Capstone Project

Dibya Ranjan Sahu
August, 2019

1. Introduction/ Business Problem

In the past ten years Budapest has started to become a must go destination for every traveller visiting Europe. It has also become a great place to settle down or live for a short period of time, attracting many students and young professionals every year. It is a beautiful city, offering all the perks of Western capitals but at a much lower price.
In this period, the city has seen a spike in the number of cafes offering specialty coffee, pleasant atmosphere and outstanding customer services. However, they are all very similar. There are very few places where you could actually go drink a coffee and choose a book to read, and even less where you can buy the books that you started reading while sipping your coffee. In other words, a place where you could go and look for interesting readings while relaxing on sofas, having your favourite drink. I think this combination will attract a lot of customers interested in reading or only in coffee, but who would like to have their drink in a new, different atmosphere.

In this project I have tried to solve the following problem: **Which area in Budapest would be the most suitable to open a Bookstore&Café place**.

The main criteria for the selection of the location have been:
1. Area close to university/college
2. Area with less competitors (bookstores and cafes)
3. Close to central area

I have chosen these particular criteria since the target group will most probably be students/professionals/digital nomads/freelancers interested in reading or looking for a quiet, nice place to have coffee and study/read/work. Moreover, the lack of competition will definitely be an advantage. By being the only venue of such type in the area, it will make us the best by default, plus it will assure a constant flow of customers.

2. Data

To solve this particular business problem, I have used the Foursquare location data.
By using Foursquare APIs, I have gathered information about the universities, coffee shops and bookstores located in the central area of Budapest with the *search* query. This information contained location data(address, latitude, longitude, postal code, etc.), as well as the venue id and category. By exploring a specific venue, I have obtained information about venue id, category, location, contact, rating, tips, as well as photos, like, description, menu and others.
All data obtained has been filtered according to the situation to get the best outcomes.

3. Methodology

My analysis consisted of 3 steps which I will elaborate in the following paragraphs.

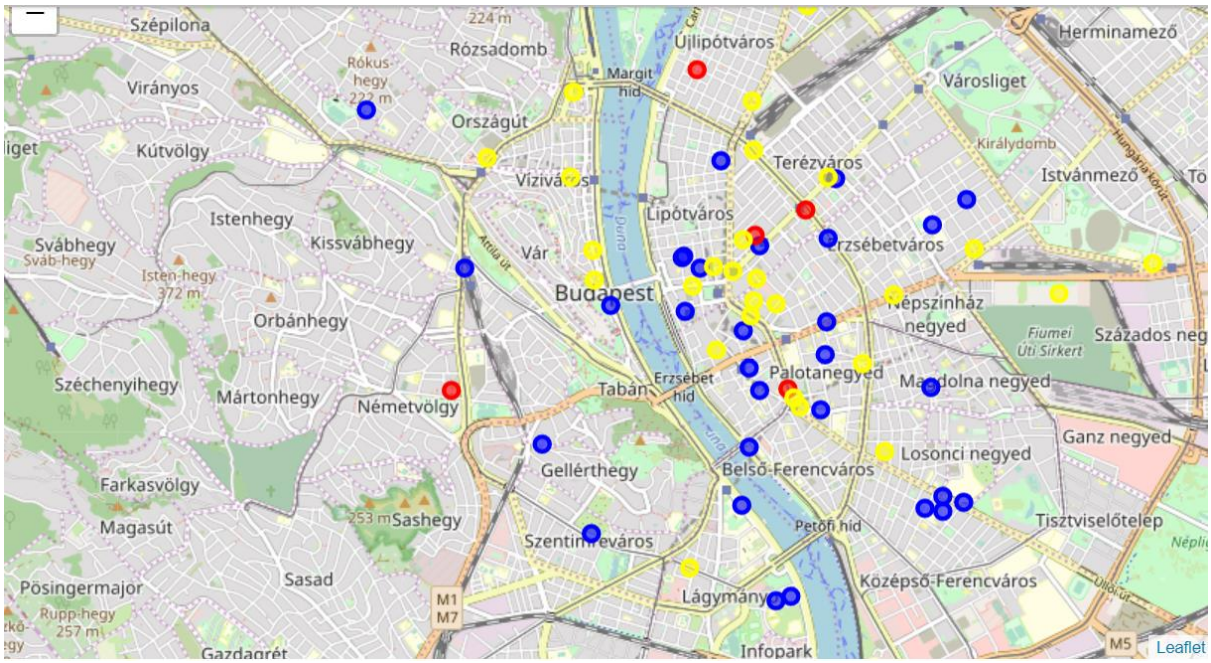
Step 1:

