Neighbourhood Analysis in Hong Kong

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Introduction

- Multi-cultural city in Asia
- Integration of Western and Eastern culture
- Destination for study, business and tourism

- Purpose of this study:
  - To analyze the difference between neighbourhoods in Hong Kong
  - To help decide if people should come to Hong Kong to live and where to stay
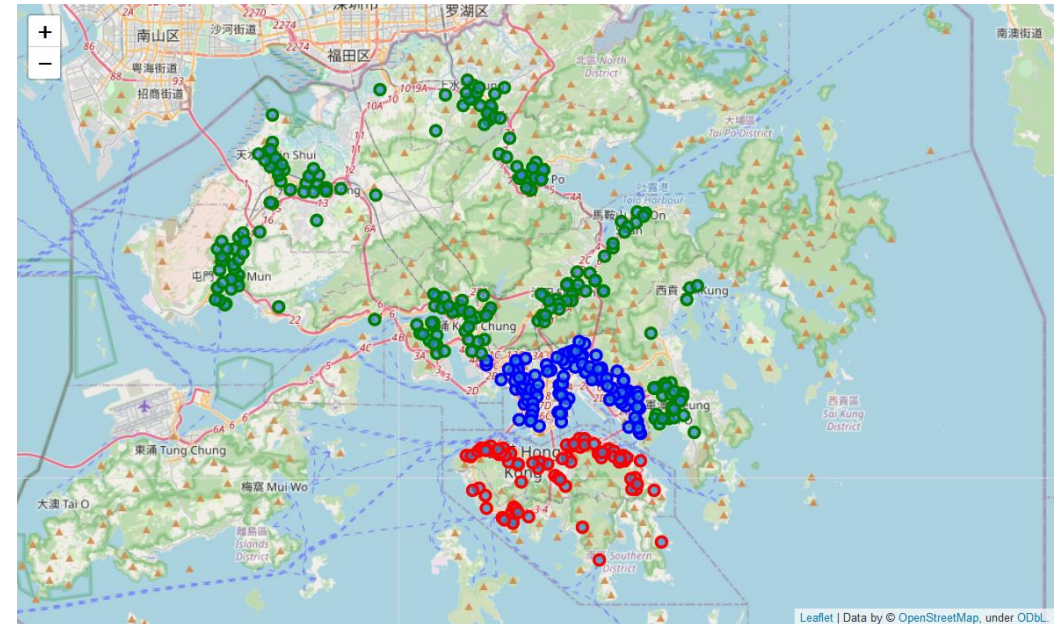

Pic from wikipedia

Data

- Hong Kong neighbourhood data from 2019 district council election
- https://www.elections.gov.hk/dc2019/eng/p_cs.html
- Location data from Geopy package

Data

Three main areas

- Red – Hong Kong Island

- Blue – Kowloon

- Green – New Territories

- The neighbourhoods distributed uniformly around the urban areas

Map created by Folium

Methodology – K-means clustering

- Determination of k

- Distortion means the within-cluster sum of squared errors

- At the elbow point, k ~ 12

- Thus, the best k should be around 12
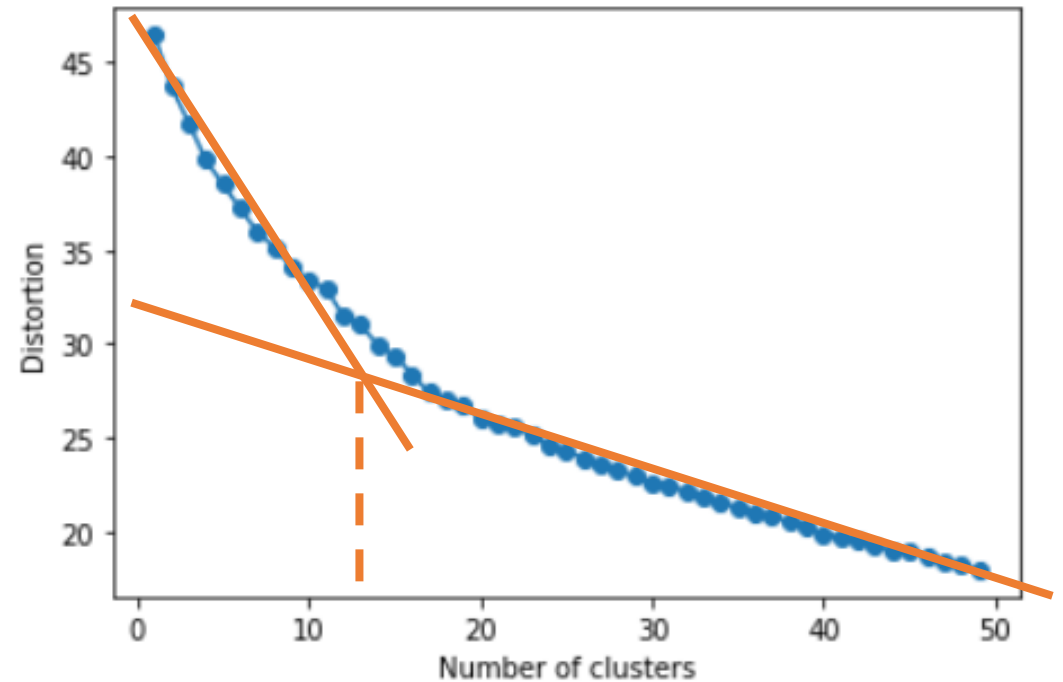
Methodology – K-means clustering

