

# **Strategic Location Recommendation for Opening Coffee Shop in South Jakarta**

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## **1. Introduction - Business Problem**

South Jakarta is one of municipalities of Jakarta. South Jakarta is the richest municipality compared to other municipalities of Jakarta, with a lot of housing for middle to upper class citizens and a major business centre. South Jakarta has 10 districts with a population around 2.296.977 [1]. As you can see, South Jakarta is one of favourite city for starting business. However, what are the best business recommendations in 2020 ? There are many options, but the best one maybe coffee shop.

According to [nowjakarta.co.id](http://nowjakarta.co.id)'s post The Emerging Business of Coffee Shops in Indonesia[3]. Indonesia's coffee shop business has good prospect in 2020, estimated the market value of coffee shops in Indonesia reach IDR 4,8 trillion per year. Although the momentum started in 2016 where the market size of coffee shops has increased very significantly where Kopi Kenangan, Janji Jiwa, Fore, and Tuku are the brands which considered as pioneer for this momentum. Opening coffee shop in 2020 still has good prospect because there is an online survey being conducted of young generation (generation Y and Z). The survey results , among others, showed that the coffee-to-go shops providing quality RTD Coffee at affordable prices is in high demand by this currently population dominating generation[3].

Therefore, as a resident of Indonesia and the potential of coffee shops business in 2020, i decided to analyse one of six key success factors, it is strategic location. In this project, we will give recommendations based on neighbouring business that can affect your business both negatively and positively.

## **2. Data Description**

Here is how i acquired my dataset,

First, i found the list of districts of South Jakarta in Wikipedia and manually create the dataset according to the list [3]. I update my dataset by adding latitude and longitude. For this matter, i used geopy [4] to acquire latitude and longitude of districts in South Jakarta (Figure 1).

Next, i update my dataset by adding nearby venues for each districts. For this matter, I used Foursquare API [5] to acquired nearby venues for each districts in South Jakarta with Radius = 1200 km, This radius is acquired based on distances for each districts to acquire optimum number of venues.

After that, i find duplicate venues based on column=['Venue', 'Venue Latitude, 'Venue Longitude'] and remove the row.

	Districts	Latitude	Longitude
0	Cilandak	-6.283818	106.804863
1	Jagakarsa	-6.330101	106.822237
2	Kebayoran Lama	-6.249128	106.777782
3	Kebayoran Baru	-6.243164	106.799850
4	Mampang Prapatan	-6.250878	106.823021

**Figure 1. Districts in South Jakarta with latitude and longitude.**

Finally, i acquired dataset which contains 750 venues for all districts of South Jakarta (Figure 2).

	Districts	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Cilandak	-6.283818	106.804863	Zap Permanent Hair Removal	-6.283846	106.807332	Health & Beauty Service
1	Cilandak	-6.283818	106.804863	Twin House Noodles & Beyond	-6.278725	106.804894	Noodle House
2	Cilandak	-6.283818	106.804863	Bulaf Cafe	-6.287187	106.801288	Café
3	Cilandak	-6.283818	106.804863	Sophie Authentique	-6.277665	106.801904	French Restaurant
4	Cilandak	-6.283818	106.804863	Apotek Aji Waras	-6.278053	106.806364	Pharmacy

**Figure 2. Dataframes of venues in districts of South Jakarta**

### 3. Methodology

In this project, we will analyse venues around district centre and clustering the venues for each districts. We will focus on identifying neighbouring venues and categorise it as positive venues and negative venues. For simplicity, we assume negative venues is another coffee shops and positive venues is other venues.

First step, we have collected data of nearby venues around 1200 meter from centre of districts. To understand the data more, we use descriptive statistics and find out the number of positive venues (Figure 3) and negative venues (Figure 4) for each districts.

