Assessing Hotel Investors in Istanbul

Ahmad M Dehcheshmeh

09.09.2019

1. Introduction

1.1 Background

Istanbul is the most well-known city in Turkey and one of the great metropolises, straddling both Europe and Asia where economy and culture from all over the world meets. The number of foreigners visiting Turkey went up 18.05 percent year-on-year to 5.319 million in June 2019 after the crises for past years. Now as tourist returning back to the city more and more hotels are opening and asking themselves, where would be the best location for the business and visitors?

In the meantime, new neighborhoods like Balad in Fatih are making a great effort to become more attractive to visitors but are they ready for all the expectations visitors might bring with them? Or are there well-known areas still at their peak?

1.2 Business Problem

The objective of this project is to analyze and select the best location in the city of Istanbul to open a new hotel. Hereby, it is important to consider the available facilities that are especially attractive for tourists when visiting Istanbul, when it comes to select a place for investors.

1.3 who is interested

There are many interested investors in the region or from other countries that are willing to invest and open a new hotel in Istanbul these days, this report will give them an idea or different boroughs in Istanbul and their facilities so that can help them to make a better decision when it comes to investing in hotel business in Istanbul.

2. Data collection

The following data is needed to solve the problem:

- A list of boroughs in Istanbul
- Latitude and longitude coordinates of those boroughs in order to map.
- Venue data collected from Foursqire API

2.1 Data collection

In this report the first data was collected from https://geo.nyu.edu/catalog/stanford-nj696zj1674 / Second-level Administrative Divisions of the Turkey from Spatial Data Repository of NYU. A Json file, where we could find all the cities in Istanbul with their boroughs. The data was reduced to only Istanbul with its 36 districts.

In the next part with help of geocode made it possible to collect all the coordinates for each borough in Istanbul and later joined in a new dataframe as it has shown in the table 1. And later map the city of Istanbul with its boroughs used in this report.

Table 1 Different Boroughs of Istanbul and their coordinates

:	Borough	Cities	Latitude	Longitude
0	Çatalca	Istanbul	41.143563	28.461969
1	Çekmekoy	Istanbul	41.054321	29.244539
2	Adalar	Istanbul	40.875931	29.094742
3	Ümraniye	Istanbul	41.022269	29.090073
4	Üsküdar	Istanbul	41.029308	29.032635
5	Arnavutkoy	Istanbul	41.068394	29.041154

Figure 1 The city of Istanbul and its Boroughs
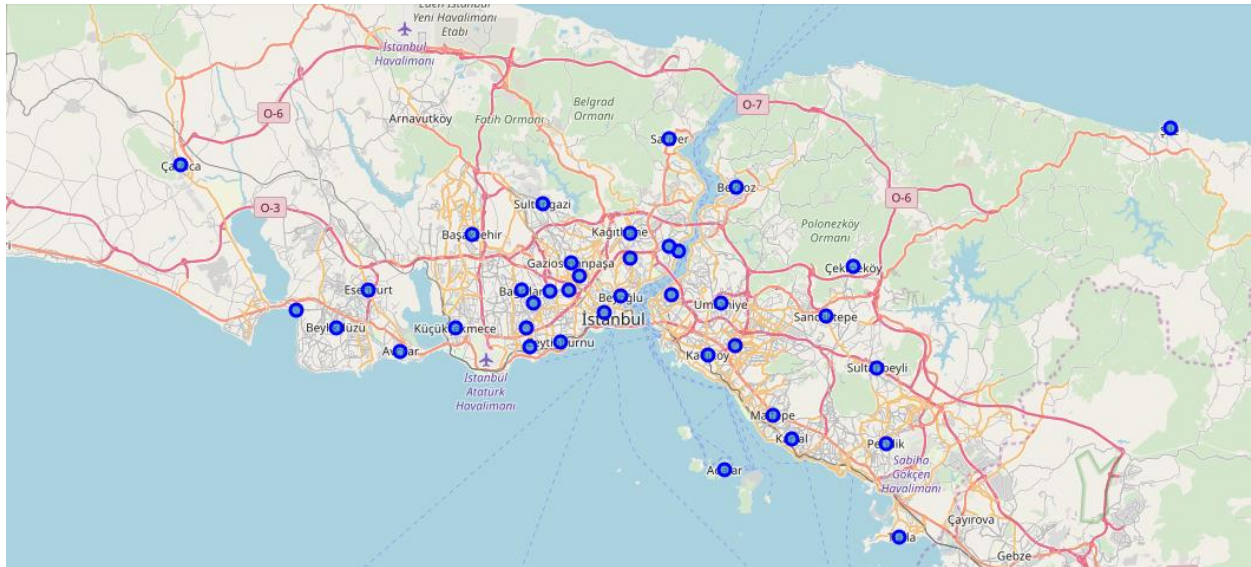
In the following step, Foursqure API was used to start utilizing to explore the boroughs and segment them.

3. Methodology

In order to give the investors a general out looking of each borough. Each borough was analyzed with help of Foursqure API and categorized, there are in total 246 categories in these boroughs. The first step that was needed to take was to create a credentials, and from there it was possible to start exploring.

Let's have a look at the first borough in our dataframe 'Çatalca'. A request was sent to the Foursqure to find out the top 100 venues that are in 'Çatalca' within the 500 meters. In return the Foursqure sends a josn file back with all the venues, the next step was to read and clean this json file and put into a datafarme. The table 2 below was created with 85 venues. This step was repeated for all the other boroughs.

