

FIND THE BEST LOCATION FOR OPENING A RESTAURANT IN HONG KONG ISLAND

DEC 2020

Final assignment for the Capstone project

Hong Kong

- East of Asia with a mixture of Asian and Western culture
- High density of restaurants (around 15,000 QTY and 20.4 restaurants per 10,000 people!)
- Hong Kong Island is one of most popular region within Hong Kong

Introduction



Audience:

- Anyone who has an interest in opening a restaurant in Hong Kong!



Photo: Duddell's

Objective

Finding a best location for opening a restaurant in Hong Kong and decide on the cuisine with high potential.



Data...

Data Description

- List of different districts of Hong Kong Island
- Latitude & Longitude coordinates
- Venue information (name, address, category and coordinates)

Data Source

- Google and Wikipedia
- FourSquare API
- Geocoder ArcGIS



Methodology

- **Web scraping** - collecting data required
- **data wrangling/cleaning** - modify data in the correct format/ level of information for easier manipulation
- **Folium** - displaying map with markers and labels
- **Word cloud**
- **Geocoder API** - locating the coordinates of any address
- **FourSquare API** - finding out all the venue information via JSON format using certain parameters (limits:100; radius = 2km)
- **K-Means clustering** - dissecting restaurant data into clusters
- **bar chart and line graph** - Just showing simple frequency or difference of certain data!



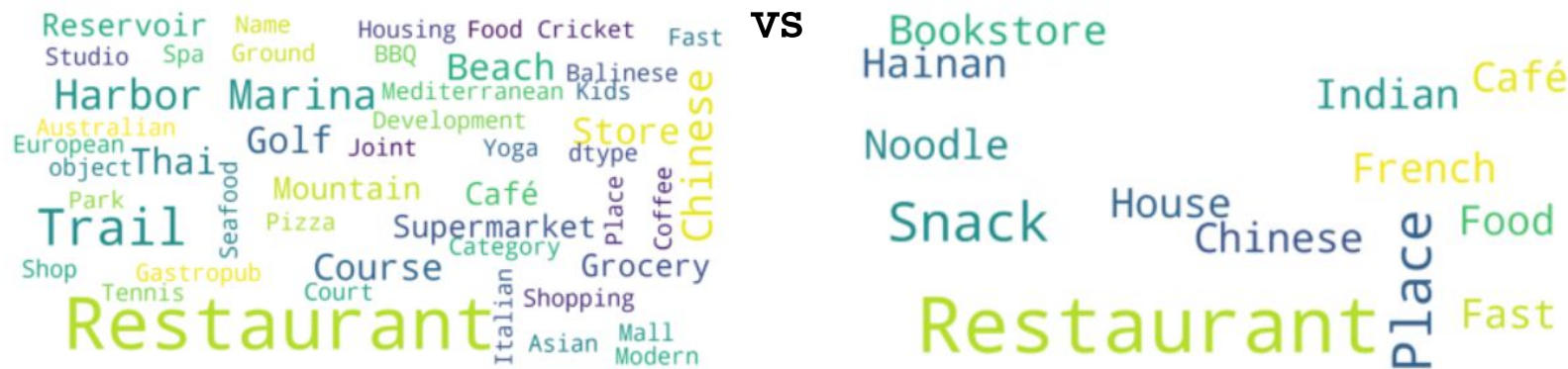
Result

- From the Web scraping we know that there are 4 regions in Hong Kong Island - Central & Western (C&W) , Eastern, Southern and Wan Chai (WC) District.
- According to Geocoder, the latitude & longitude are:
- They are located on Hong Kong island in the following
- There are about 16 neighborhoods within the 4 districts.

	District	Region	geo_address	Latitude	Longitude
0	Central and Western	Hong Kong Island	Central and Western,Hong Kong Island	22.281829	114.158278
1	Eastern	Hong Kong Island	Eastern,Hong Kong Island	22.283121	114.224180
2	Southern	Hong Kong Island	Southern,Hong Kong Island	22.243200	114.197400
3	Wan Chai	Hong Kong Island	Wan Chai,Hong Kong Island	22.279015	114.172483



- C&W, Eastern and WC districts are very busy district with over 100 venues returned from the FourSquare API while Southern districts only have 56.
- Nonetheless Southern District has more varieties of venue category and are well supported by the word cloud (left: Southern & right: C&W District)



- There are around 28 Restaurant categories from the FourSquare API after data cleaning.