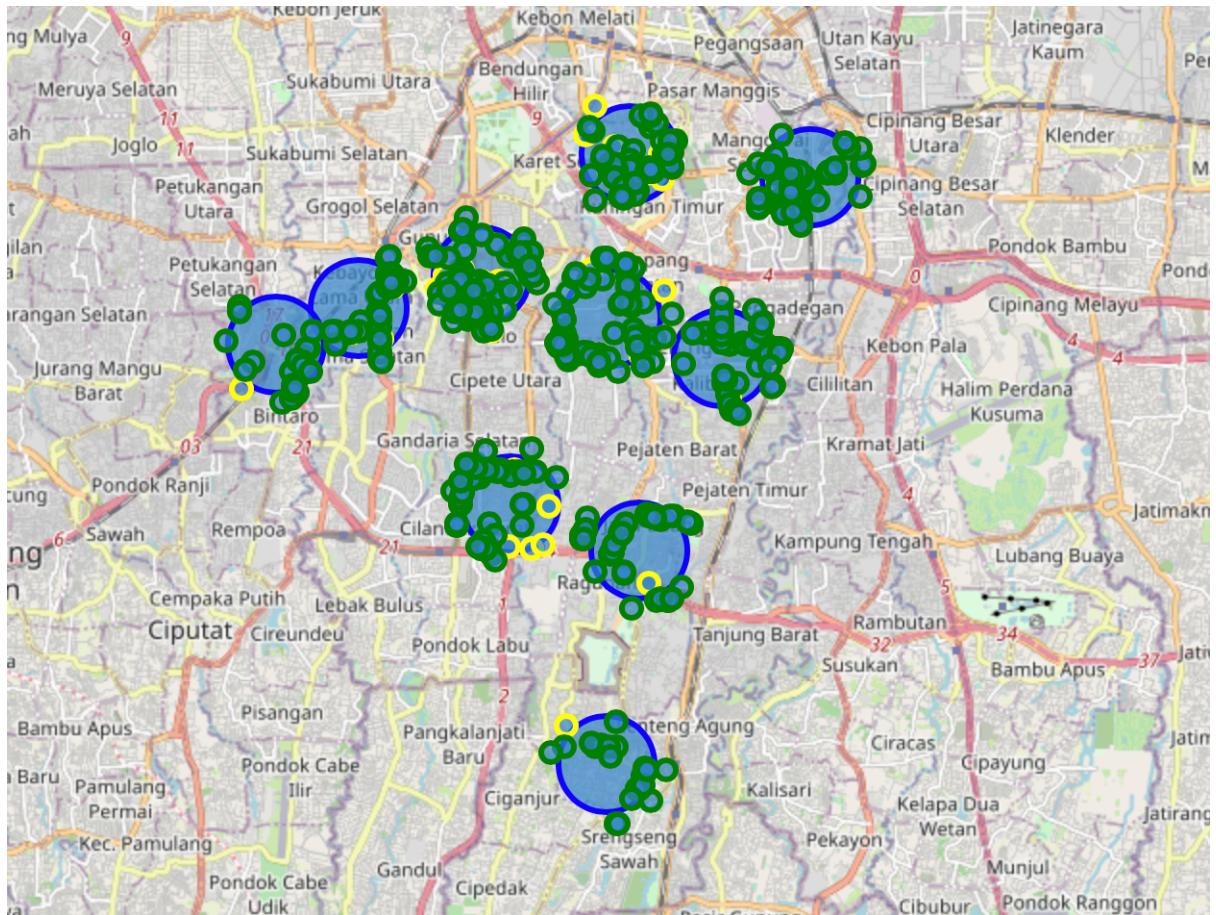
	Venue	Venue Category
<b>Districts</b>		
<b>Cilandak</b>	95	51
<b>Jagakarsa</b>	23	18
<b>Kebayoran Baru</b>	96	47
<b>Kebayoran Lama</b>	99	57
<b>Mampang Prapatan</b>	84	46
<b>Pancoran</b>	62	36
<b>Pasar Minggu</b>	38	25
<b>Pesanggrahan</b>	31	21
<b>Setiabudi</b>	92	52
<b>Tebet</b>	99	46

**Figure 3. Positive venues dataframe**

	Venue	Venue Category
<b>Districts</b>		
<b>Cilandak</b>	13	1
<b>Jagakarsa</b>	1	1
<b>Kebayoran Baru</b>	10	1
<b>Kebayoran Lama</b>	6	1
<b>Mampang Prapatan</b>	6	1
<b>Pancoran</b>	7	1
<b>Pasar Minggu</b>	2	1
<b>Pesanggrahan</b>	1	1
<b>Setiabudi</b>	10	1
<b>Tebet</b>	7	1

**Figure 4. Negative venues dataframe**

Second step, we assume that negative venues is coffee shops and positive venues is other venues. With categorising these venues, we obtained visualisation map that tells good candidate districts for opening coffee shop business from the number of negative venues (Figure 5). Blue circle shows Districts, Green circle shows positive venues, and yellow circle show negative venues.