Label no.	Counts
0	57
1	60
2	95
3	2
4	1
5	119
6	57
7	1
8	1
9	1
10	1
11	4

- Remove the labels with counts less than 10 (outliers)

- Re-index

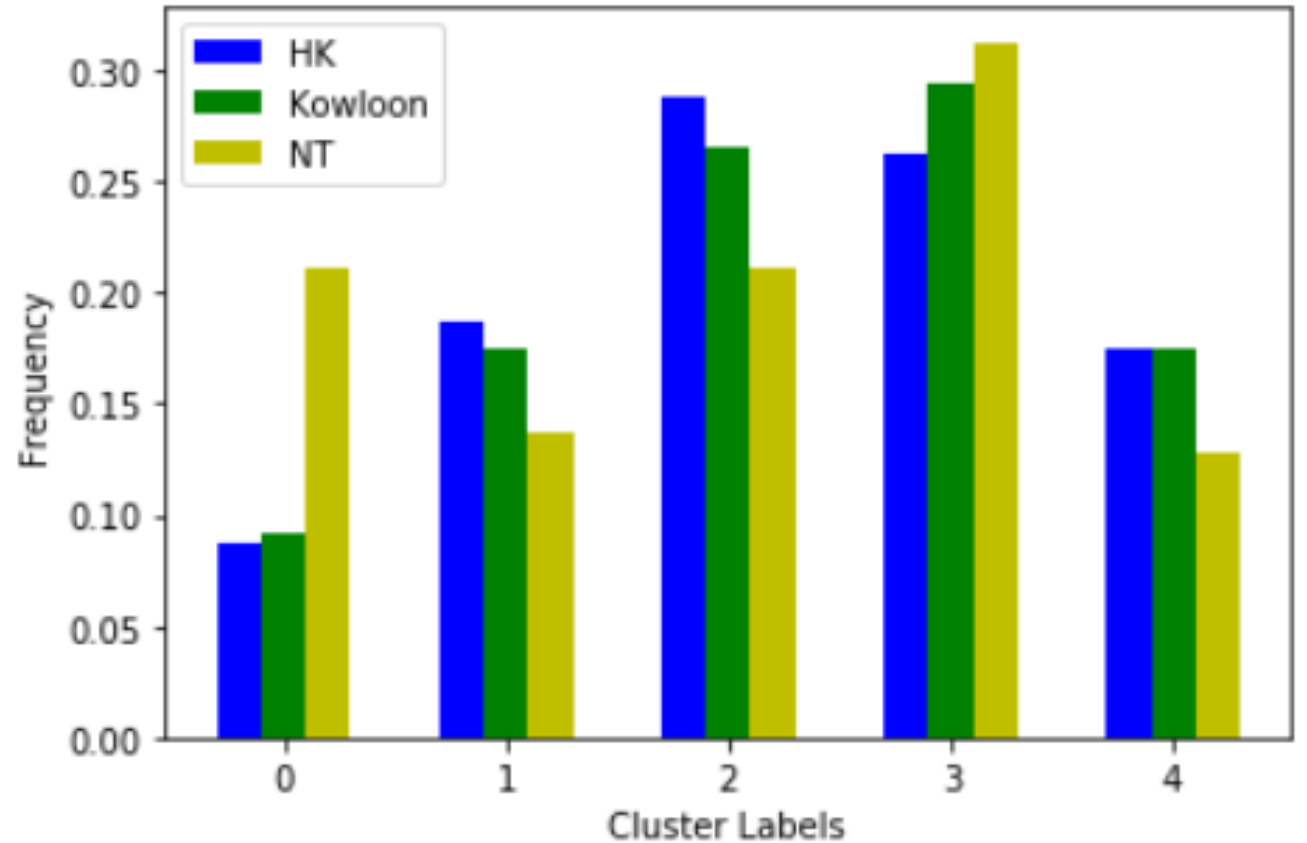| Label no.	Counts
0	57
1	60
2	95
3	119
4	57