As mentioned in the Introduction, for the selection of the best district/location, I have taken in consideration three criteria:
1. the area has to be near a university;
2. the area should have less coffee shops and bookstores;
3. the area should be close to the city center.

For this, I have created search queries to find universities, coffee shops and bookstores in the central area of Budapest. The call has rendered a number or universities, coffee shops and bookstores in Budapest along with their location data, venue id and category.

I have visualized on a map all the venues found by using folium library. The universities have been marked with **blue** circles, the coffee shops with **yellow** and the bookstores with **red.**

That was the result:



The visualization helped me identify areas with potential in the inner city- the most central part of Budapest. However, things didn't seem quite right. The reason behind this was the use of *search* rather than *explore* for finding venues. As mentioned on the Foursquare Developer Webpage, both methods help find venues in an area, but their methodologies are slightly different. So, I did a further analysis within 500 m of the 'candidate' universities to double-check and make sure that the previous analysis has rendered all possible results. This brings us to the second step.

Step 2:

In this step I have chosen three candidate universities, namely the Central European University, Eötvös Loránd University and Corvinus University. All of them are situated in the inner center of Budapest and had the least number of coffee shops and bookstores nearby according to the initial search.

I have explored the area within 500 m from the candidate to find existing coffee shops and bookstores. I have put the results in dataframes and used the *.value_counts()* function to count the venues in every area. The analysis has rendered the following results:

For Central European University

	Count
Hotel	9
Italian Restaurant	8
Restaurant	8
Coffee Shop	6
Hungarian Restaurant	4
Wine Bar	3
Ice Cream Shop	3
Park	3
Plaza	3
Eastern European Restaurant	3
Bistro	3
Dessert Shop	3
Bar	3

For Eötvös Loránd University

	Count
Coffee Shop	10
Hungarian Restaurant	4
Vegetarian / Vegan Restaurant	4
Bar	4
Italian Restaurant	4
Restaurant	4
Hotel	4
Tea Room	3
Dessert Shop	3
Bakery	3
Chinese Restaurant	3
Café	2
Plaza	2
Steakhouse	2

For Corvinus University

	Count
Hungarian Restaurant	6
Coffee Shop	5
Bar	5
Ice Cream Shop	4
Café	4
Plaza	4
Bakery	3
Hotel	3
Vegetarian / Vegan Restaurant	3
Italian Restaurant	3
Gourmet Shop	2
Supermarket	2
Chinese Restaurant	2
Cocktail Bar	2

Given the numbers of coffee shops and bookstores in the areas and their proximity to the candidate university, I have concluded that the best option so far was the area around Corvinus University. It has less competitors as well as very central location with a nice view over the Danube. Moreover, it is definitely a tourist hub.

