IBM Applied Data Science Capstone
Opening a New Coffee Shop in Jakarta, Indonesia

By : Aries Fitriawan
August 2019

Overview

Purpose — Identify optimal places for opening the new Coffee Shop that minimize the competition.

Key Business Objective — In the city of Jakarta, Indonesia, if a business owner is looking to open a new Coffee Shop, where would you recommend that they open it?

Challenges Involved

1. There is no *paid foursquare API* involved in this project.
2. Since no more detailed data, this project only consider one factor i.e. frequency of occurrence of coffee shop, there are other factors such as distance between coffee shop, population and income of residents that could influence the location decision of a new coffee shop

Our Approach — Using K-Means to identify the segmentation of Jakarta districts based on the occurance of Coffee Shop in those areas.

Results

1. The neighborhoods in cluster 1 are the most preferred locations to open a new coffee shop.
2. The findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new coffee shop.

Our strategy is to find the best place for opening the Coffee Shop in Jakarta

Business Problem Question

Analyze and select the best locations in the city of Jakarta, Indonesia to open a new Coffee Shop.

In the city of Jakarta, Indonesia, if a business owner is looking to open a new Coffee Shop, where would you recommend that they open it?

Current Strategies:

1. Business owner and/or investors looking to open or invest in new Coffee Shop in the capital city of like Jakarta.
2. The city is currently suffering from oversupply of Coffee Shop
3. From the survey, 5.94% considering the location of Coffee Shop as the most important factor to buy a coffee

Can We?

1. Use Data Science methodology and machine learning techniques for clustering, can we provide solutions to answer the business question?
2. Give a recommendation to strengthen the strategy in opening Coffee Shop in Jakarta

Providing the proper data to help the strategy should improve the result

Data Required

1. List of districts in Jakarta.
2. Latitude and longitude coordinates of those districts based on Indonesian Census
3. Venue data, particularly data related to Coffee Shop for clustering processes

Data Source

1. List of districts in Jakarta (Manually collected). From:
   http://data.jakarta.go.id/dataset/jumlahkecamatankelurahanrtrwdankkdkijakarta/resource/1d5b0bb0-3aa7-482a-9e65-fc03d466efac

2. Longitude and Latitude of the center of districts in Jakarta from Google Maps (Manually collected)
3. Foursquare API for venue data.

