Coursera Capstone - The Battle of Neighborhood

Pirjo Havia

The Possibility to open a New Restaurant in Helsinki

Introduction/Business Problem:

My cousin lives in Finland in a quite small town which has approximately only 10000 inhabitants. He has there a restaurant which has operated mainly as a lunch restaurant. My cousin has several times told that he would like to open a restaurant in Helsinki where are many more inhabitants.

Up to this point he has succeeded with his restaurant in that small town. When Finnish government decided to close all restaurants until the end of May because of COVID-19, my cousin also had to close his restaurant. Now at this moment it seems that this kind of business is slowly recovering but in that small town where my cousin lives, recovering will take too long time. My cousin decided that now it is time to make that big decision to open a restaurant in Helsinki. He knows that the competition will be fierce, when the restaurants which are now closed, will open at about the same time.

My cousin is certainly not the only one who wants to start new restaurant business. This analysis is a good addition for decision making.

To succeed the restaurant should be in a neighborhood where population will grow at least 10000 inhabitants until year 2030, not too many competitors in the same neighborhood at this time and it would also help if the transport connections are good.

Data

Based on definition of my cousin's problem, factors that will help him to decide are:

- All venues of neighborhood area through Foursquare API.
- Top venue categories in neighborhoods
- The amount of competitors
- Growth of population is minimum 10000

Following data sources will be needed to generate the required information:

- Wikipedia page of Helsinki neighborhoods
  https://fi.wikipedia.org/wiki/Helsingin_alueellinen_jako
- Geolocator to get coordinates of neighborhoods.
- A sample of a study of Helsinki population growth from year 2019 to year 2030, Helsinki population growth research
 https://www.hel.fi/hel2/tietokeskus/julkaisut/pdf/18_10_30_Tilastoja_18_Vuori_Kaasila.pdf

The explore function is used to get the most common venue categories in each neighborhood of Helsinki. Also clustering neighborhoods is used to give similarity information to my cousin.

Methodology

The methodology section describes how the analysis is conducted.

At first we need the Helsinki neighborhoods and their longitudes and latitudes. With that table we merge a sample of a study of Helsinki population growth. We calculate the percentage and sum of he population growth. Only the largest increases are taken into account.

The top20 neighborhoods in map:
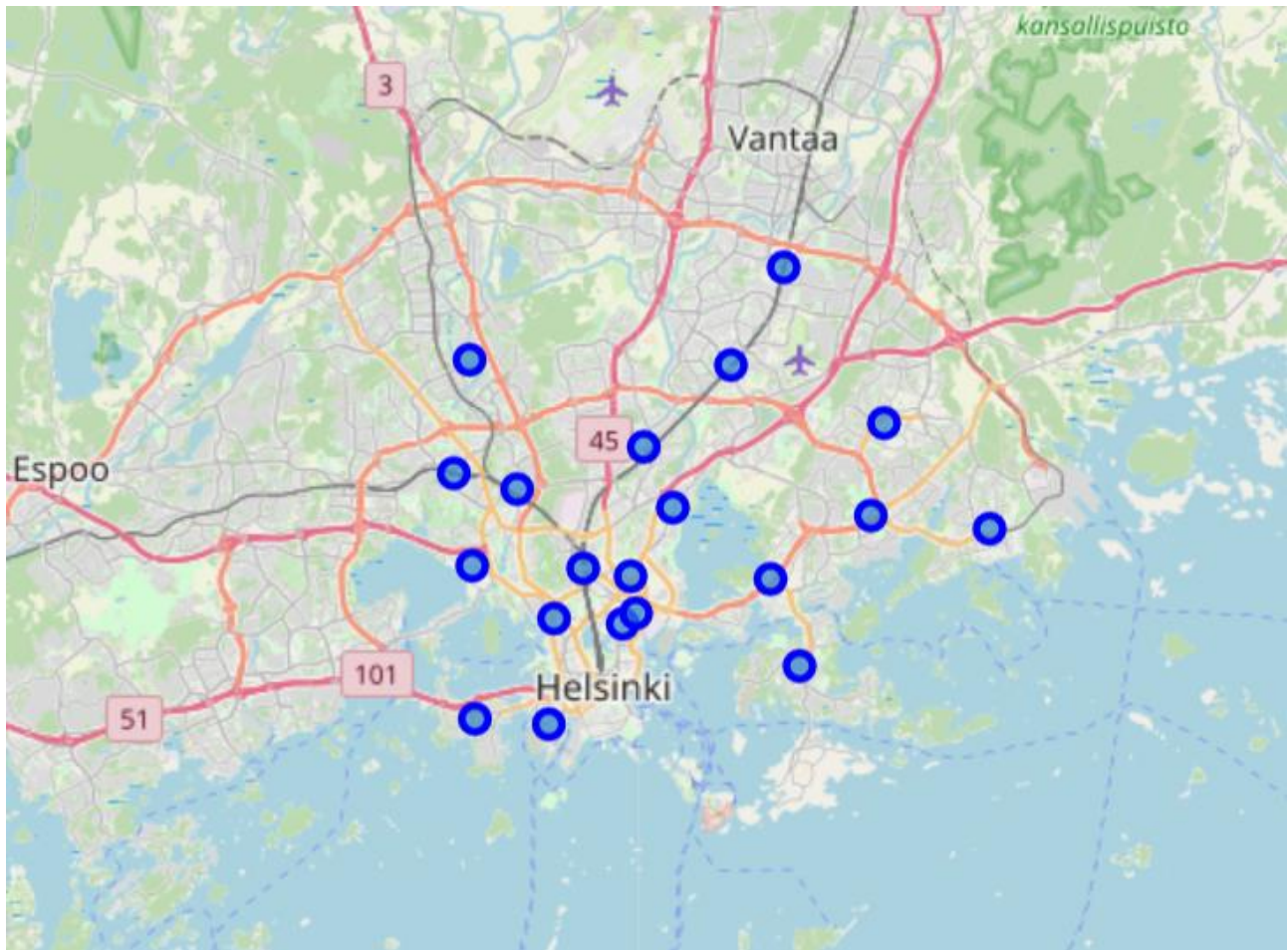
Foursquare API service is used to explore the neighborhoods to analyze and segment them.

