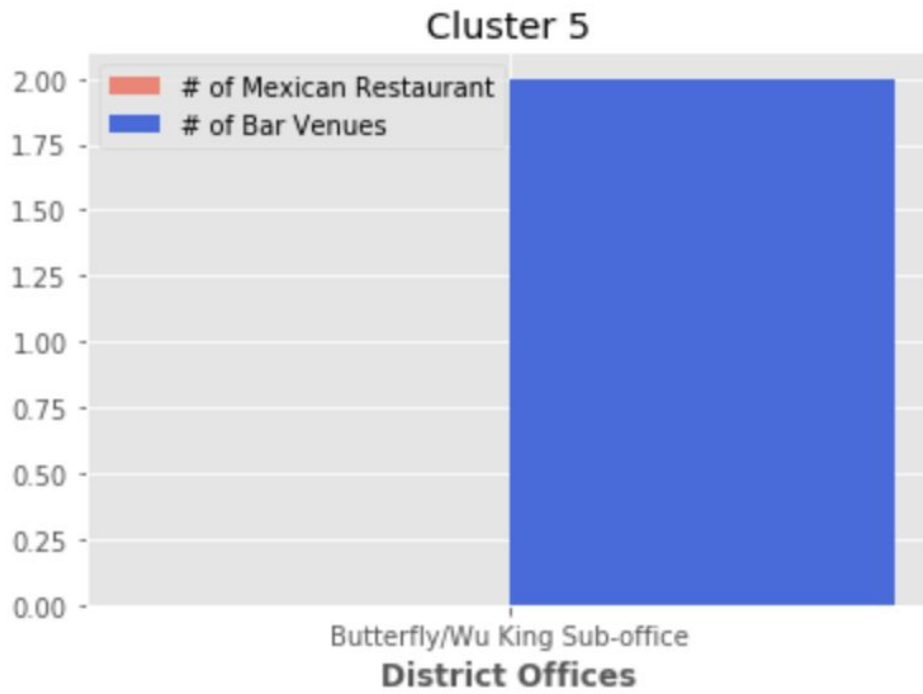## Cluster 4 - Fast Food, Transportation HUb

	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
2	Eastern District Office - Chai Wan Sub-office	EASTERN	Fast Food Restaurant	Noodle House	Cantonese Restaurant	Chinese Restaurant	Coffee Shop	Convenience Store	Cha Chaan Teng	Bus Stop	0	4
5	Kwun Tong District Office Shun Lee Sub-office	KWUN TONG	Fast Food Restaurant	Chinese Restaurant	Shopping Mall	Noodle House	Coffee Shop	Bus Stop	Cantonese Restaurant	Cha Chaan Teng	0	19
19	North District Office	NORTH	Fast Food Restaurant	Chinese Restaurant	Coffee Shop	Shopping Mall	Park	Gas Station	Bus Station	Noodle House	0	7
24	Ma On Shan Sub-office/Sha Tin District Office	SHA TIN	Shopping Mall	Park	Café	Fast Food Restaurant	Coffee Shop	Chinese Restaurant	Dessert Shop	Train Station	0	5
29	Wong Tai Sin District Office Fung Tak Sub-office	WONG TAI SIN	Fast Food Restaurant	Coffee Shop	Thai Restaurant	Chinese Restaurant	Dessert Shop	Park	Hotel	Department Store	0	20
30	Wong Tai Sin District Office Tsz Wan Shan Sub-...	WONG TAI SIN	Fast Food Restaurant	Coffee Shop	Chinese Restaurant	Park	Hotel	Shopping Mall	Trail	Noodle House	0	20
34	Leung King Sub-office	TUEN MUN	Fast Food Restaurant	Light Rail Station	Shopping Mall	Multiplex	Cha Chaan Teng	Hong Kong Restaurant	Coffee Shop	Market	0	10
35	Tuen Mun District Office	TUEN MUN	Seafood Restaurant	Light Rail Station	Fast Food Restaurant	Coffee Shop	Shopping Mall	Shanghai Restaurant	Cantonese Restaurant	Multiplex	0	13