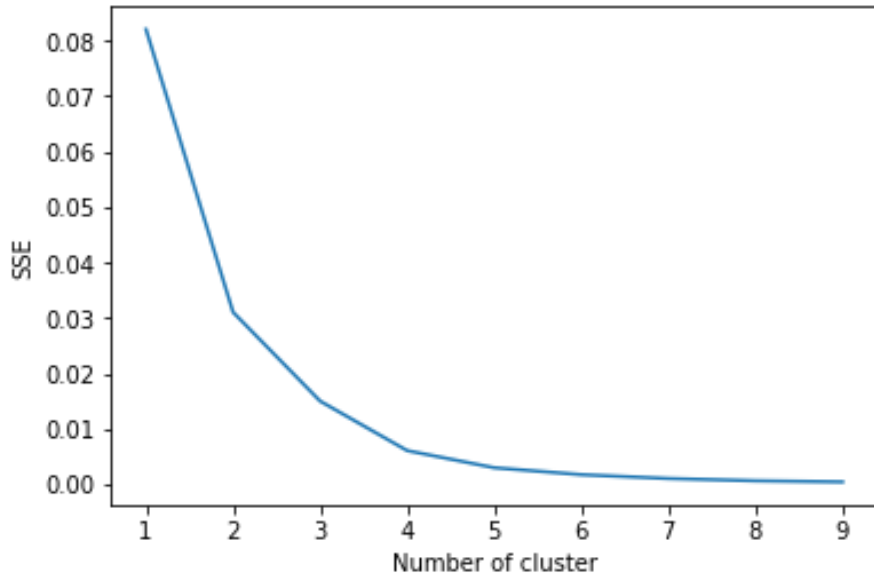# Methodology : How to derive the best place recommendation for opening new Coffee Shop in Jakarta
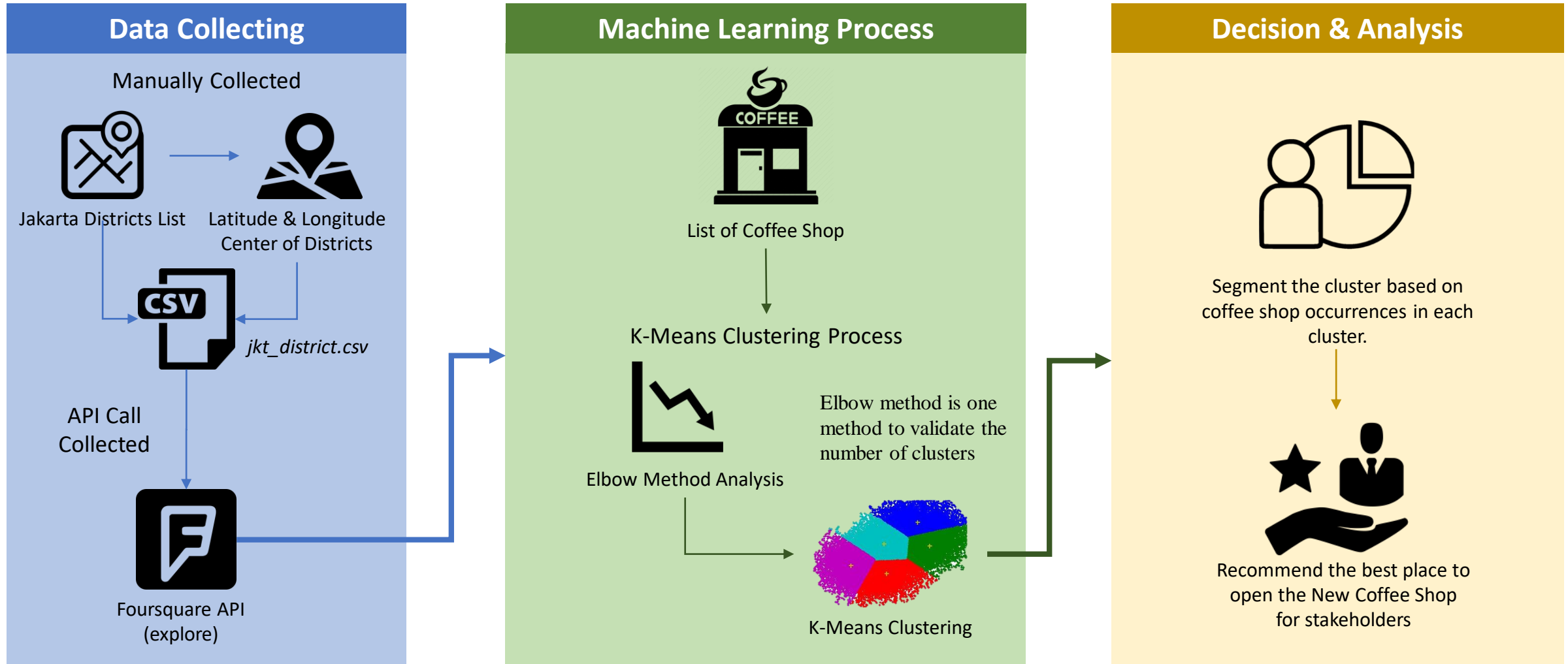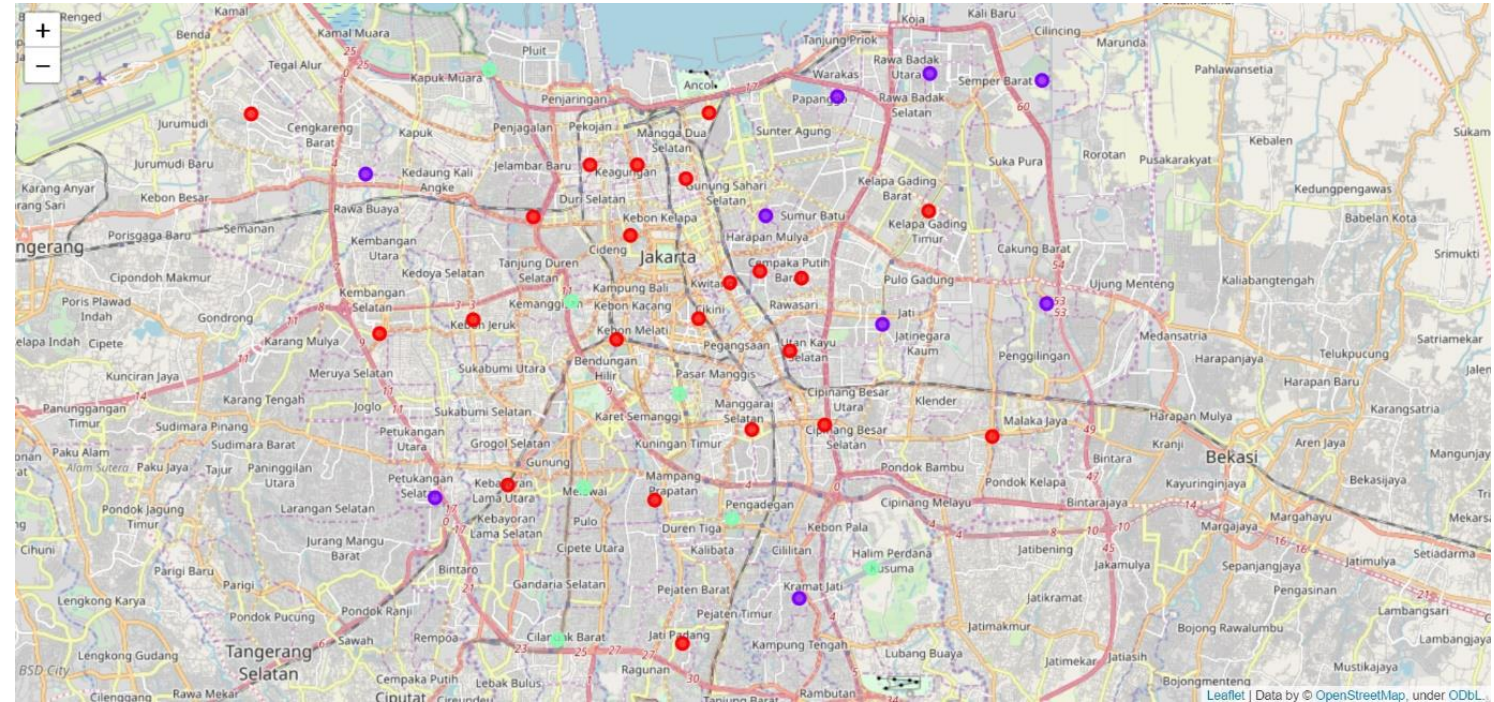
Result

