A proper location for opening a Korean restaurant in city of Singapore

-- The Battle of Neighborhoods

L. Zhou

April 2020

Outline

- Objective and Problem
- Data collection
- Methodology and analysis
- Results
- Conclusion

Objective and Problem

- Singapore is a major financial and shipping hub, consistently ranked the most expensive city to live in since 2013.

- Singapore is also a popular tourist destination, with well-known landmarks such as the Merlion, Marina Bay Sands, and Gardens by the Bay.

- The beautiful "Garden city" Singapore is full of commercial opportunities, however there are tough challenges for any business investors to open new business there.

- This work is to leverage the Foursquare location data to explore or compare neighborhoods to assist a Korean business investor to choose a good location to open a Korean restaurant in Singapore.

Data collection

Singapore is divided into 28 districts under the old postal district system

Core Central Region

The districts are grouped into 3 regions: Core Central Region (CCR); Rest of Central Region (RCR); Outside Central Region (OCR).

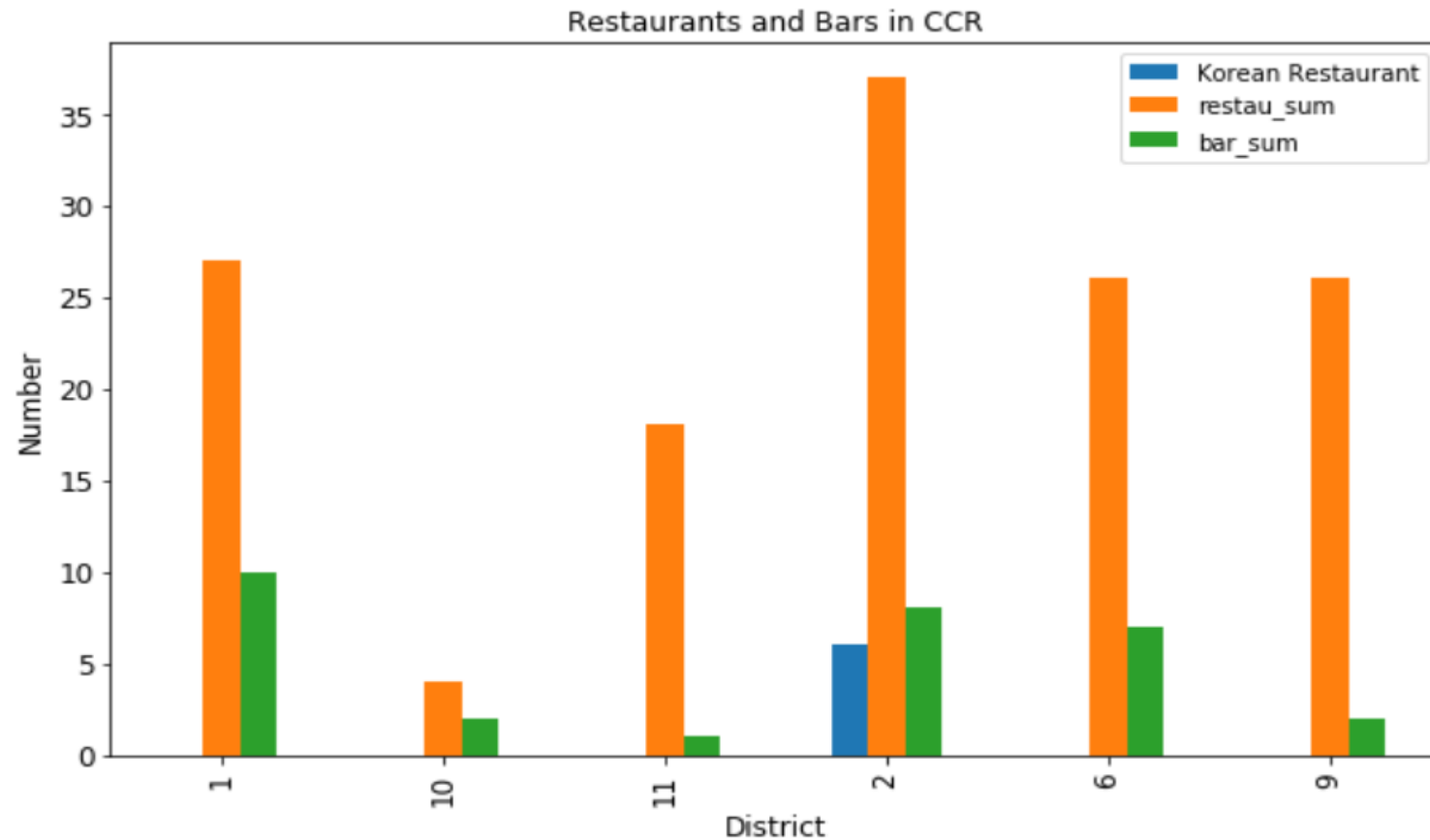| District	Code	Latitude	Longitude
CCR	1	1.28895	103.84904
CCR	2	1.27929	103.85055
CCR	6	1.2925	103.85392
CCR	9	1.30374	103.83214
CCR	10	1.31355	103.79071
CCR	11	1.32363	103.81193