Table 2 Venues of Çatalca

	name	categories	lat	lng
0	Mlt Butik	Boutique	41.143915	28.461881
1	Gloria Jean's Coffees	Coffee Shop	41.143941	28.463221
2	Fıtness Club Çatalca GYM	Gym	41.143929	28.463876
3	Çatal CAFE	Café	41.144206	28.461303
4	Akbulut Optik	Optical Shop	41.141648	28.463052

After having all the boroughs with their venues, it was needed to find out the most common places or venues of these boroughs, so the investors can have an idea of what borough would be suitable for them based on their desire and off course the visitors as well. In order to do that each all the venues were grouped by their boroughs and then taking their mean if frequency of occurrence of each category and put into a new dataframe as it shown in table 3. In the figure 2 the number of venues for each borough were plotted and shown.

Table 3 The top Ten venues in each borough in Istanbul

	Borough	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	Adalar	Café	Seafood Restaurant	Bed & Breakfast	Historic Site	Tennis Court	Museum	Cafeteria	Pool	Mountain	Burger Joint
1	Arnavutkoy	Seafood Restaurant	Café	Boat or Ferry	Lounge	Cocktail Bar	Restaurant	Art Gallery	Pastry Shop	Lighthouse	Coffee Shop
2	Atasehir	Café	Restaurant	Bistro	Lounge	Coffee Shop	Gym Pool	Doner Restaurant	Steakhouse	Kebab Restaurant	Bakery
3	Avcılar	Café	Dessert Shop	Restaurant	Gym / Fitness Center	Bar	Breakfast Spot	Coffee Shop	Sporting Goods Shop	Steakhouse	Wings Joint
4	Bahçelievler	Café	Dessert Shop	Turkish Restaurant	Restaurant	Bakery	Gym	Burger Joint	Pide Place	Ice Cream Shop	Nail Salon

Figure 2
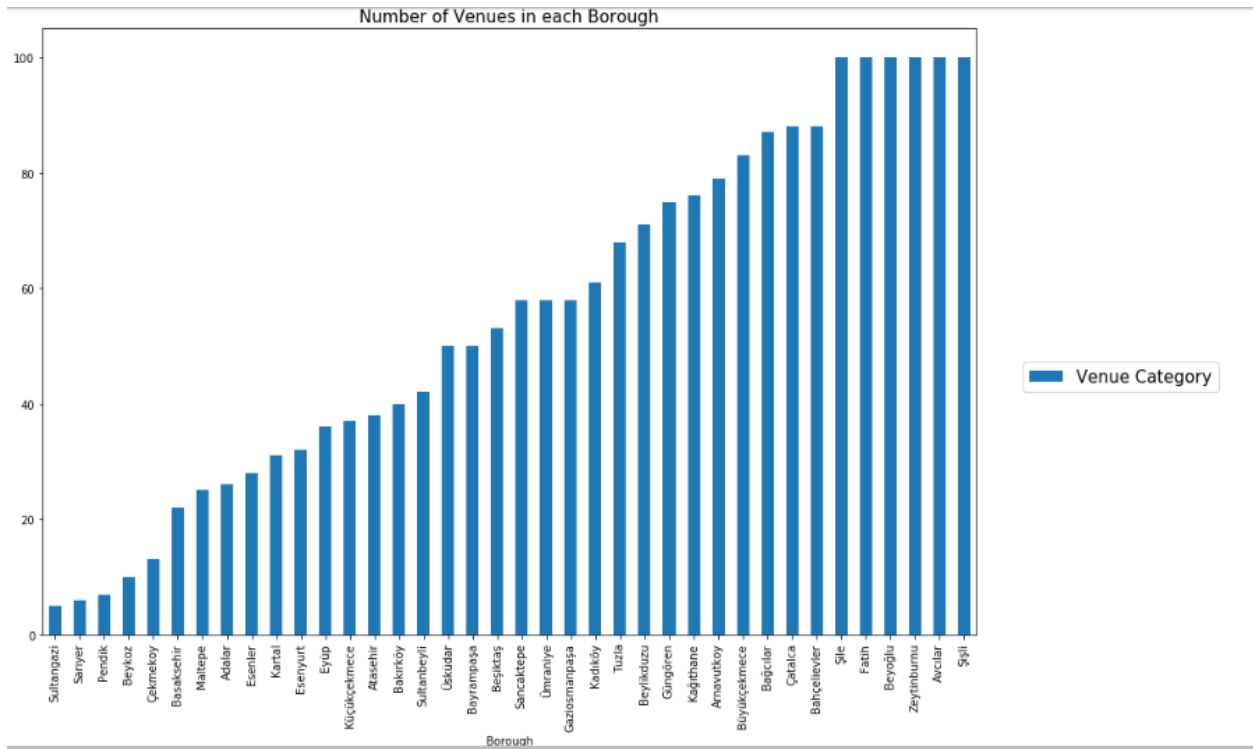
Now by using clustering it was possible to class similar boroughs into three cluster, so it is possible for the investors to have a better awareness. Below map shows all the boroughs that were clustered in three.

Map of Istanbul with clusters

4. Discussion

This analysis is trying to give a possibility for new investors to have a better understanding of each borough in Istanbul, when it comes to investing in hotels. In this study I only considered the facilities that each borough is offering, therefore the investors can select which borough has more relevant facilities for their guests and themselves, and off course there are more indicators that are effecting the investors but confidently lots of them that can be cove by using Foursqure API and later classification of venues.

The top boroughs that have the highest venues are Şile,Fatih, Beyoğlu, Zeytinburnu, Avcılar, Şişli as it was shown in the figure. It is possible with a bit of changing in our codes to dig exactly what investors are looking for, like how many foreign restaurants or museums, public places, gyms and coffee shops are in specific place.

5. Conclusion

As more tourist are coming back to Istanbul lot of stakeholders see this as an investment in hotel business, in this research different boroughs of Istanbul were analyzed for hotel investors based on the number of facilities that each borough can offer and let investors select where to invest.