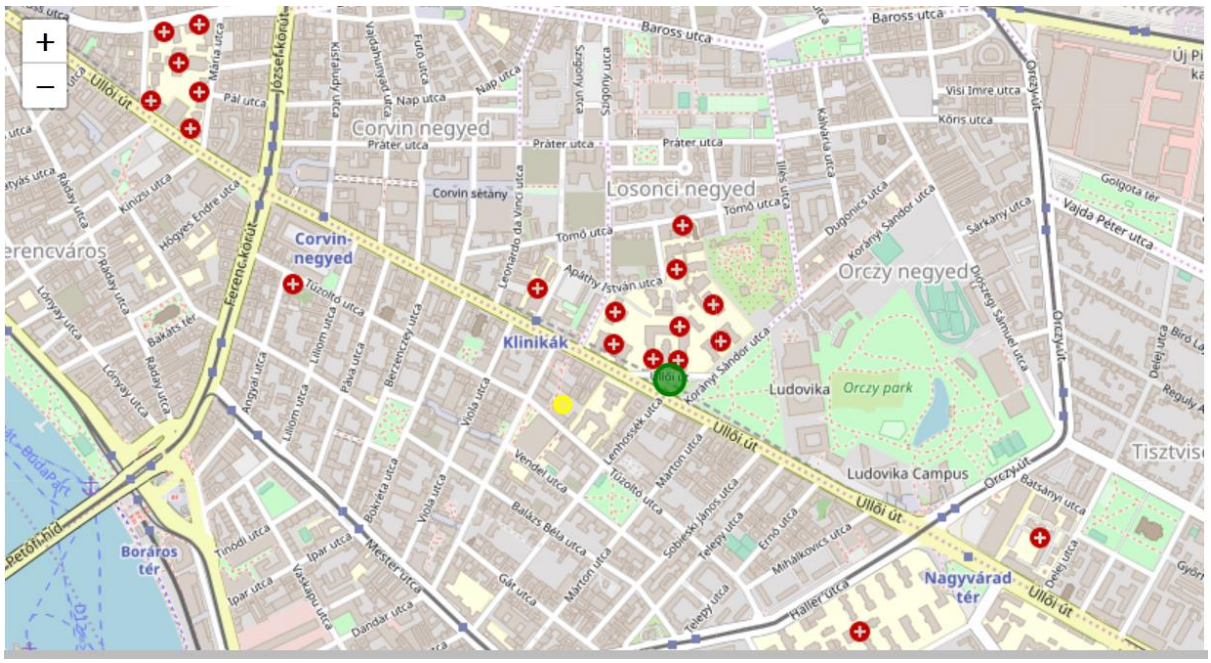
However, I wanted to consider a last option before concluding the analysis: the area around Semmelweis University.

Step 3:

In the last step I have explored the area around Semmelweis University by following the same approach as with the other universities. The analysis has rendered the results:

For Semmelweis University

	Count
Park	3
Chinese Restaurant	2
Bar	2
Hotel	2
Pub	2
Food & Drink Shop	2
Burger Joint	2
Flower Shop	2
Diner	2
Bakery	1
Grocery Store	1
Tea Room	1
Café	1
Bistro	1



This area has a lot of potential. There is just one venue selling specialized coffee and no bookstore. Yes, it's not a central area, neither is it popular with tourists, but it's a hub for medical students which are notorious for sleepless nights and studying hard. They will definitely be devoted customers.
So, I have decided to further analyse the venue(competitor) by obtaining its rating. The result was a rating of 7.3 which is more or less easy to beat. This was another advantage.

4. Results

The analysis has rendered 2 possible locations which are quite different. On the one hand, you have the area around Corvinus University, which is situated in a central location, close to university and has rather few competitors; and on the other hand- the area around Semmelweis University, which doesn't fulfil the initial criteria, but which could be a great candidate given the high number of students circulating in the area, as well as almost a lack of competitors.

5. Discussions

At this point it is up to the owner to decide what's the desired target group as well as the capital they want to invest initially.

Given the distance from the city center, the area around Semmelweis University will have much lower rental fees as well as high probability of finding more available spaces to rent. Other factors like attractiveness of each location and socio-economic dynamic in the neighborhood should also be taken in consideration.

However, both indicated locations would be suitable for opening a bookstore/cafe given the proximity to university and lower competition, and of course, the novelty of the whole concept for the specific area.

6. Conclusion

In this project I have tried to determine the best areas in Budapest for opening a bookstore/cafe. Using Foursquare location data for analysis, I have proposed 2 specific areas. However, the decision is in the hands of the stakeholders now.