Methodology and analysis

- Foursquare API and K-Means machine learning method will be applied in the data analysis.

- Foursquare API is applied to explore the place of interests, to acquire the business establishment information on the surroundings, especially the business related to eatery in the Districts in this project.

- Graphs are used to present the restaurant distribution in the Districts.

- K-Means clustering method is applied to find the similarities among the Districts.
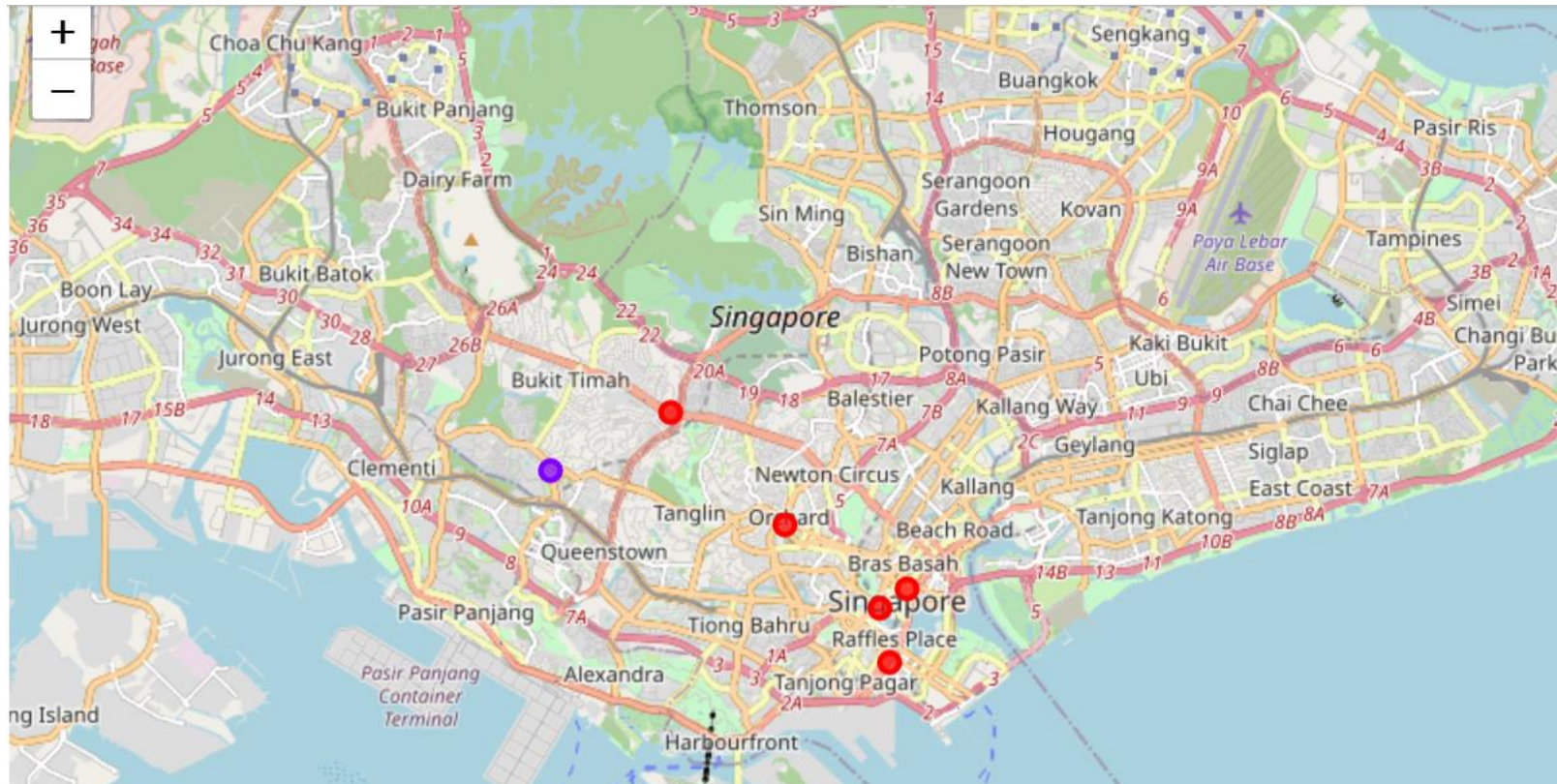
Data analysis