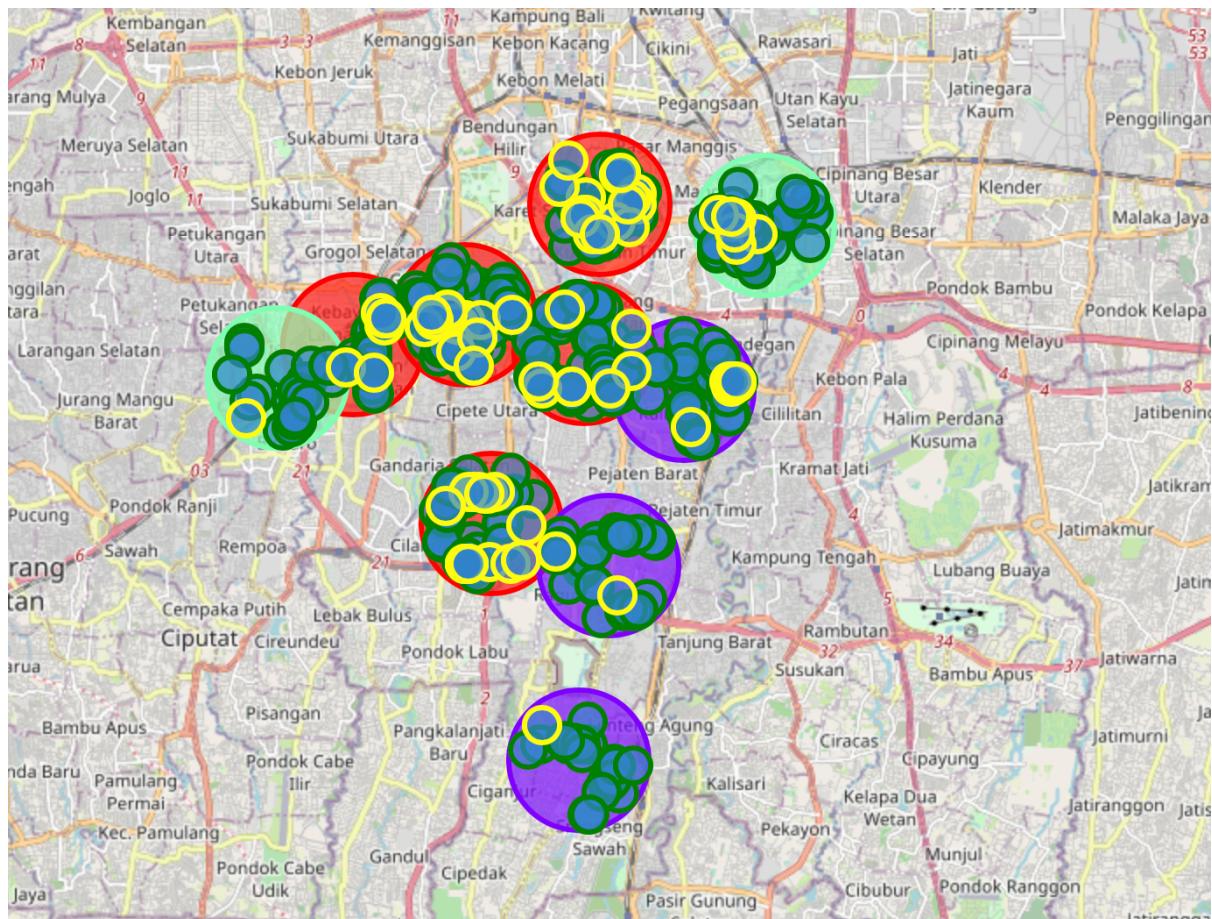
**Figure 5. Visualisation map of Positive Venues, Negative Venues, and Districts**

Third step, we focus to analyse positive venues and create cluster of most common venues for each districts (Figure 6). We will find out characteristics for each cluster. These cluster will be useful to define characteristics of districts.

