

Starting a Restaurant in Hong Kong:

A Data Analysis Perspective

Capstone Project: The Battle of Neighborhoods

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1. Introduction/Business Problem

Hong Kong is a food paradise with wide-ranging cuisine from different parts of the world. Starting restaurants is one of the most popular businesses in Hong Kong because of its large market size. Both tourists and local customers are willing to pay for a wonderful dining experience. While a restaurant business is potentially profitable, restaurant owners also face challenges including high rent and keen competition. It is therefore important to consider different factors such as rent, potential competitors, and customers in choosing a restaurant location. With the use of data analysis, this report addresses the following business question: How can we choose a suitable location for opening a restaurant in Hong Kong?

2. Data

The following data are used in this report:

a) Restaurants in districts of Hong Kong:

Source: Foursquare location data

Description: With Foursquare API, the locations and types of different Hong Kong restaurants are searched to provide useful insights on the potential competitors.

b) Information of districts of Hong Kong:

Source: https://en.wikipedia.org/wiki/Districts_of_Hong_Kong

Description: From the web page, information, including population density and area of each district, is obtained to provide important information on the potential customers.

3. Methodology

3.1 District information

a) Data Preparation

First, information, including population density and area of each

district is obtained from Wikipedia. Data is transformed into an dataframe through using pandas. The dataframe is further organized as below:

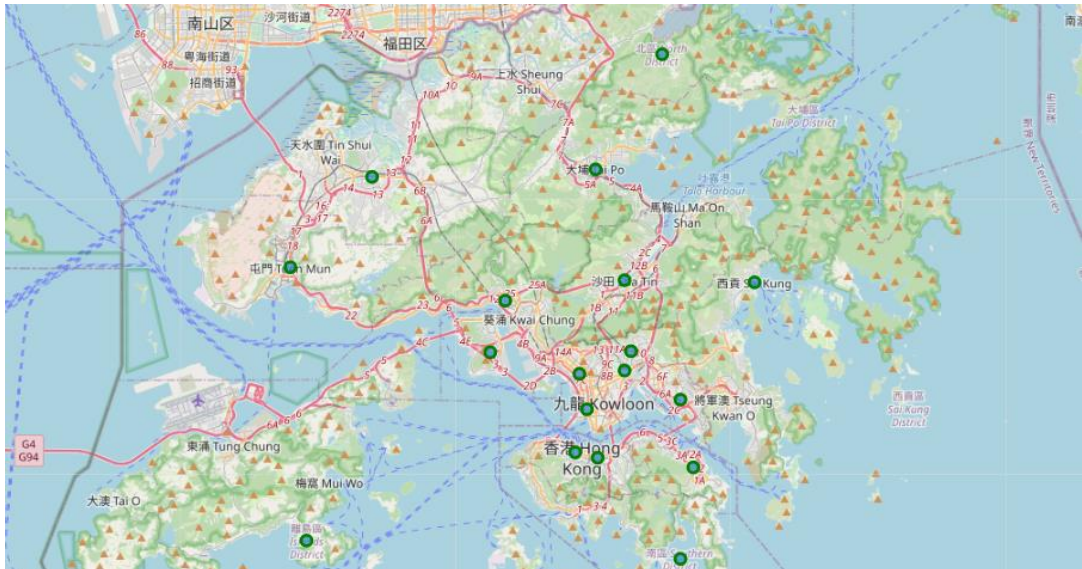
	District	Population	Density(/km2)	Region	Area(km2)
0	Central and Western	243266	19391	Hong Kong Island	12.44
1	Eastern	555034	30861	Hong Kong Island	18.56
2	Southern	274994	7080	Hong Kong Island	38.85
3	Wan Chai	180123	17137	Hong Kong Island	9.83
5	Sham Shui Po	405869	43381	Kowloon	9.35
6	Kowloon City	418732	41802	Kowloon	10.02
7	Kwun Tong	648541	57530	Kowloon	11.27
8	Wong Tai Sin	425235	45711	Kowloon	9.30
9	Yau Tsim Mong	342970	49046	Kowloon	6.99
11	Islands	156801	886	New Territories	175.12
12	Kwai Tsing	520572	22307	New Territories	23.34
13	North	315270	2310	New Territories	136.61
14	Sai Kung	461864	3563	New Territories	129.65
15	Sha Tin	659794	9602	New Territories	68.71
16	Tai Po	303926	2233	New Territories	136.15
17	Tsuen Wan	318916	5149	New Territories	61.71
18	Tuen Mun	489299	5894	New Territories	82.89
19	Yuen Long	607200	4435	New Territories	138.46

Second, the latitude and longitude of each district I obtained using Geopy.

