

1. Introduction

As is known to all, Canada is an immigration country where immigrants are playing an increasingly important role in the community. Canada receives its immigrant population from almost 200 countries in the world. According to the official statistics in 2017[1], immigrants from China accounts for 9.1% of the Permanent Residents Admitted in 2016. Meanwhile, Canadian Bureau for International Education (CBIE) reported that nearly 500,000 international students studied in Canada at all levels in 2017, and 28% of them were from China.[2] This number is still increasing.

So the background of this study is a new Chinese immigrant will move to Canada soon and he plans to open a new restaurant as his main business. Basically, he wants to move in the east part of the country. In order to survive in the competitive catering trade, before he makes the decision, he decided to conduct a study regarding all the details, such as the location, type of the restaurant, etc.

1.1 City

There are several large cities in the east part of Canada, such as Toronto, Montreal, and Ottawa. These cities all have a large population and attract a lot of immigrants and international students as well. Therefore, a final decision will be made within these three cities.

1.2 Location

Chinatown is the place where most Chinese immigrants and students can be expected. All of the three potential cities, Toronto, Montreal, and Ottawa have Chinatowns. Therefore, the preliminary plan is to open the restaurant in the Chinatown. But meantime, we will also explore if there is other potential similar neighborhoods by clustering the neighborhoods and sorting the most popular venues in each neighborhood.

1.3 Type of the restaurant

Another important problem to think about is the type of the restaurant. A Chinese

restaurant seems to be a safe answer because it is located in the Chinatown. But is that really the case? Data from Foursquare can be used as a judgement for this question.

1.4 Who may be interested?

This study will focus on the comparison of the Chinatowns in Toronto, Montreal and Ottawa. By the end of this report, a proposal will be generated to help the new immigrant judging a better place to open the restaurant. This study may not only be beneficial for those who want to open a restaurant or enter the catering trade, but also target other audience who may start their business in the future with potential customers being Chinese immigrants and students.

2. Data

2.1 Location Data

Firstly, the study will focus on the location. The main source of the data is Foursquare location data. The three Chinatowns in Toronto, Montreal and Ottawa will be set as the position of interest and the venues around will also be explored. The number of venues returned under same area may be interpreted as the size or the popularity of this Chinatown. Recommendations from the Foursquare may also be considered as a reference. Besides, an investigation of the neighborhoods around Chinatown can also become an interesting field to explore.

3. Methodology and Analysis

3.1 The city

The first question to answer is which city we will choose for the restaurant. Considering the fact that our major potential customers will be Chinese immigrants and students, a study regarding the three Chinatown was first conducted. In this part, a number statistics was considered regarding the venues around each Chinatown. Generally speaking, a region with more venues (shops or business) means it is more popular. To compare the number of venues, the Foursquare data was employed to figure out the answer within a

certain distance of the target.

Another important aspect is the average living expense, which will be taken into consideration as well.

3.2 Type of restaurant and location

In this part, the main goal is to decide which type of restaurant may survive in the catering trade. The K-means machine learning method was employed to cluster the neighborhoods.

By clustering the neighborhoods and sorting the popular venues, the most popular type of venues in each neighborhood was obtained, which may serve as a reference for the decision.

Details of this part can be found from the jupyter notebook.

4. Results

4.1 The city

As mentioned, two main aspects were considered to choose the city. The Chinatown size and the living expense.

By using the Foursquare data, I compared the venues around each Chinatown and it was easy to find that Montreal and Toronto have a relatively larger Chinatown than Ottawa, as shown in the table below.

	Number of venues returned
Toronto	100
Montreal	100
Ottawa	44

In terms of the size, it is suggested that Montreal and Toronto may be better choice since they tend to attract more people.

The second aspect is the living cost. According to NUMBEO[3], Toronto ranks the first

in terms of the average living expense in Canada, while Ottawa and Montreal ranks 21st and 23rd, respectively.

So combining both aspects, it is suggested that Montreal may be the winner of the three cities.

4.2 Type of restaurant

According to the statistics of Chinatown in three cities, besides Chinese restaurant, French restaurant, Vietnamese restaurants are also quite popular, as shown in the following table.

	No.1	No.2	No.3	No.4	No.5
Toronto	Vegetarian	Chinese	Mexican	Vietnamese	Caribbean
Montreal	French	Chinese	Vietnamese	Sandwich	Asian
Ottawa	Vietnamese	Chinese	Pizza	Korean	Asian

Therefore, a Chinese restaurant is a safe option, while Vietnamese restaurants or other Asian food may also be a feasible idea.

4.3 Location

Based on the K-means clustering analysis, the neighborhoods in Montreal are divided into five clusters. After exploring each neighborhoods and their respective popular venues, it is shown that neighborhood “Quartier des spectacles” and neighborhood “Red-Light District, Montreal” may be the other two options if there is a chance to open a chain restaurant in the future.

5. Discussion

In this section, a recommendation based on the study will be proposed and the limitations of this study will be discussed.

The recommendation for the new immigrant is:

- Consider Montreal as the city to open the restaurant

- Chinese food is a good choice, while Vietnamese and other Asian food seem to be feasible as well
- Besides Chinatown, two more neighborhoods can be the alternative place in the future (suppose the restaurant is still a Chinese or Asian food restaurant)

The limitations of this study includes:

- Only three large cities are considered and compared. Actually, there are other popular cities among new immigrants
- Some assumptions are made in this analysis such as using the venue numbers to represent the size and popularity of a region
- More aspects like the living expense should be taken into consideration.

6. Conclusion

In this report, a preliminary study about three cities: Toronto, Ottawa and Montreal was conducted. Chinatown acted as the main position of interest.

The neighborhoods in Montreal was explored and clustered using K-Means clustering method. Venues in each neighborhoods were displayed and sorted by its popularity.

Finally, a recommendation was proposed in terms of the city, restaurant type and location and the limitation of the study was stated.

Reference

- [1] "Citizenship and Immigration Canada, Facts and Figure".Cic.gc.ca. Citizenship and Immigration Canada. 2017.
- [2] <https://cbie.ca/media/facts-and-figures/>
- [3] https://www.numbeo.com/cost-of-living/country_result.jsp?country=Canada