The result of elbow method can be seen the elbow is began to appear and slightly decreasing in k=3
(we don't use k=2, due to very general result).

✓ Cluster 1 (purple dots): Neighborhoods with lowest number to no existence of coffee shop
✓ Cluster 2 (green dots): Neighborhoods with high concentration of coffee shop
✓ Cluster 3 (red dots): Neighborhoods with moderate number of coffee shop

Discussion & Recommendation

Result Disscussion

1. Most of the coffee shop are concentrated in the **South Jakarta**
2. Highest number of coffee shop can be found in cluster 2 and moderate number in cluster 3
3. Cluster 1 has very low number to no coffee shop in the neighborhood
4. Cluster 1 mostly comes from North Jakarta and East Jakarta
5. Oversupply of coffee shop mostly happened in the South Jakarta, with the North Jakarta still have very few coffee shop.

Recommendation

1. **Open new coffee shop** in **cluster 1** with little to no competition
2. Can also open in **cluster 3** with moderate competition **if have unique selling propositions to stand out from the competition.**
3. **Avoid** neighborhoods in **cluster 2**, already high concentration of coffee shop and intense competition

Conclusion

- Answer to business question:

The neighborhoods in cluster 1 are the most preferred locations to open a new coffee shop.

- Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new coffee shop.

Thank You