Top 5 cuisines...

of the 4 districts:

	District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Central & Western	Japanese Restaurant	Italian Restaurant	Cantonese Restaurant	Thai Restaurant	Chinese Restaurant
1	Eastern	Chinese Restaurant	Japanese Restaurant	Seafood Restaurant	French Restaurant	Cantonese Restaurant
2	Southern	Chinese Restaurant	Thai Restaurant	Restaurant	Italian Restaurant	Mediterranean Restaurant
3	Wan Chai	Japanese Restaurant	Chinese Restaurant	Italian Restaurant	Thai Restaurant	Middle Eastern Restaurant

of the neighborhoods

(see report for all 16 neighborhoods detail)

----Central----

	venue	freq
0	Chinese Restaurant	0.30
1	Italian Restaurant	0.17
2	Japanese Restaurant	0.13
3	Thai Restaurant	0.07
4	French Restaurant	0.07

----Admiralty----

	venue	freq
0	Chinese Restaurant	1.0
1	American Restaurant	0.0
2	Mediterranean Restaurant	0.0
3	Vegetarian / Vegan Restaurant	0.0
4	Thai Restaurant	0.0

----Deep Water Bay----

	venue	freq
0	Thai Restaurant	0.4
1	Chinese Restaurant	0.2
2	Fast Food Restaurant	0.2
3	Modern European Restaurant	0.2
4	American Restaurant	0.0

----Chai Wan----

	venue	freq
0	Fast Food Restaurant	1.0
1	American Restaurant	0.0
2	Mediterranean Restaurant	0.0
3	Vegetarian / Vegan Restaurant	0.0
4	Thai Restaurant	0.0

----Causeway Bay----

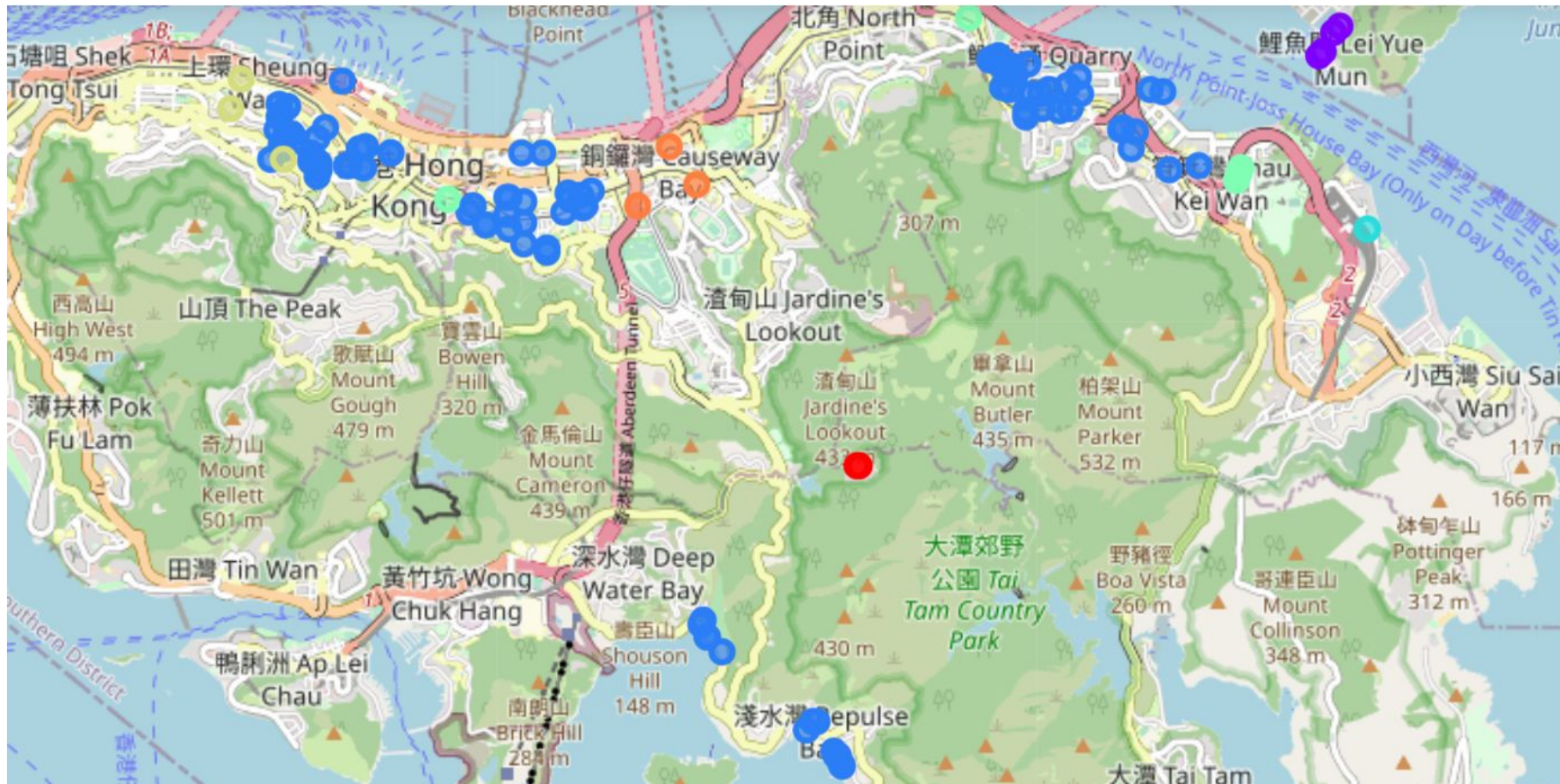
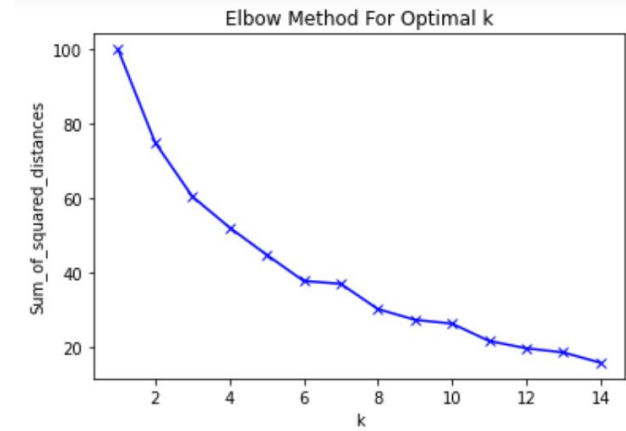
	venue	freq
0	Vietnamese Restaurant	0.33
1	Taiwanese Restaurant	0.33
2	Japanese Restaurant	0.33
3	Mediterranean Restaurant	0.00
4	Vegetarian / Vegan Restaurant	0.00