Results – HK and Kowloon

- Generally, the structures of HK and Kowloon neighbourhoods are close to each other

- Cluster 2 and 3 are more common than others

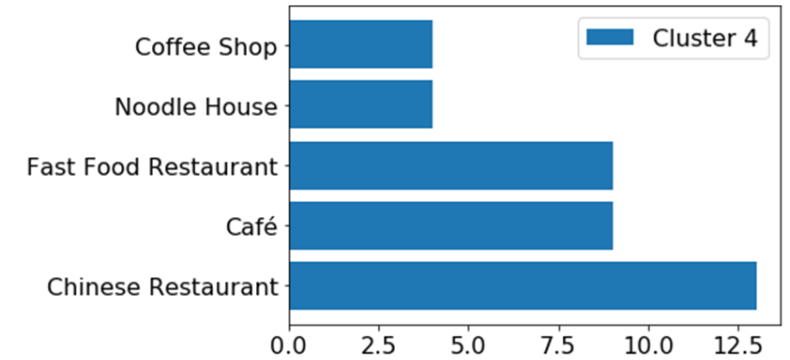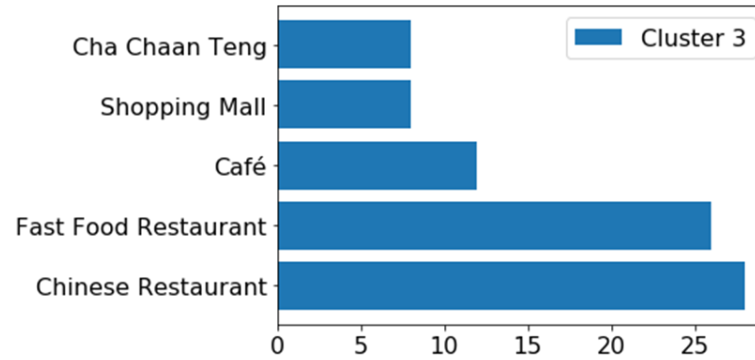