



DESSERT SHOP LOCATION SELECTION

ABSTRACT

Selecting a location for a dessert shop in Hong Kong

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1. Introduction

After having a successful career as marketing and sales executive in various organizations, a happily married housewife with 2 kids has finally decided to fulfill her dream of opening a dessert shop to share her well-liked desserts to the world.

Karen was born in Hong Kong. She moved to Shanghai with her husband in 2004. Her favor desserts are cheesecake and apple pie. Karen tried many of them in Shanghai but could not find one that she liked. She started making them herself with different recipes available online and eventually came up with some that were well received by her families and friends. A lot of them encouraged her to open her own shop.

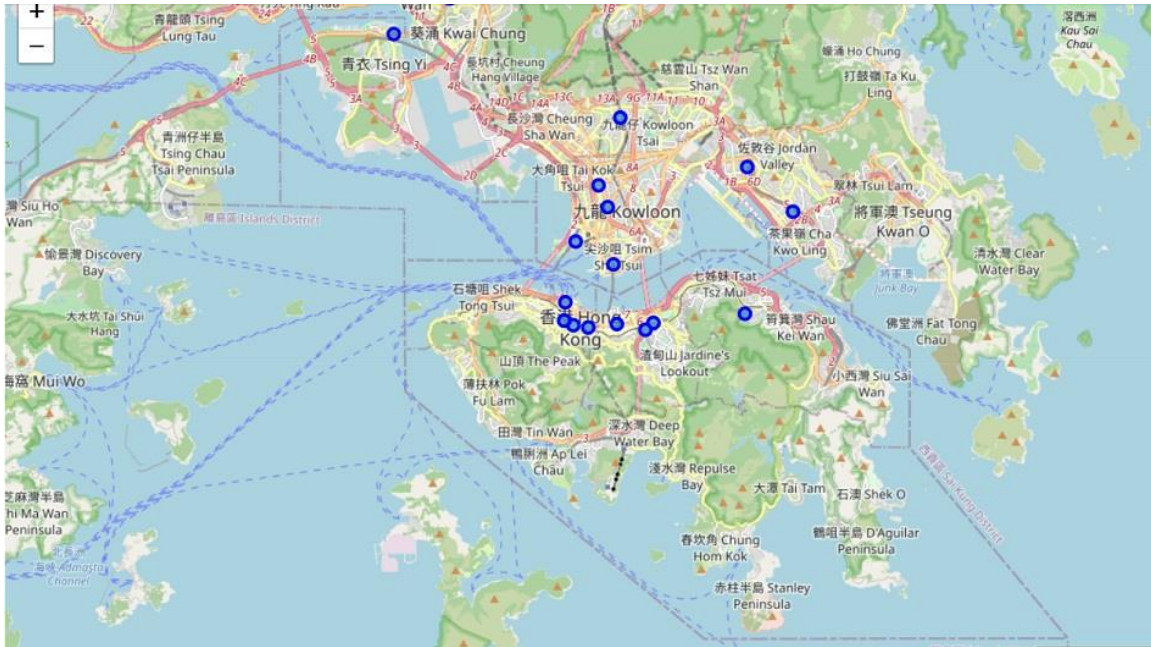
With her kids going to the US for studies, Karen is now planning to move back to Hong Kong. She decides to open a dessert shop to let other try her recipes. Karen knows Hong Kong very well and understands the competition will be very tough. However, she has confident on her recipes. She would like some help on finding a location for her shop to maximize her chance of success.