Districts	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	11th Most Common Venue	12th Most Common Venue	13th Most Common Venue
0 Cilandak	Café	Asian Restaurant	Indonesian Restaurant	French Restaurant	Food Truck	Steakhouse	Fast Food Restaurant	Padangnese Restaurant	Diner	Restaurant	Chinese Restaurant	Japanese Restaurant	Noodle House
1 Jagakarsa	Indonesian Restaurant	Asian Restaurant	Soccer Stadium	Food Court	Café	Hotel	Lake	Noodle House	Other Great Outdoors	Park	Flea Market	Pharmacy	Department Store
2 Kebayoran Baru	Japanese Restaurant	Indonesian Restaurant	Food Truck	Noodle House	Korean Restaurant	Sushi Restaurant	Hotel	BBQ Joint	Café	Steakhouse	Italian Restaurant	Seafood Restaurant	Salon / Barbershop
3 Kebayoran Lama	Bakery	Japanese Restaurant	Dessert Shop	Chinese Restaurant	Steakhouse	Asian Restaurant	Ice Cream Shop	Café	Pizza Place	Korean Restaurant	Bubble Tea Shop	Seafood Restaurant	Indonesian Restaurant
4 Mampang Prapatan	Restaurant	Asian Restaurant	Food Truck	Noodle House	Bakery	Indonesian Restaurant	Snack Place	Japanese Restaurant	Steakhouse	Middle Eastern Restaurant	Hotel	Hobby Shop	Fast Food Restaurant

**Figure 6. Dataframes of most common venues for each districts.**

Finally, we will combine all information, that is positive venues, negative venues, and characteristics for each districts. we will present visualisation map from all information, and finally give list of recommended districts (Figure 7). Red circle shows first cluster district, Lime circle shows second cluster district, Purple circle show third cluster district, green circle show positive venues, and negative venues.



**Figure 7. Map Visualisation from all information**

## 4. Result and Discussions

In this project, we want to know which Districts is better for opening coffee shop business in term of strategic location. The question is, what characteristic that a district need to have, so it can be categorise best candidate for further analysis by stakeholders. For this question, **the hypothesis is nearby venues that can attracts large crowds to the area and has potential to buy coffee.**

From negative venues, we know that the good candidates for opening coffee shop business are Pesanggrahan, Pasar Minggu, and Jagakarsa. To find out the best candidates from these good candidates, we need to analyse each cluster. In general from all cluster, we find out that this dataset tell us the most common venues in South Jakarta is Restaurants.

First Cluster, although the dominant venues are restaurant, we can see that this cluster has more venues variants than other clusters. However, is this cluster has good characteristic for opening coffee shop business ?. The answer is best characteristic, this cluster has some venues that can attracts low of people that has potential to buy coffee. For example, Soccer Stadium, Shopping Mall, Hobby shop, Barber, Spa, Gym, etc (Figure 8).

Districts	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	11th Most Common Venue	12th Most Common Venue	13th Most Common Venue
0 Cilandak	Café	Asian Restaurant	Indonesian Restaurant	French Restaurant	Food Truck	Steakhouse	Fast Food Restaurant	Padangnese Restaurant	Diner	Restaurant	Chinese Restaurant	Japanese Restaurant	Noodle House
2 Kebayoran Lama	Bakery	Japanese Restaurant	Dessert Shop	Chinese Restaurant	Steakhouse	Asian Restaurant	Ice Cream Shop	Café	Pizza Place	Korean Restaurant	Bubble Tea Shop	Seafood Restaurant	Indonesian Restaurant
3 Kebayoran Baru	Japanese Restaurant	Indonesian Restaurant	Food Truck	Noodle House	Korean Restaurant	Sushi Restaurant	Hotel	BBQ Joint	Café	Steakhouse	Italian Restaurant	Seafood Restaurant	Salon / Barbershop
4 Mampang Prapatan	Restaurant	Asian Restaurant	Food Truck	Noodle House	Bakery	Indonesian Restaurant	Snack Place	Japanese Restaurant	Steakhouse	Middle Eastern Restaurant	Hotel	Hobby Shop	Fast Food Restaurant
8 Setiabudi	Hotel	Japanese Restaurant	Café	Buffet	Shopping Mall	Italian Restaurant	Dim Sum Restaurant	Bar	Wine Bar	Indonesian Restaurant	Lounge	Performing Arts Venue	Food Court

Figure 8. Dataframes of first cluster

Second Cluster, same as first cluster that restaurant is the dominant venues, however it has less variation than first cluster. To answer whether this cluster has good characteristic for opening coffee shop business. The answer is good characteristic, because this cluster has Soccer Stadium, Hotel, Bookstore, Clothing Store, Supermarket, Campground, Schools, etc (Figure 9).