The neighborhoods were clustered into 5 clusters by k-means and the values and a map is produced.

Finally, the competing venues were identified and calculated and the result was found out. The growth of population from 2019 to 2030 must be at least 10000 inhabitants, the amount of competitors must be under 5 and at least 3000 customer must be available for a venue.

Results

Helsinki has ca. 650000 habitants and the surrounding municipalities in the Helsinki region have about 1.5 million inhabitants. A very large number of those work in Helsinki and they are a good addition to Helsinki neighborhood customers.

Helsinki neighborhoods are relatively small populated. The population difference is big between neighborhoods in 2030. That is why only the largest increases and biggest neighborhood population were taken into account.

There were 141 unique venues. I grouped rows by neighborhood and by taking the mean of the frequency of occurrence of each category.

I checked each neighborhood along with the top 5 most common venues.

I also checked how many venues there are in each venue.

The clustering is presented in a map.
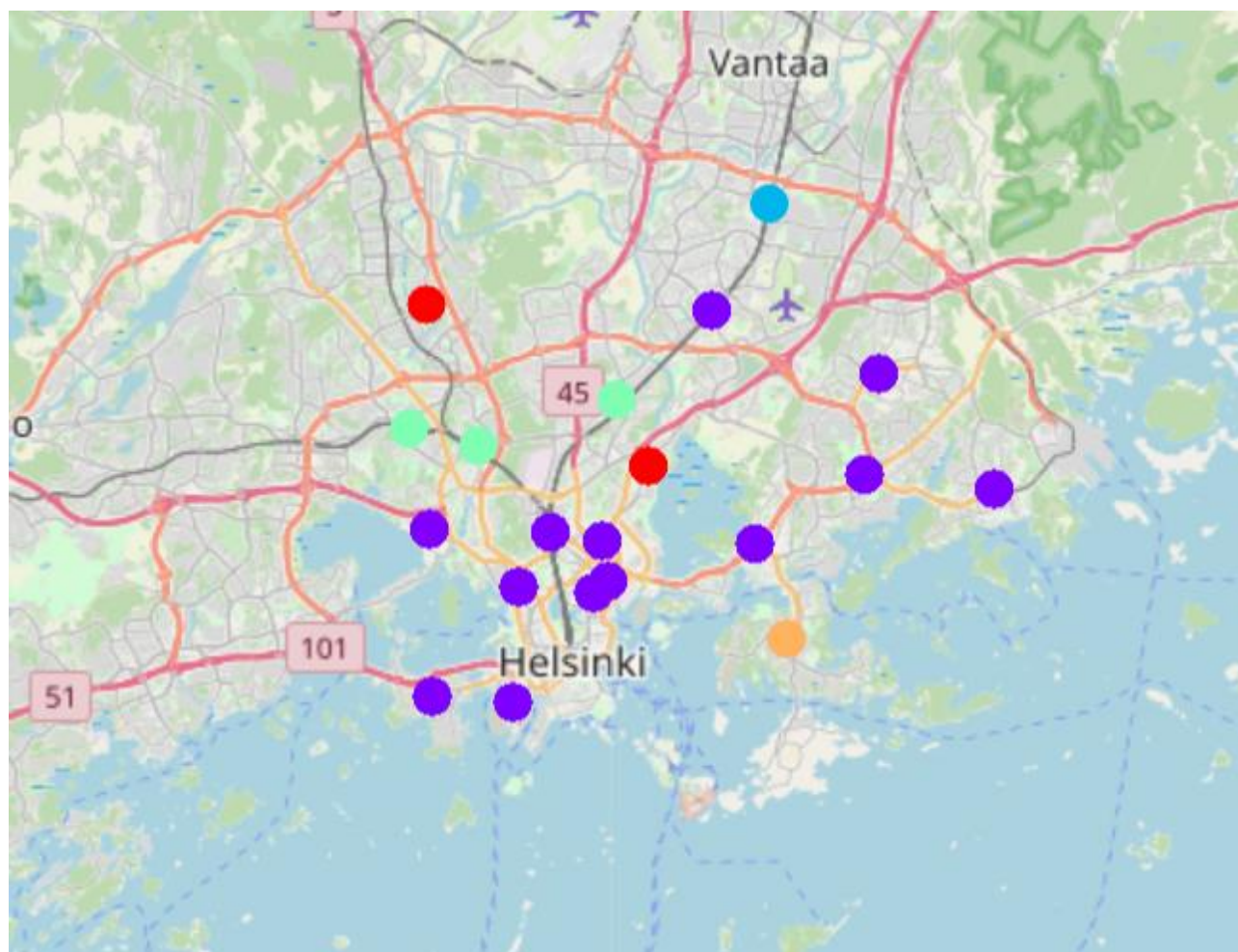
Finally I identified and counted the competing venues and the results are presented in a table.

