

# Analyzing the neighborhood data of Anderlecht

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7<sup>th</sup> September 2020

## 1. Introduction

Brussels is one of diverse cities in the Europe. There are many internationals people living and working in European institutions. When people are moving to Brussels it they often having a questions where to live in Brussels. Obviously, each person might have specific criteria to choose a place of living in Brussels. Some people, prefer to live closer to work, another might prefer to live close to shopping center or close to restaurants or close to tram station in order to easily commute to work. Basically, it can be interesting to read about neighborhoods of Brussels and have some idea about the neighborhood before moving to Brussels. In this report only one neighborhood of Brussels namely Anderlecht will be analyzed based on Foursquare data. Moreover, k-means clustering will be applied to see which neighborhood are in the same cluster and what is their relationship.

## 2. Data acquisition

In order to analyze the neighborhood data of Anderlecht firstly we need to now the neighborhoods of Anderlecht. This part of Brussels have 5 neighborhoods Veeweyde, La Roue, Vogelenzang, Scherdemael and Quartier des Trefles. Initially, geographical location of this neighborhood have been gathered from google maps. Based on geographical location venues for each neighborhood have pulled from foursquare. As a result data table have been built for the neighborhoods. Data includes name of neighborhood, name of venue and geographical location and category of venue.

## 3. Exploratory data analyses

Neighborhood of Brussels have uploaded first (Fig. 1).

	Neighborhood	Latitude	Longitude
0	Veeweyde	50.829479	4.300651
1	La Roue	50.821117	4.293915
2	Vogelenzang	50.816111	4.276944
3	Scherdemaël	50.831078	4.289412
4	Quartier des Trefles	50.824371	4.288487

Figure 1. Neighbourhoods of Brussels.

Then this neighborhood are visualized in the map to have some idea where is Anderlecht (Fig. 2).

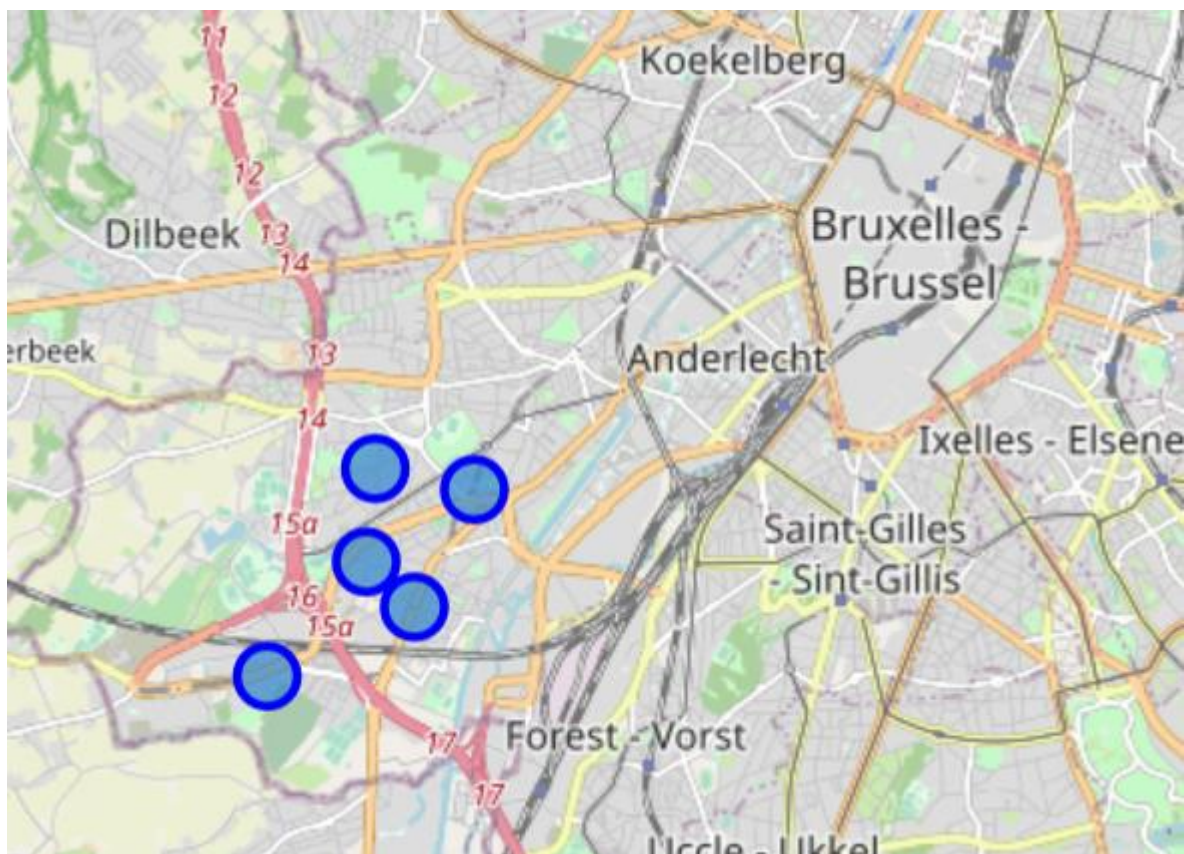


Figure 2. Map of Neighbourhoods of Anderlecht

As seen in the map neighborhood of Anderlecht is in South-West of Brussels. Then Venues for each neighborhood have pulled from foursquare. We can notice that there are more venues in Foursquare in 'Vogelenzang'(Fig. 4)