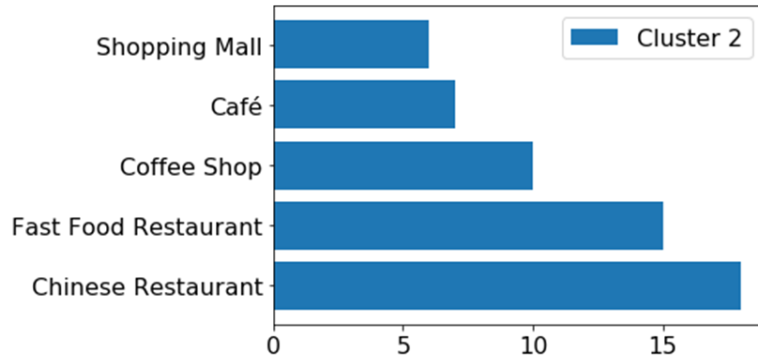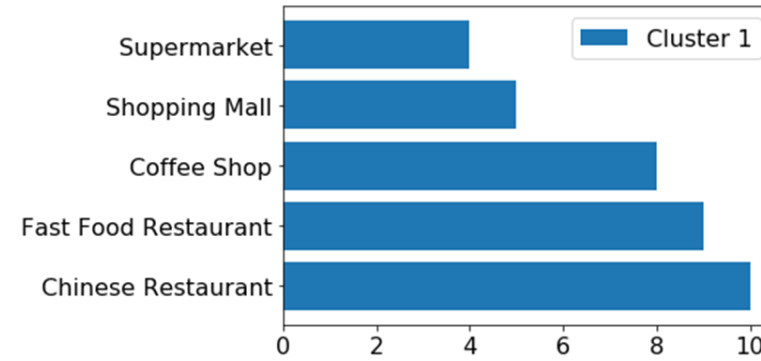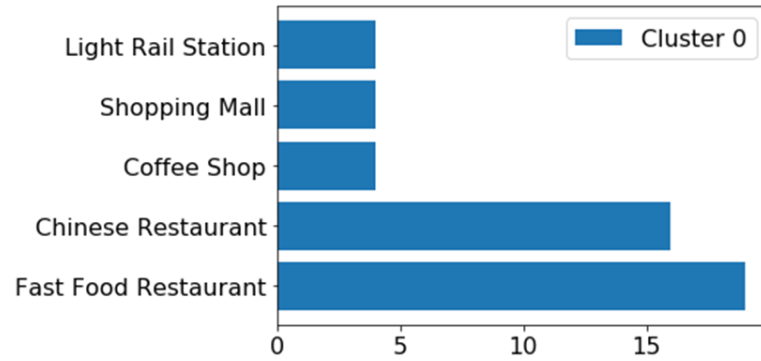- Cluster 2 slightly more common in HK while Cluster 3 in Kowloon
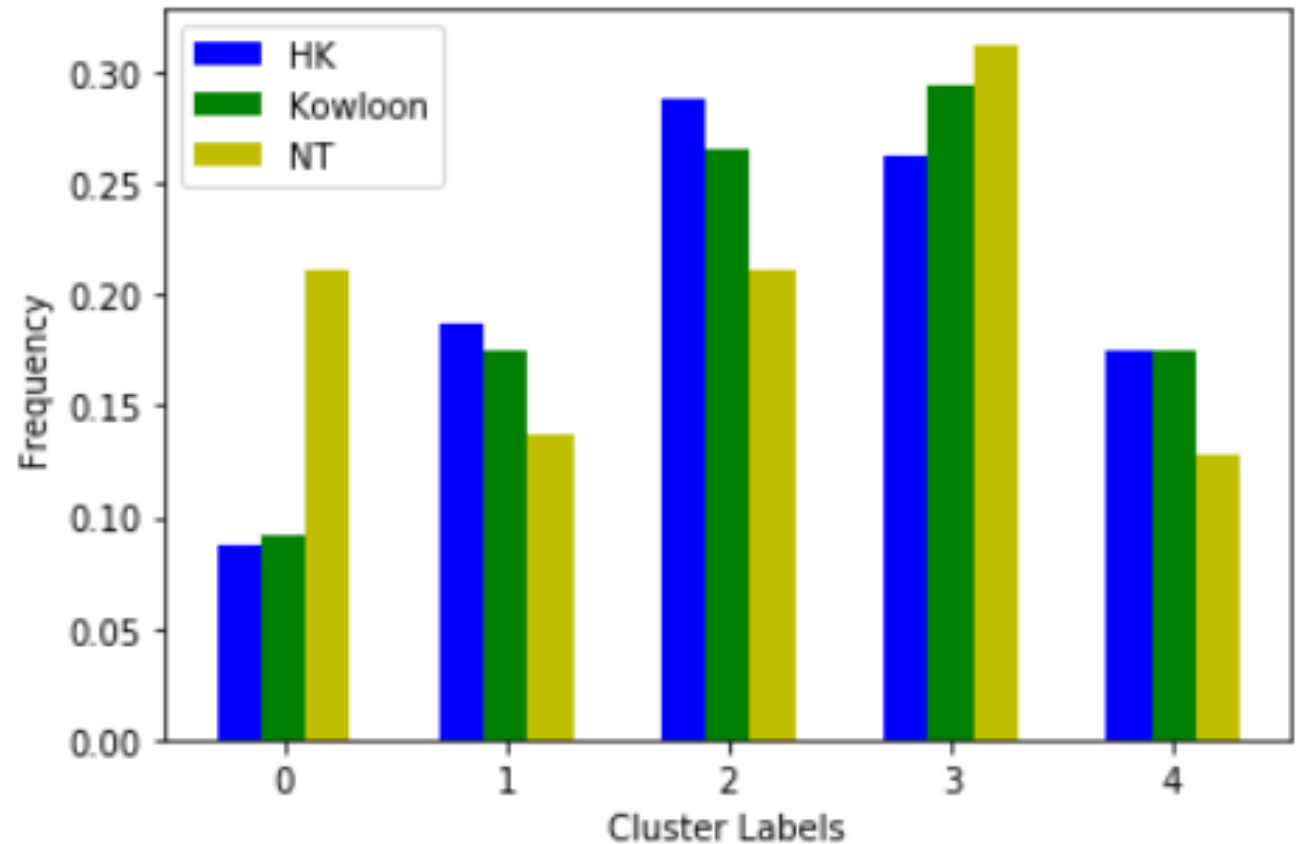
Results – NT

