

# A. Introduction/Business Problem

## A.1. Description & Discussion of the Background

Amsterdam (number of inhabitants in Amsterdam is 850.000+) is the capital of the Netherlands, the country I live in (total number of inhabitants north of 17 million)

Reports show, on and off, that more and more 'Amsterdammers' leave (necessarily) their city. There are few affordable houses to buy, pushing people to look for alternatives.

Flevoland, the 12th and youngest province in the Netherlands (since June 27th 1985), is such an alternative. Flevoland is situated in the middle of the Netherlands with the capital Amsterdam closeby. It is cheaper, has space to grow and is located near Amsterdam and other big cities.

There are 6 municipalities in Flevoland (Almere, Lelystad(capital), Dronten, Urk, Zeewolde and Noordoostpolder). Number of inhabitants in the province are 400.000+ (as of 2019)

### Problem scenario

Even though these municipalities are said to have different characters. It will be of interest to realtors in the surrounding regions and Flevoland itself to know the differences in character between these municipalities and have information on the kind and spread of available venues. If they have a better understanding of this region they will be better able to advise their clients (businesses/families) in search of a new investment/location for their business or new home for a family.

Also for realtors dealing with expats moving back to the Netherlands, information regarding this young but full with potential province can be of interest due to the central location and relative low urbanization.

### Additional case study

As an extra case study consider a family with two children (9 and 13) and one on the way. The family currently lives in Amsterdam but want to move to a bigger house close to Amsterdam where the parents work. They have decided to move to Flevoland but have not yet decided where to go in Flevoland.

Before moving the parents decide on a list of criteria and wishes before they decide where to move to :

- The municipality needs schools in the neighborhood for their children
- There has to be some child care facility nearby (for the new addition to the family)
- Because the children are active in sports there must be a lively sporting environment with preferably a horse riding center in the vicinity.
- Accessibility to theatre and parks (as they are accustomed to in Amsterdam)
- Availability to swimming pools (preferably)

Next to these criteria any additional information on for instance crime and multicultural information would be welcome. Keep in mind that with the gathered information and methodology any case study can be 'solved' by providing relevant data to make an informed decision.

## A.2. Data Description

To solve the problem, we will make use of the following data:

- The site <https://postcode.site/nl>  
This site contains postal-codes, boroughs and neighborhoods in the Netherlands.  
I will scrape this site for relevant information and clean the data to be used in getting information from foursquare. Connecting the postalcodes, borough's or neighborhoods with their geolocations I can visualize the area and use some algorithms to find similarities and distinctions using foursquare information on venues.
- The **Foursquare API** to get the most common venues of given Municipalities using the postalcodes.  
Next i can use boxplots to show the differences/similarities between the 6 municipalities
- The site <https://opendata.cbs.nl/statline/#/CBS/nl/>  
This site (CBS stands for : Central Bureau of Statistics) collects information on all kinds of aspects in dutch society. I will use this site to gather information on the inhabitants and their cultural background.  
Also I will use this site to gather some crimedata.
- I will use geocoding databases for Europe to get the center coordinates of each postcode  
It is a database containing postalcodes with geolocations in Europe.  
[https://www.clearlyandsimply.com/clearly\\_and\\_simply/2010/10/geocoding-databases-for-europe.html](https://www.clearlyandsimply.com/clearly_and_simply/2010/10/geocoding-databases-for-europe.html)  
I will add missing geolocations using the geolocator code from coursematerial

The sites above will, I expect, provide me with enough data to pinpoint the similarities and differences of the municipalities.

Any problems along the way have to be solved creatively.

Finally using all this information I think it is possible to advise the family in the case study where to move.