Capstone Report

Introduction

Market research is an important prerequisite for starting a business. Market research often involving investigating the need of the market and the current status of the market such as saturation level and potential competitors. Highly saturated market would not be a suitable target for starting a business, as it would lead to high competition and high expectations of customers. And it is applicable for restaurants as well, because having many restaurants that serves the same kind of dishes would only lead to high competitions and high customer expectations. Therefore, it is important to target a market niche, which is to provide differentiated dishes. The goal of this project is to do some market research for starting a restaurant at an area of interest, in order to recommend potential market niche.

For simplicity and clarity, I will have some settings for market research.

- Area of interest: Itaewon, Korea

- Restaurant type in consideration: Hong Kong cuisine restaurant.

I have made such assumptions because Itaewon (Korea) is a place in Seoul that is popular for having restaurants that provides wide diversity of cuisines. And because of this nature, main purpose of visitors to Itaewon for dining could be exposure to unique types of restaurants that are not readily available in other areas. Therefore, I would like to explore the restaurant market status in Itaewon and provide some insights for someone who would like to start a restaurant in Itaewon.

Data

Data involved in the project would be mainly Foursquare location data. Using Foursquare data, I would extract the locational information of the different restaurants, popularity of

different restaurants, price range of the restaurants and types of restaurants. This information would be used for analyzing and comparing the restaurants in the area of interest and generate categorized list of possible restaurant types.

Due to limitation of the API, I had to collect price information and popularity ranking information in different endpoints and combine this information. And through data processing of raw data from Foursquare location data, the final data consist of:

1.   Restaurant Name

2.   Geolocation information (latitude, longitude)

3.   Popularity ranking

4.   Restaurant type

5.   Distance from subway

6.   Price range

Method

For market research, I have used several approaches including

- Saturation level of the market (what types of restaurants are already there in the area of interest),

- Popularity analysis

- Correlation analysis between factors (popularity, distance, price, restaurant type)

- Using visualization to find some appropriate location for restaurant

- Finding price range using reference to competitors.

Exploring saturation level of the market

Exploring the saturation level of the market is important since this is an indicator of potential competitors. In the case of Hong Kong cuisine restaurant, I wanted to see how many Chinese or Hong Kong restaurant are already available in the market.

Popularity analysis

Popularity of certain types of restaurants are not fixed. They vary in different areas. In some places Italian restaurants could be more popular and, in some places, Korean restaurants could be more popular. Analyzing this would give some idea of the atmosphere of the area of interest and give some insights on what type of cuisines could be more suitable for launch.

Correlation analysis between factors

There could be some correlation between factors such as popularity, distance, price, restaurant type. For example, the distance of the restaurant from the subway could affect its popularity because people might find those restaurants first. In Korea, many people use subway as the main transportation especially when going to busy areas like Itaewon. Therefore, I suspected that this could influence the popularity. And generally, prices of restaurants are important factors when choosing the restaurants. However, in some places, people tend to care less on these prices because they are prepared to spend more budgets in these areas. Itaewon is one of those places that people go for high-end restaurants and this could be one area to explore as well.

## Using visualization to find some appropriate location for restaurant

In order to find some appropriate location for restaurant, it is important to see the actual environment or surrounding of the place. It is important to see how dense those places are in terms of competing restaurants or exposure level. Sometimes, it is more important to be in the "inner circle" than having no exposure to the potential customers. This is hard to be analyzed numerically, so I used visualization to present this.

Finding price range using reference to competitors.

Determining the appropriate price range could be important. It is useful to know about the price range of the related or competing restaurants so it is worthy to explore this aspect as well.