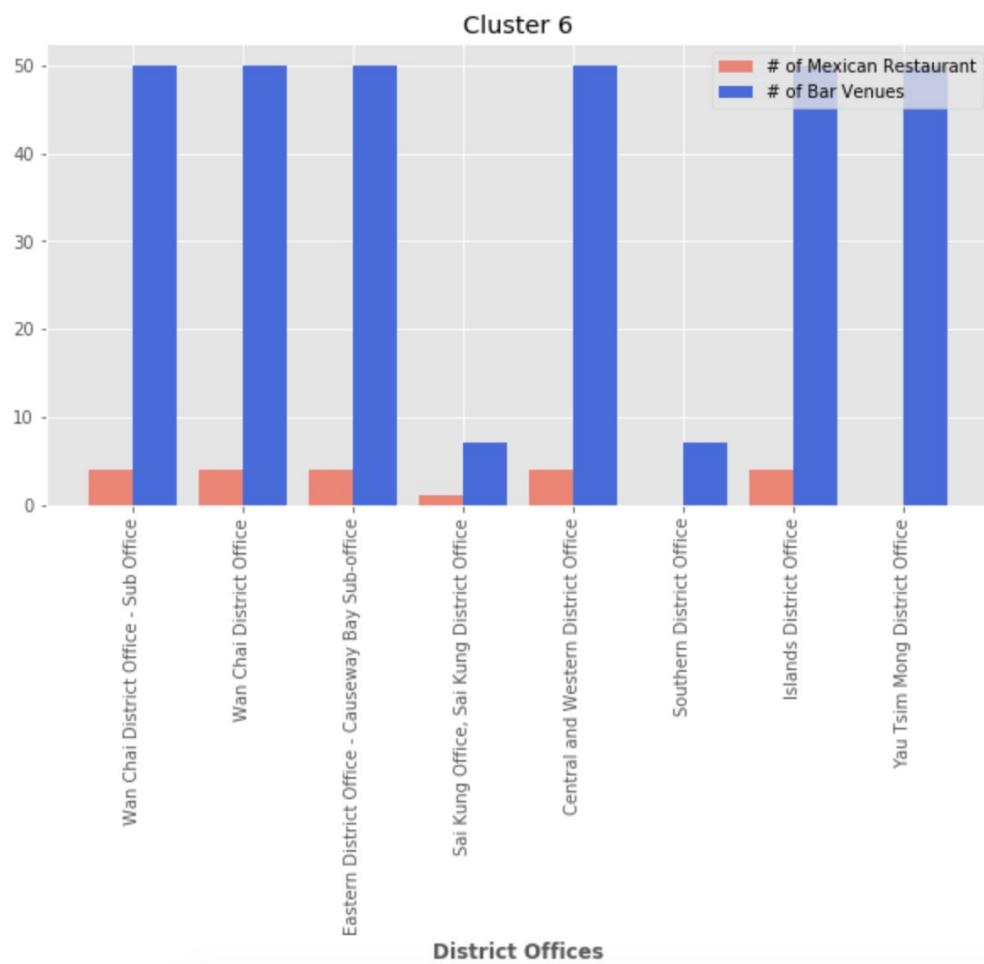|	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
33	Butterfly/Wu King Sub-office	TUEN MUN	Seafood Restaurant	Fast Food Restaurant	Shopping Mall	Chinese Restaurant	Cha Chaan Teng	Taiwanese Restaurant	Market	Harbor / Marina	0	2

Cluster 4

Cluster 5 - Chinese-leaning eateries

	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
33	Butterfly/Wu King Sub-office	TUEN MUN	Seafood Restaurant	Fast Food Restaurant	Shopping Mall	Chinese Restaurant	Cha Chaan Teng	Taiwanese Restaurant	Market	Harbor / Marina	0	2

Cluster 6 - Cafes and Diverse Cuisine

	Office Name	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	# of Mexican Restaurant	# of Bar Venues
0	Wan Chai District Office - Sub Office	WAN CHAI	Café	Hotel	Coffee Shop	Cantonese Restaurant	Vietnamese Restaurant	Supermarket	Clothing Store	Burger Joint	4	50
1	Wan Chai District Office	WAN CHAI	Café	Hotel	Cantonese Restaurant	Coffee Shop	Bakery	Japanese Restaurant	Vietnamese Restaurant	Clothing Store	4	50
3	Eastern District Office - Causeway Bay Sub-office	EASTERN	Hotel	Chinese Restaurant	Dessert Shop	Coffee Shop	Japanese Restaurant	Sushi Restaurant	Cha Chaan Teng	Noodle House	4	50
9	Sai Kung Office, Sai Kung District Office	SAI KUNG	Seafood Restaurant	Thai Restaurant	Café	Chinese Restaurant	BBQ Joint	Pizza Place	Pub	Dessert Shop	1	7
17	Central and Western District Office	CENTRAL AND WESTERN	Japanese Restaurant	Coffee Shop	Café	Hotel	Italian Restaurant	Bakery	Cantonese Restaurant	Restaurant	4	50
21	Southern District Office	SOUTHERN	Theme Park Ride / Attraction	Café	Park	Hotel	Fast Food Restaurant	Chinese Restaurant	Coffee Shop	Restaurant	0	7
22	Islands District Office	ISLANDS	Japanese Restaurant	Coffee Shop	Café	Hotel	Italian Restaurant	Bakery	Cantonese Restaurant	Restaurant	4	50
26	Yau Tsim Mong District Office	YAU TSIM MONG	Coffee Shop	Café	Dim Sum Restaurant	Snack Place	Cha Chaan Teng	Noodle House	Malay Restaurant	Chinese Restaurant	0	50

Discussion

The 36 district offices and sub-offices have been classified into six clusters based on the similarity of their nearby surroundings using the k-means clustering technique. To be considered a prime location, the offices should have the least amount of pre-existing Mexican restaurants to reduce competitions, but also the most dynamic and vibrant nightlife alongside entertainment venues to reap the benefit of high foot traffic and crowds that are looking to dine out.