2. Data for Analysis

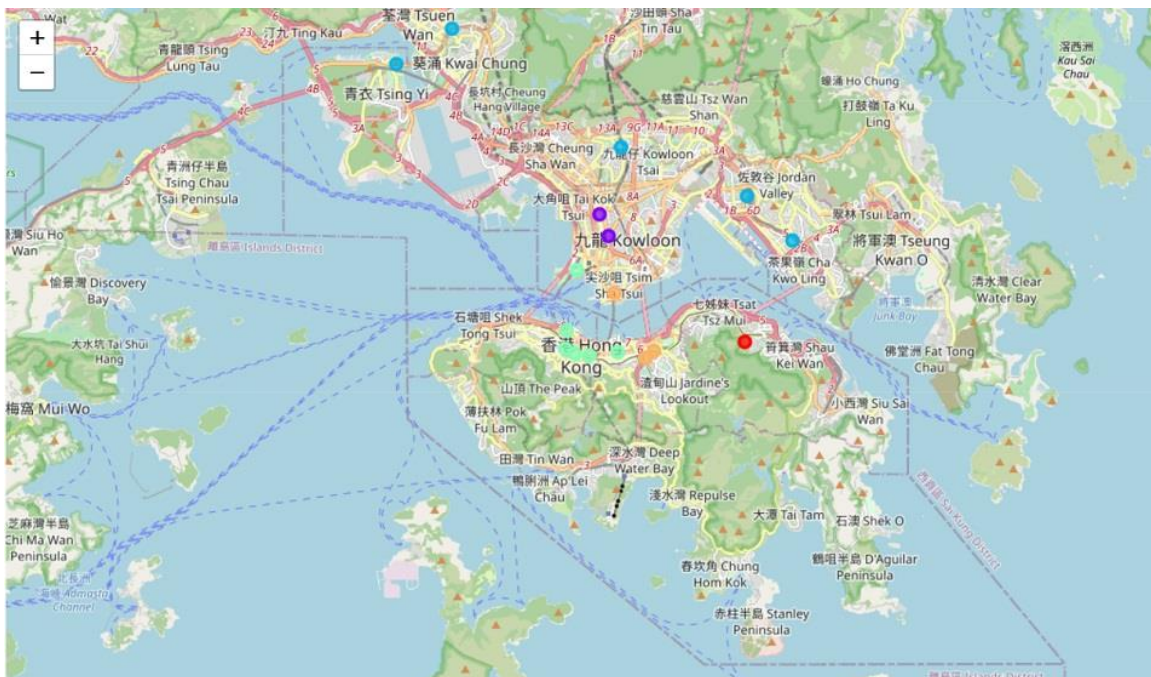
To assist Karen on her problem, we used location data from Foursquare to do some analysis for her. We used k-means to cluster these neighborhoods to see if there are any similarities among them. We then evaluated each neighborhood based on ability to attract large crowd of people such as shopping malls, park, train station, etc. and then selected a few potential neighborhoods for her. We also looked at the number of dessert shops in each of them and selected one with the minimal number of dessert shops to minimize the competition. We also considered the rental costs to make sure we selected the most cost-effective location.

3. Methodology

After Karen provided the 17 neighborhoods that she is interested in, I used the website <http://gps-latitude-longitude.com/address-to-longitude-latitude-gps-coordinates> to get the coordinates of landmarks in those neighborhoods. I then put all this geographical information into a CSV file. I read in the file to my Jupyter notebook and drew a map of Hong Kong with markers for those landmarks.



I used Foursquare API to get venues around the landmarks. I set the radius of 500m and limit the number of results to 100. The API came back with 1,067 entries with 178 unique categories. I then looked at the top 10 most common venues near each of the landmark and used k-means to see if there are some similarities among these neighborhoods. The results are shown below.