----Lei Yue Mun----

	venue	freq
0	Seafood Restaurant	1.0
1	American Restaurant	0.0
2	Mediterranean Restaurant	0.0
3	Vegetarian / Vegan Restaurant	0.0
4	Thai Restaurant	0.0



K-means Clustering



Clusters

Form by which neighborhoods?

7 Clusters!

- Cluster 0
 - Cluster 1
 - Cluster 2
 - Cluster 3
 - Cluster 4
 - Cluster 5
 - Cluster 6
- 0 - Tai Tarm
 - 1 - Lei Yue Mun & Yau Tong
 - 2 - Central & Wan Chai
 - 3 - Chai Wan
 - 4 - North Point, Shau Kei Wan, and Admiralty
 - 5 - Sheung Wan
 - 6 - Causeway Bay

Dominated by what type of restaurants?

- 0 - Chinese Restaurants
- 1 - Seafood restaurants
- 2 - Chinese restaurant
- 3 - Fast food restaurants
- 4 - Chinese restaurants)
- 5 - Seafood restaurants)
- 6 - Vietnamese restaurants)



Ask yourself:

What is the atmosphere you want your restaurant to represent?

Which kind of customers are you aiming for?

What is your budget?

- Geographically Southern Districts are surrounded by famous beaches and different varieties of venue category hence the location vibe are different than C&W, Eastern & WC
- Chinese & Japanese are the favourite cuisine in Hong Kong Island as they occupy most of the top 3 position within the 16 neighborhoods!
- The restaurants are highly concentrated in the C&W and WC districts so huge competition
- General rental price for C&W and WC districts are higher compared to Eastern/ Southern districts

Discussion

- Southern (leisure-focused) vs other 3 districts (commercial & residential)
- Chinese or Japanese Cuisine (most popular! Fusion maybe?)
- Other factors to consider such as economy, more data required...



Conclusion

- Opening a Chinese or Japanese restaurants will be more well received in Hong Kong
- The desired restaurant vibe or atmosphere may determine the location - for less competitive and more relaxed location then Southern district is the choice to go with.
- Other factors should be considered during the decision process as the value for restaurants is depleting by 50% since 2015!