	District	Population	Density(/km2)	Region	Area(km2)	Latitude	Longitude
0	Central and Western	243266	19391	Hong Kong Island	12.44	22.281938	114.158076
1	Eastern District	555034	30861	Hong Kong Island	18.56	22.273078	114.233594
2	Southern District	274994	7080	Hong Kong Island	38.85	22.219263	114.225230
3	Wan Chai	180123	17137	Hong Kong Island	9.83	22.279015	114.172483
5	Sham Shui Po	405869	43381	Kowloon	9.35	22.328190	114.160854
6	Kowloon City	418732	41802	Kowloon	10.02	22.330160	114.189937
7	Kwun Tong	648541	57530	Kowloon	11.27	22.312937	114.225610
8	Wong Tai Sin	425235	45711	Kowloon	9.30	22.341654	114.193859
9	Yau Tsim Mong	342970	49046	Kowloon	6.99	22.307404	114.165526
11	Islands District	156801	886	New Territories	175.12	22.230076	113.986785
12	Kwai Tsing	520572	22307	New Territories	23.34	22.341012	114.104285
13	North District	315270	2310	New Territories	136.61	22.516949	114.213593
14	Sai Kung	461864	3563	New Territories	129.65	22.382249	114.272828
15	Sha Tin	659794	9602	New Territories	68.71	22.383557	114.189985
16	Tai Po	303926	2233	New Territories	136.15	22.449402	114.171133
17	Tsuen Wan	318916	5149	New Territories	61.71	22.371661	114.113470
18	Tuen Mun	489299	5894	New Territories	82.89	22.391216	113.976282
19	Yuen Long	607200	4435	New Territories	138.46	22.444490	114.028764

b) Visualization

For easier observation, the major districts in Hong Kong is visualized in the following map using Folium.



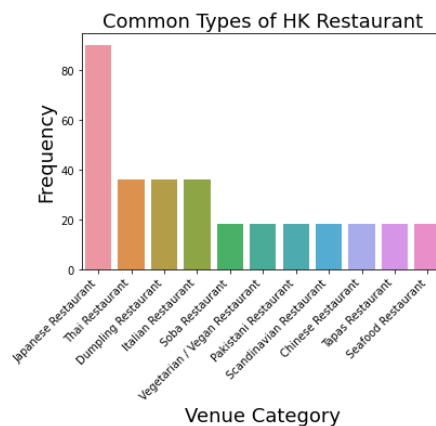
3.2 Restaurant information

By using Foursquare Location Data, restaurant information in Hong Kong is obtained. To provide insights on which types of restaurants are popular, the number of different restaurants in restaurant is obtained and visualized in a bar chart. Besides, popular restaurants are visualized on the map of Hong Kong. Moreover, K-mean clustering is used to create clusters based on the types of restaurants. This provides useful information on possible locations of the restaurant.

4. Results

The results are summarized as follows:

Fig. 4.1 Common Types of Hong Kong Restaurants



A map of Hong Kong and surrounding areas, including Shenzhen and Nansao Sub-district. The map shows the locations of 15 red dots, which represent the study sites. The dots are distributed across the New Territories, Kowloon, and Hong Kong Island. Labels on the map include: BAO'AN DISTRICT, NANSHAN DISTRICT, SHENZHEN, YANTIAN DISTRICT, Nansao Sub-district, Tung Chung, Mui Wo, Tai O, HONG KONG, and KOWLOON. The red dots are located in various parts of the map, including the New Territories, Kowloon, and Hong Kong Island.

From the result, it can be seen the Japanese Restaurant is the most popular restaurant in Hong Kong. While this can be viewed as an indicator of a large number of potential competitors, it probably also means that Japanese food is popular in Hong Kong. Therefore, it may be desirable to start a Japanese restaurant in places with few similar restaurants around. For location, it is observed that many restaurants are concentrated in Kowloon areas. This is not surprising given the high population density there. Starting a restaurant there may be

desirable only if you can come up with special cuisines that can help you win over other competitors.

6. Conclusion

With the use of data analysis techniques, this study analyzes some key information about opening a restaurant in Hong Kong. Popular types and locations of restaurants are analyzed. However, one key limitation of this study is that it does not analyze the rents in different areas, which is probably one of the most important costs for running a restaurant in Hong Kong.