According to the preliminary scans, Kowloon seems to be the most desirable of the three major regions of Hong Kong. When analyzing the number of Mexican Restaurants established across the 18 districts, Hong Kong Island holds the most Mexican restaurants despite being substantially smaller than the other two regions. That can be attributed to Hong Kong Island's culturally diverse nature, as most foreign ex-pats tend to work and reside in this region. On the other hand, Kowloon does have more Mexican Restaurants established in the region, however, the difference is not significant. As for the number of bars across the 18 District, Hong Kong Island once again came out on top. However, Kowloon is also closely behind, which also makes it a vibrant region suitable for opening restaurants. New Territories falls behind significantly in this category. Taking into account the two major factors, Kowloon surfaced as the front-runner initially due to having a small presence of pre-existing Mexican restaurants, while also offering a great bar scene perfect for Mexican cuisines.

Upon the initial scanning, we move onto the district office / sub-office level, which yields a more proportional and fair representation of Hong Kong's neighborhoods. Of the six clusters, two of them (**clusters 1 and 5**) only contain one office. The office in the first cluster is located in a relatively outlying area of the city, where most people go there for beaches and more sporty adventures. The office in cluster five is located in a very local and traditional region filled with a mix of Chinese cuisines. It is not usually a place where tourists or locals will go to spend time. Both clusters can be crossed off the list as prime locations since neither attracts the right crowd nor has a vibrant nightlife.

Of the four remaining clusters, **cluster 6** stands out as having the most amount of Mexican Restaurants by far. Most of the offices in this cluster are located in Hong Kong Island and are surrounded by a more upscale environment with hotels, cafes, and dessert shops. Due to the high pre-existing presence of Mexican restaurants nearby, cluster 6 might not be the best location due to its inherent high competition.

Cluster 2, 3, and 4 are rather similar, with little to no pre-established Mexican restaurants, and have a decent number of bars nearby. **Cluster 4** does fall short on the number of bars nearby. It is also surrounded by transportation hubs and fast-food restaurants, which tend to attract more fast-paced commuters rather than residents or tourists who are trying to spend time enjoying themselves.

Between Cluster 2 and 3, both are recommendable options to start up a new Mexican

restaurant, for reasons mentioned in the previous paragraph. However, **cluster 2** does skew more towards traditional Hong Kong every-day lifestyle, with Chinese restaurants, malls, and other Hong Kong eateries as the most common venues. Hence, after taking into consideration the key factors, I would recommend **cluster 3** as the prime cluster for potential entrepreneurs in starting up a new Mexican restaurant.

There are five offices in cluster 3 across Hong Kong Island and Kowloon. Three districts were represented in this cluster, with two offices in Kowloon City, two offices in Wong Tai Sin, and one in the Central and Western District. All of the districts have either one or no pre-established Mexican restaurants in the area, while the cluster also has the highest average number of bar venues, ranging from 26 and 50 (maxed out) for each district office. Meanwhile, the cluster does have an eclectic mix of cuisines, from European, Japanese, Thai to other fast-food restaurants and dessert shops. Although no entertainment venue has made it to the most common venues in any of the clusters, based on the results we've obtained, cluster three do have the most diverse scene that is likely to attract people who would want to spend time and explore different cuisines.

Conclusion

In the study, I've analyzed the characteristics of the 18 districts in Hong Kong as well as the 36 district offices and sub-offices within, in order to select the prime locations in the city for future Mexican restaurant owners. Two of the key factors in determining a prime location is a low presence of pre-existing Mexican restaurants, as well as a high number of nightlife venues nearby. After conducting an initial scan on these two factors, Kowloon fitted the description best out of Hong Kong's three main regions.

To further analyze and select the best locations more specifically, I've divided the 36 district offices and sub-offices into six clusters based on the similarity of the nearby venues. After a process of elimination, cluster 3 came out as the most suitable cluster for potential Mexican restaurant owners. Cluster 2 and 4 however, do come close as the next best options.

The study, however, does have its limitations. Foursquare database seemed to have a bias towards Hong Kong Island, and have relatively fewer location data for New Territories, despite Hong Kong Island being the smallest region. If this notion holds true, it could definitely impact my final recommendations since the results are contingent upon the weight of these location data (i.e. number of Mexican restaurants and bar venues nearby). The study has also neglected the importance of rent since certain neighborhoods in Hong Kong do have exorbitantly high rental prices. However, I struggled to find a dataset that would provide relevant data that could fit my analysis. To improve upon this study in the future, researchers can look for more comprehensive location dataset that could give a more fair representation to the entirety of Hong Kong, as well as merging additional datasets that could provide more relevant features for the final recommendations such as the average rental cost in each district, etc.