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Veeweyde	50.829479	4.300651	Colruyt	50.827320	4.302584	Supermarket
1	Veeweyde	50.829479	4.300651	André Destiné	50.828041	4.305459	Sandwich Place
2	Veeweyde	50.829479	4.300651	Saint-Guidon	50.833370	4.298189	French Restaurant
3	Veeweyde	50.829479	4.300651	Parc Astrid / Astridpark (Astridpark)	50.832871	4.298143	Park
4	Veeweyde	50.829479	4.300651	Basic-Fit	50.828529	4.305061	Gym / Fitness Center

Figure 3. Data from Foursquare.com

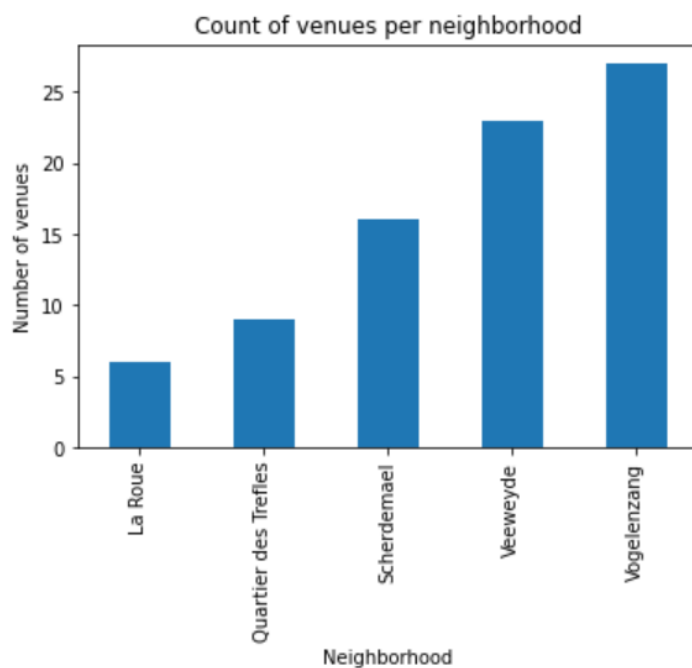


Figure 4. Count of Venues per Neighbourhood

The next things to look the most common top 5 venues for each neighbourhood, Fig. 5. It can be noticed there are different result for each venues. Only Quartier de Trefles and Veeweyde have a Park as most common venue. This also can be seen in the map as a green space. For La Roue the most common are eating places like pizza place or restaurant.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	La Roue	Pizza Place	Convenience Store	Food	Sandwich Place	Restaurant
1	Quartier des Trefles	Park	Gastropub	Supermarket	Sports Club	Gym
2	Scherdemaël	Supermarket	Tram Station	Park	Pet Store	Bakery
3	Veeweyde	Park	Tram Station	Supermarket	Martial Arts School	Metro Station
4	Vogelenzang	Pharmacy	Clothing Store	Restaurant	Women's Store	Electronics Store

Figure 5. 5 most common venues for each neighbourhood.

## 4. Clustering

Additionally, k-means clustering algorithm will be used to cluster the neighborhoods based on venues. 5 neighborhoods are divided into 3 cluster. Here we can see which neighborhood are in the same cluster. It can be seen that Veeweyde, Vogelenzang and Scherdemaël are in the same cluster. The common feature for this cluster is that they don't have much eating places. These neighborhoods are common for train stations, supermarket and Park. In other hand La Roue is a separate cluster which is mainly the eating places. Additionally, Quartier des Trefles is also separate cluster with sport clubs and gyms.

	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Veeweyde	50.829479	4.300651	1	Park	Tram Station	Supermarket	Martial Arts School	Metro Station
1	La Roue	50.821117	4.293915	0	Pizza Place	Convenience Store	Food	Sandwich Place	Restaurant
2	Vogelenzang	50.816111	4.276944	1	Pharmacy	Clothing Store	Restaurant	Women's Store	Electronics Store
3	Scherdemaël	50.831078	4.289412	1	Supermarket	Tram Station	Park	Pet Store	Bakery
4	Quartier des Trefles	50.824371	4.288487	2	Park	Gastropub	Supermarket	Sports Club	Gym

Figure 6. Cluster of Neighbourhood

## 5. Conclusion

Neighborhood data of Anderlecht have been analyzed in this report. It is been observed that there many diverse venues in Anderlecht. Choose a neighborhood in Anderlecht can be specific to the individual. There are more venues in Veeweyde. If person is more into restaurants then he/she have to go to La Raue. Adversely, if the person is looking for more sport clubs then he/she has choose

Quartier des Trefles as a living place. One thing that we need to consider is that conclusion is based on data from foursquare. This data is collected based on inputs of user. That is why correctness of the data can be questioned.