The most common venues

	CCR_district	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	1	Nightclub	Bar	Italian Restaurant	Hotel	Yoga Studio	Japanese Restaurant	Cocktail Bar	Café	Mexican Restaurant	Lounge
1	10	Chinese Restaurant	Bar	Bakery	Fruit & Vegetable Store	Spa	Seafood Restaurant	Food Court	Indian Restaurant	Dessert Shop	Department Store
2	11	Café	Shopping Mall	Asian Restaurant	Bakery	Indian Restaurant	French Restaurant	Malay Restaurant	Supermarket	Thai Restaurant	Noodle House
3	2	Café	Coffee Shop	Korean Restaurant	Cocktail Bar	Chinese Restaurant	Hotel	Food Court	Restaurant	Salad Place	Japanese Restaurant
4	6	Hotel	Café	Shopping Mall	Coffee Shop	Cocktail Bar	Event Space	Japanese Restaurant	Ramen Restaurant	Restaurant	Market
5	9	Boutique	Hotel	Sushi Restaurant	Café	Chinese Restaurant	Bakery	Shopping Mall	Bubble Tea Shop	Coffee Shop	Cosmetics Shop

Distribution of restaurants and bars in CCR region

Two clusters of Districts with similarity

Results and discussion

The proper location of the proposed high-end Korean restaurant would be in CCR District 10.

- First the CCR region has the most active commercial activities among the three regions in Singapore.
- Second, the number of restaurants in District 10 is the fewest, which means the competition may not be furious.
- Third, there are a few Bars operated here, which implies there are active social activities and therefore people traffic volume.
- Fourth, District 11 area has high density private properties, so both the competition and operation cost will be high.

However, the final decision should be made by analyzing more information, such as the scale of the established restaurants, the government blue plan, the ongoing business and commercial activities, distribution of population, and convenience of public transportation.

Conclusion

- This work applied data science knowledge to solve a practical problem. It included problem statement and objectives of the work, and problem solving via data collection, pre-processing, and analyzation.

- A recommendation was made at the end of this work after going through the data collection and analysis work.

- This work also helped to refine the learnt data science techniques and enhance our skill of applying data science knowledge to real problem solving.

Thanks!