Districts	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	11th Most Common Venue	12th Most Common Venue	13th Most Common Venue
1 Jagakarsa	Indonesian Restaurant	Asian Restaurant	Soccer Stadium	Food Court	Café	Hotel	Lake	Noodle House	Other Great Outdoors	Park	Flea Market	Pharmacy	Department Store
5 Pancoran	Convenience Store	Indonesian Restaurant	Asian Restaurant	Pizza Place	Fast Food Restaurant	Clothing Store	Bookstore	Steakhouse	Street Food Gathering	Supermarket	Music Venue	Noodle House	Food Court
6 Pasar Minggu	Convenience Store	Indonesian Restaurant	Asian Restaurant	Noodle House	Food Truck	Café	Japanese Restaurant	Food Court	Breakfast Spot	Chinese Restaurant	Caribbean Restaurant	Restaurant	Campground

Figure 9. Dataframes of second cluster

Third cluster has quite good characteristic for opening coffee shop, However Pesanggrahan has worse characteristic because top 10 most common venues are mostly food business, there is only gym that has positive impact. it is little different with Tebet, that has Art Gallery and Karaoke Bar that gives more positive impact (Figure 10).

Districts	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	11th Most Common Venue	12th Most Common Venue	13th Most Common Venue
7 Pesanggrahan	Indonesian Restaurant	Pizza Place	Food Truck	Bakery	Café	Burger Joint	Soup Place	Gym	Convenience Store	Noodle House	Restaurant	Music Venue	Fried Chicken Joint
9 Tebet	Indonesian Restaurant	Asian Restaurant	Bakery	Café	Art Gallery	Karaoke Bar	Seafood Restaurant	Pizza Place	Steakhouse	Donut Shop	Dessert Shop	Middle Eastern Restaurant	Convenience Store

Figure 10. Dataframes of third cluster

Result from all of this, we can rank the cluster from best to worst in terms of best characteristic for opening coffee shop business are

1. First Cluster
2. Second Cluster
3. Third Cluster

Therefore, from good candidates that we obtained by filtering the districts using negative venues (coffee shop venues) those are Pesanggrahan, Pasar Minggu, and Jagakarsa. We recommend the best district candidates for further analysis are **Pasar Minggu and Jagakarsa** based on cluster analysis.

## 5. Conclusion

In this project, we will give best district candidates recommendation for strategic locations problem based on neighbouring business which can help stakeholders for further analysis in opening coffee shop business. By using wikipedia, geopy, and Foursquare we successfully create dataset that contains nearby venues around 1200 meter from each districts. From the analysis, we recommend the best district candidates for further analysis are Pasar Minggu and Jagakarsa.

For final decision, stakeholders need to considered other key success factor that is,

1. Innovative product
2. Offer value for money but remain competitive
3. Cosy and clean venue
4. Good marketing and innovative promotions.
5. Innovative in selling and distribution.

## 6. References

- [1] [https://id.wikipedia.org/wiki/Kota Administrasi Jakarta Selatan#cite\\_note-JAKSEL-1](https://id.wikipedia.org/wiki/Kota Administrasi Jakarta Selatan#cite_note-JAKSEL-1)
- [2] <https://nowjakarta.co.id/dining/culinary-talk/the-emerging-business-of-coffee-shops-in-indonesia>
- [3] [https://id.wikipedia.org/wiki/Daerah\\_Khusus\\_Ibukota\\_Jakarta#cite\\_note-DKI2020-3](https://id.wikipedia.org/wiki/Daerah_Khusus_Ibukota_Jakarta#cite_note-DKI2020-3)
- [4] <https://github.com/geopy/geopy>
- [5] <https://developer.foursquare.com>