

Where to locate a new Italian restaurant in Antwerp, Belgium

Coursera Capstone Project

Overview

Location influences the success or failure of a restaurant in a host of ways, including interrelated to the immediate surroundings of the restaurant site, accessibility and competitors.

The questions to be answered:

- Is there enough room for a new restaurant on the market?
- How location works for surrounding businesses?





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Problems to solve

1

Gathering data to explore the city from different viewpoints , as location and municipality, venues, local trends and business environment.

2

Clustering city's localities using machine learning techniques.

3

Discover relations between entities, assigned to the same cluster, making a business profile for each cluster.

4

Analyzing clusters profiles regarding its suitability for running a new Italian restaurant.



Project objective

To cluster localities of the city of Antwerp, Belgium based on its business surroundings, public catering and transport accessibility, to determine a suitable ones to run a new Italian restaurant.

Proposed solution

As the question requests to discover relations between variables, the clustering model K-Means will be built.



Target audience

Antwerp is the one of the most popular cities in West Europe, known as a large business and a touristic cluster, that ensures a high people traffic and attractiveness for investments in public catering field.

- 01 | Private investors in the public catering field
- 02 | Owners of running restaurants in Antwerp
- 03 | Fast food restaurant chains



Process

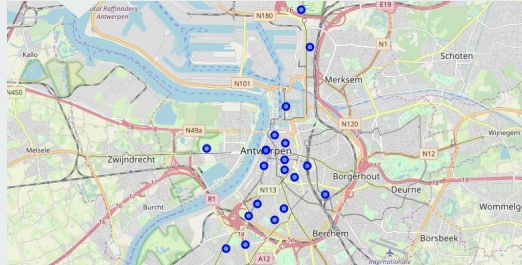


01

Collecting data from open sources: Open Data Antwerpen Portal, Wikipedia, Foursquare

02

Narrowing the research: focus on largest borough of the city of Antwerp, called 'Antwerpen'.



03

Explore the Antwerpen borough: collecting data over 1139 venues, in 196 unique categories

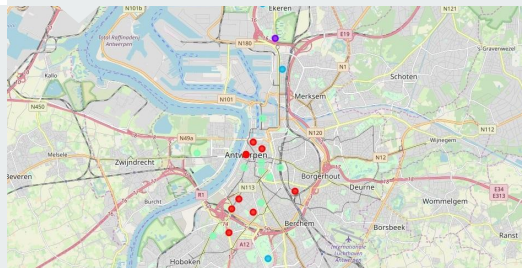

```

      venue  freq
0  Clothing Store  0.15
1      Boutique  0.07
2   Coffee Shop  0.06
3      Theater  0.04
4  Cosmetics Shop  0.04

```

Determining top 5 most pop venues in each locality by an average frequency of occasionality of different categories in each neighborhood.

Assigning all neighborhoods to 5 clusters using K-Means machine learning algorithm.



Clusters profiles were analyzed

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
1	Zuid	Bar	Pizza Place	Restaurant
	Zurenborg	Bar	Restaurant	Bistro
2	Tentoonstellingswijk	Park	Bakery	Grocery Store
	Schipperkwartier	Bar	Restaurant	Coffee Shop
3	Markgrave	Sandwich Place	Italian Restaurant	Supermarket
	Historisch Centrum	Bar	Coffee Shop	Cocktail Bar
4	Universiteitswijk	Bar	Coffee Shop	Sandwich Place
	Den Dam	Bar	Coffee Shop	Cocktail Bar
5	Bruderode	Coffee Shop	Bar	Pub



Deliverables

23

neighborhoods in Antwerpen
borough were explored

1139

venues were gathered with
Foursquare API

196

unique categories were
assigned



Conclusions

As an appropriate location to run a new Italian restaurant, we suggested the cluster having following neighborhoods:

Schoonbroek, Middelheim, Luchtbal

- Top categories in the area: sport clubs, parks, horeca, health & beauty service, that ensures families traffic, especially at the weekend.
- Accessibility: bus stations, parking, and foot traffic.
- There were no Italian restaurants spotted on those area.



Contacts

Created by: Anna Sukhareva,
data scientist

Place: Antwerp, Belgium

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Contacts: anna@linefeed.be