- Cluster 0 is more common in NT than in HK and Kowloon
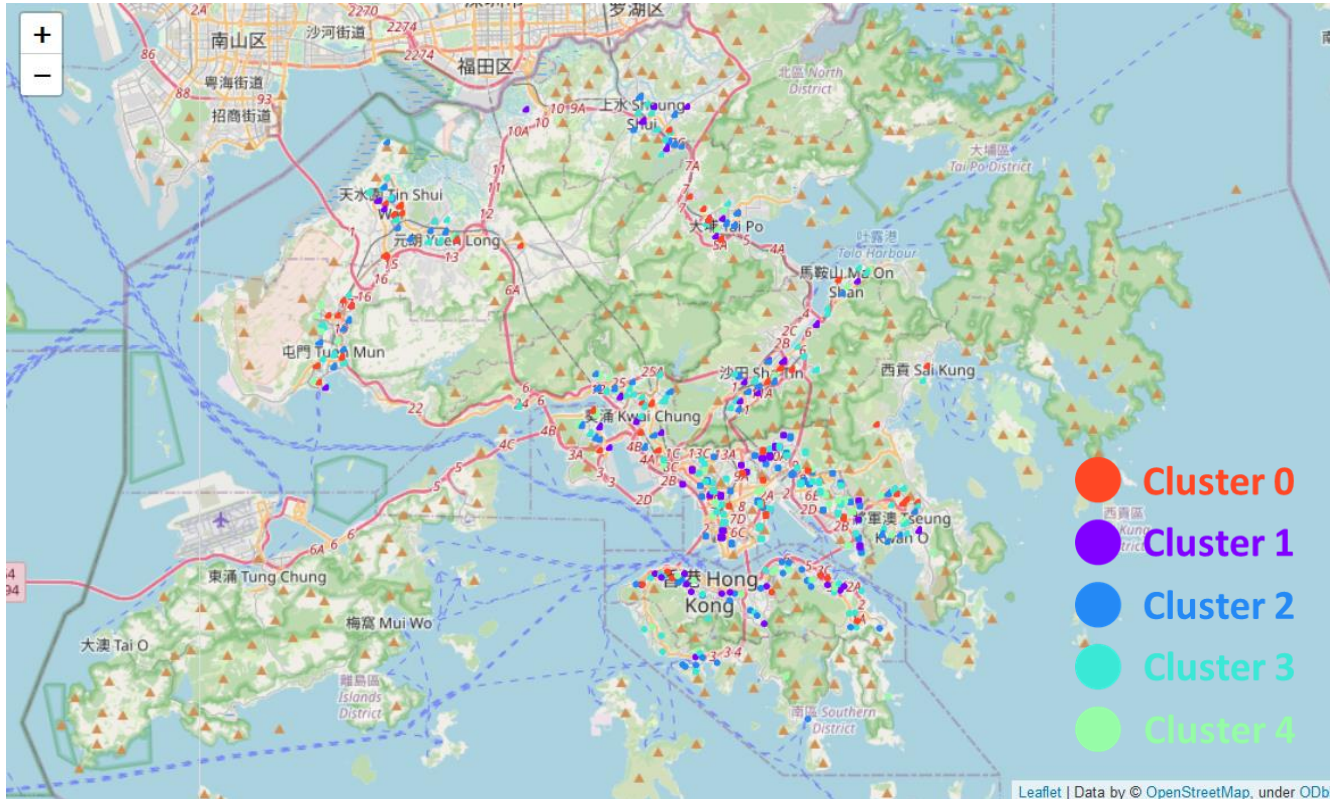- Cluster 1, 2 and 3 less common in NT

Results & Discussion

- NT has more cluster 0 and 3, which show larger frequencies of Chinese restaurants and fast food restaurant, while fewer venues like coffee shops
- Light rail station is typical in NT, which appears in top 5 of Cluster 0

Results & Discussion

- Different clusters can be visualized on this Folium map

- E.g. In Tuen Mun, more cluster 0 can be found, while fewer cluster 1

- This map can help decide where to stay in Hong Kong

Conclusion

- The neighbourhoods in Hong Kong island and Kowloon are close to each other, probably due to the similar urbanization history

- Hong Kong is a convenient city where supermarket and shopping malls are distributed in many neighbourhoods around the city

- Chinese restaurants and fast food restaurants are the most common venues in Hong Kong, which may be related to the eating habit in this city.