Results

Exploring saturation level of the market
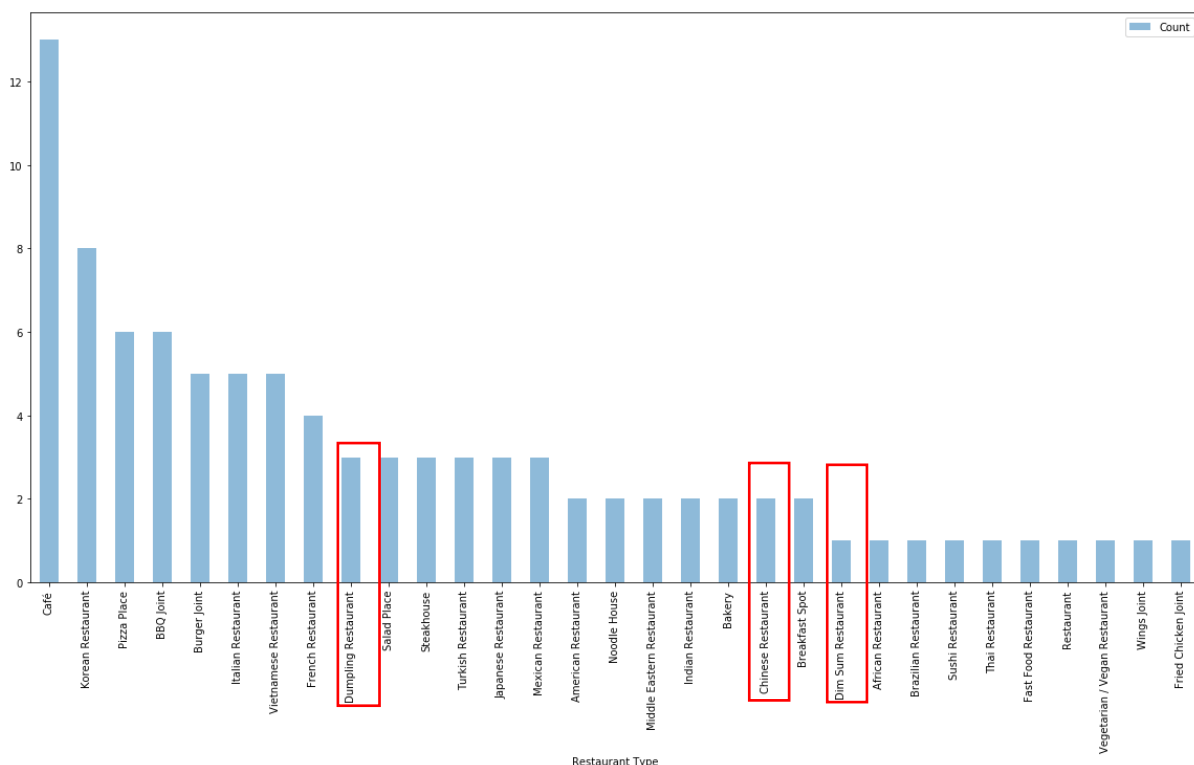
The figure above shows the distribution of number of different restaurant types. Since Hong Kong cuisine is related to Chinese, Dim Sum and Dumpling, it is worth to observe the level of saturation of these restaurants. It seems that there are in total 6 out of 94 restaurants in Itaewon, which is not a small proportion. And if there are any popularity-dominating restaurant out of these related restaurants. It might be difficult to enter the market.

Popularity analysis

The figure above shows the popularity distribution of different restaurant types. The popularity of these related restaurants (Chinese, Dim Sum and Dumpling) are generally low. I could either indicate, there are low demand for Chinese, Dim Sum and Dumpling food in this area or there are room for shining in this type of cuisine.

Correlation analysis between factors

Correlation between distance from subway and popularity: -0.068.

This could indicate that people visiting Itaewon often have choices of restaurants in advance of arrival and do not choose restaurant for the sake of convenience of walking less.

Correlation between price and popularity: 0.096055

This could indicate that people visiting restaurants in Itaewon have some high budget expectation. They do not choose restaurants for the sake of cheap prices.

Correlation between saturation level and popularity: -0.015281

This also indicate that having more competitors does not reduce the popularity much. This could be due to different restaurants having different specialty disregarding their similarity in cuisine type or existence of competitors increasing the quality of food and attracting more customers.