	Neighborhood	2030	Growth	Competitors	Customers/Venue	Assessment
0	Vuosaari	43286	4463	1	43k	Potential location
1	Kallio	42852	12918	7	6k	Too many competitors
2	Mellunkylä	41397	2230	7	6k	Too many competitors
3	Kaarela	36259	7385	0	inf	Potential location
4	Malmi	34712	5338	4	9k	Potential location
5	Herttoniemi	32800	3916	4	8k	Potential location
6	Laajasalo	31332	11317	0	inf	Best location
7	Vanhakaupunki	29243	3823	6	5k	Too many competitors
8	Haaga	28213	531	1	28k	Potential location
9	Lauttasaari	26462	2068	4	7k	Potential location
10	Sörnäinen	22998	12819	6	4k	Too many competitors
11	Vartiokylä	21014	-1336	6	4k	Too many competitors
12	Puistola	20361	-76	0	inf	Potential location
13	Pitäjänmäki	19968	1689	1	20k	Potential location
14	Länsisatama	19439	9168	4	5k	Potential location
15	Munkkiniemi	19213	1177	1	19k	Potential location
16	Oulunkylä	17659	2977	0	inf	Potential location
17	Vallila	16941	27	11	2k	Too many competitors
18	Taka-Töölö	16832	1256	8	2k	Too many competitors
19	Pasila	15527	6002	6	3k	Too many competitors

Discussion

Helsinki City is a relatively small city so for effective data analysis we would need even more venues in Foursquare. Lot of neighborhoods have small amount of many kind of venues to offer (most of them were restaurants). With adjusting k-means clustering we could have even better results.

When the number of venues has greatly increased, the result of this type of analysis is more reliable.

I also know in which neighborhoods there is significant construction output. I would suggest a couple of other neighborhoods are worth considering when starting a new restaurant business in Helsinki. Those can be seen in tables in this analysis.

Conclusions

This kind of data analysis can be a helpful for any investor who is planning to start a business. It provides competitive advance quite quickly.

The decision should not be made on the basis of this study alone. The results are always indicative only. You should also go on site to ensure that the environment also meets expectations. Also no one yet knows how COVID-19 will affect the future.

Laajasalo illustration made by Leena Junnila

References:

The illustration made by Leena Junnila

Helsinki picture Wikipedia

Helsinki neighborhoods https://fi.wikipedia.org/wiki/Helsingin_alueellinen_jako

Helsinki population growth research
https://www.hel.fi/hel2/tietokeskus/julkaisut/pdf/18_10_30_Tilastoja_18_Vuori_Kaasila.pdf