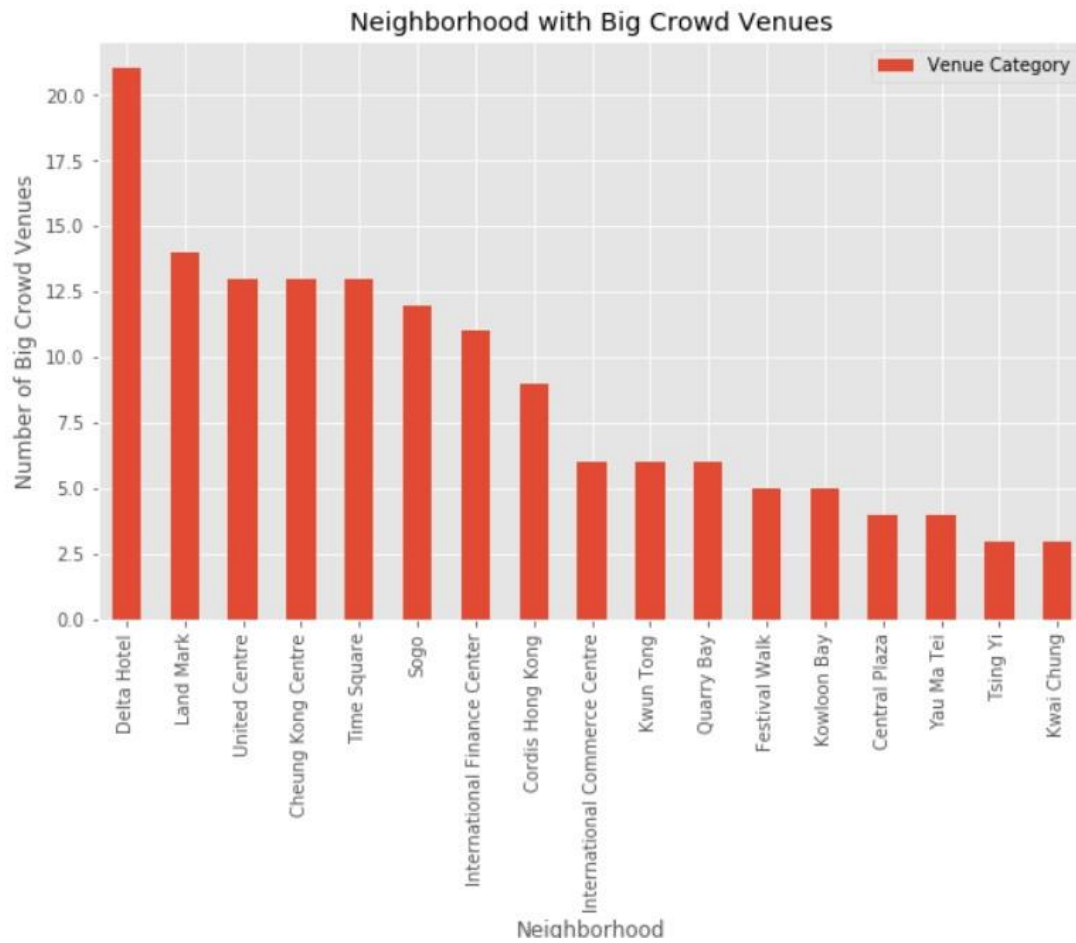


The above map showed clear similarities based on location. For example, neighborhoods in red or light blue color are farther away from city center. There are also similarities for neighborhood on the west side of Hong Kong island.

From studying the categories returned by Foursquare, I selected the below categories as the ones that would drive big crowd.

- Hotel
- Gym / Fitness Center
- Zoo
- Park
- Gym
- Supermarket
- Shopping Mall
- Department Store
- Sports Club
- Metro Station
- Skating Rink
- Farmers Market
- Mountain
- Trail
- Monument / Landmark
- Performing Arts Venue
- Historic Site
- Train Station
- Scenic Lookout
- Pier

I removed all entries not belonged to the above venues. I then plotted a bar chart to look at how many big crowd venues in each neighborhood. The top three are Delta Hotel, Land Mark, and United Centre.



I then looked at the number of Dessert Shop in these three neighborhoods.

	Neighborhood	Venue Category
0	Delta Hotel	1
1	Land Mark	1
2	United Centre	1
3	Yau Ma Tei	1
4	Festival Walk	2
5	International Finance Center	2
6	Kowloon Bay	2
7	Kwai Chung	2
8	Time Square	2
9	Sogo	3
10	Cordis Hong Kong	4

The neighborhoods with least competition are also Delta Hotel, Land Mark and United Centre.

4. Recommendation

The about results showed that Delta Hotel has the highest number(21) of big crowd venues with least number (1) of competition. Land Mark has 14 big crowd venues with 1 competition. United Centre has 13 big crowd venues with 1 competition.

One of the most important criteria for selecting a location is the rental price, as it usually is the largest expense. I tried to find the average rental price for the three locations selected. However, that information is not available. The only thing close to it is the average retail rental price for three large districts provided by the Hong Kong Government (http://rwd.gov.hk/en/property_market_statistics/index.html). From looking at the file "Privat Retail-Average Rents and Prices (from 1989)", Delta Hotel is in the district having an average price of HK\$1,009/m². Land Mark and United Centre are in the district having an average a price of HK\$1,633/m². This further justify the selection of opening a shop near Delta Hotel.

The map with the three selected locations highlighted is shown below.