Using visualization to find some appropriate location for restaurant
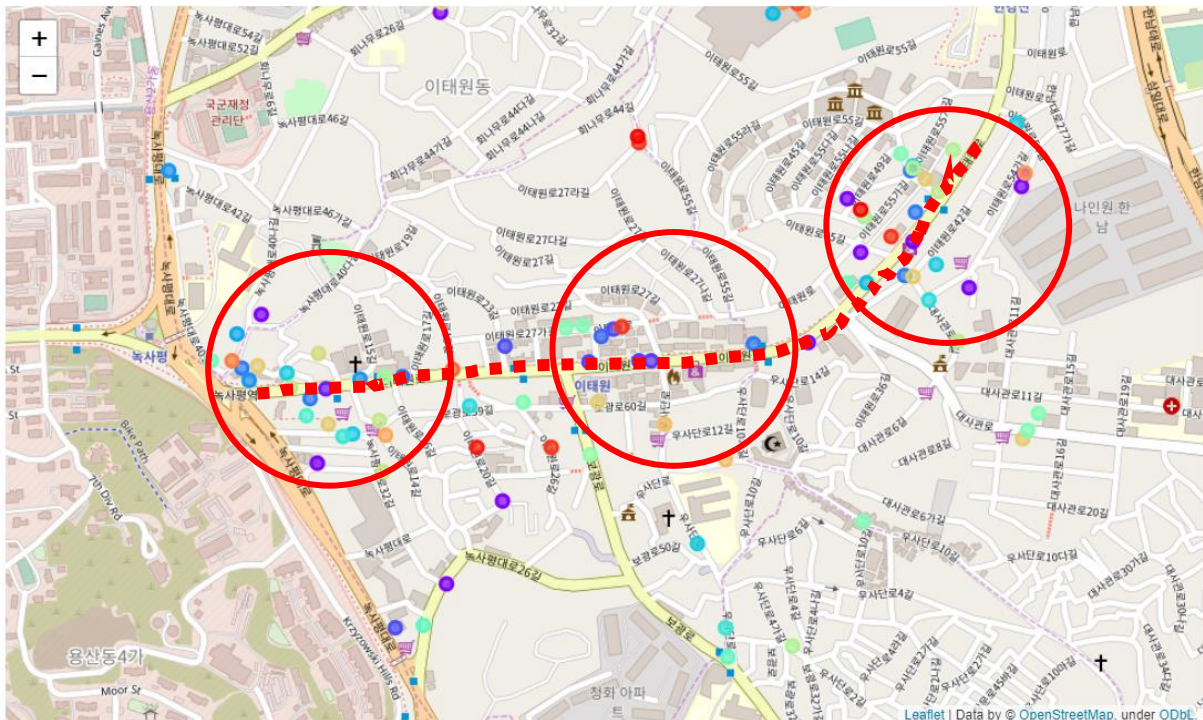
This shows distribution of restaurant in a map. Color of the marker encodes the restaurant type. From the map, we can observe that three are wide variety of restaurant types in Itaewon. And we can also observe that there are some areas of high density and these places are near the main road. So, in this case, we can infer that the level of exposure is measured by distance from the main road, instead of the distance from the subway. And there are no clear clusters of same types of restaurants.

Finding price range using reference to competitors

Venue	Venue Category	Price
명동교자	Dumpling Restaurant	1
YE Shanghai (야상해)	Dumpling Restaurant	1
넘버원양꼬치	Chinese Restaurant	1
대한각	Chinese Restaurant	1
Jonny Dumpling (쟈니덤플링)	Dumpling Restaurant	2
Bao Bar (바오바)	Dim Sum Restaurant	2

The table above shows the price range of potential competitors. The price range from 1 to 4. 4 being the highest price range (around $30 per person). This observation shows that in order to Hong Kong cuisine to compete in terms of price, the price range should be 1 to 2, which does not excess $10~$20 per person.

Discussion

Due to availability of open data, there were limitation in the depth of analysis that I could carry out. And, there would be some issues with using popularity ranking as an indicator of popularity since there are ranking is not an absolute scale measurement but rather a relative measurement. Given more resources, there are rooms for improvement in the analysis and more insights to discover.

Conclusion

In this project, we have explored the restaurant market in Itaewon, Korea. It was interesting to observer large diversity of restaurants in Itaewon and the prices not affecting the popularity in this area. Also, there were high density of restaurants near the main road and this could improve the exposure level to the potential customers. And we also observed there are some market niche for Hong Kong cuisine in Itaewon since there are not many competitors and especially there is no shining competitor. Finally, it is expected that the price range could be below $20 as the competitors usually have prices below that.