Where to live in Delft?

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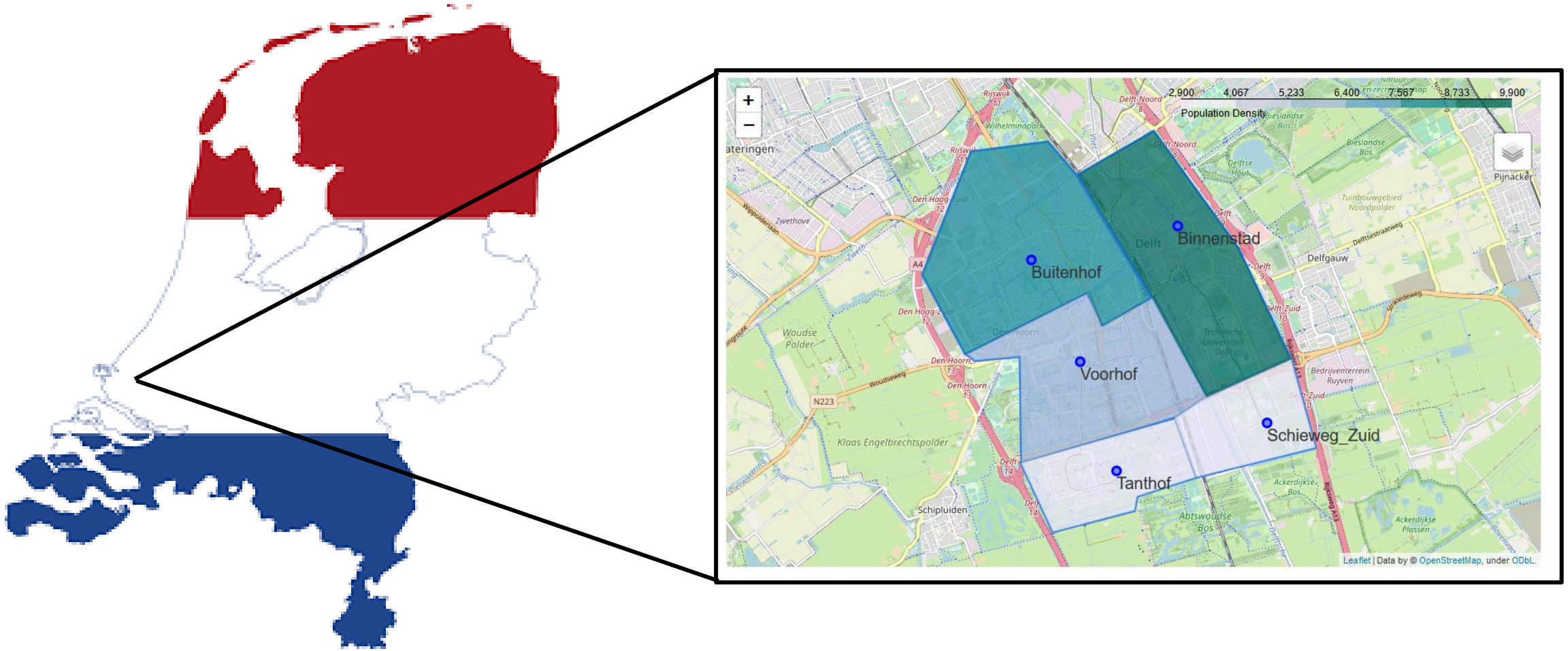


This study will develop a model to determine good neighborhoods in Delft to settle for young adults.

Data Collection:

Open source data has been used for this analysis:

- FourSqaure API
- Open data Delft

Model Features:

Trees in Delft

Water in Delft

Features will be:

- Tree population density per neighborhood
- Water area density per neighborhood
- Playground Tree population density per neighborhood
- Venues -> clustered in three groups and weighted according to personal preference.

Playground in Delft

Venues in Delft

KMN clustering of Venues in Delft

	lat	long	Square Km	Population	Pop. density (Pop./KM)	Trees	Playgrounds	Water_Area	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
Tanthof	51.982308	4.351760	5.86	17126.0	2900.0	6081	52	143141.75	0	Park	Fast Food Restaurant	Tram Station
Voorhof	51.996322	4.344202	5.02	30003.0	6000.0	8105	53	280144.68	0	Supermarket	Gym	Asian Restaurant
Binnenstad	52.013576	4.364522	4.49	44456.0	9900.0	5340	33	51698.36	0	Café	French Restaurant	Bar
Buitenhof	52.009339	4.334157	2.06	17990.0	8700.0	11673	33	589634.83	2	Supermarket	Pharmacy	Hockey Field
Schieweg_Zuid	51.988527	4.383054	2.26	8213.0	3600.0	3856	32	58019.08	1	Hockey Field	Stadium	Department Store

Cluster where categorized based on the frequency of there venues.

Cluster 0: Restaurant heavy
Cluster 1: Shop heavy Area
Cluster 2: Sport area heavy

} Will later be used to give weight to each preference

Attraction index model for each neighborhood of Delft

Normalized data by max value per column

	Pop. density (Pop./KM)	Square Km	Trees/km	Playground/km	Water_Area/km	Cluster Labels	cluster_values
Tanthof	0.000000	1.000000	0.000000	0.222222	0.047005	Restuarant heavy	2
Voorhof	0.442857	0.778947	0.124649	0.444444	0.161228	Restuarant heavy	2
Binnenstad	1.000000	0.639474	0.032620	0.000000	0.000000	Restuarant heavy	2
Buitenhof	0.828571	0.000000	1.000000	1.000000	1.000000	Shop heavy Area	3
Schieweg_Zuid	0.100000	0.052632	0.144308	0.777778	0.051537	Sport area heavy	1

$$Attraction - index = \left(\sum_{k=1}^{n} w_k p_k \right)$$

Weigh_factors (w_k):

w_pop_density = 4

w_trees = 1

w_playgroud = 3

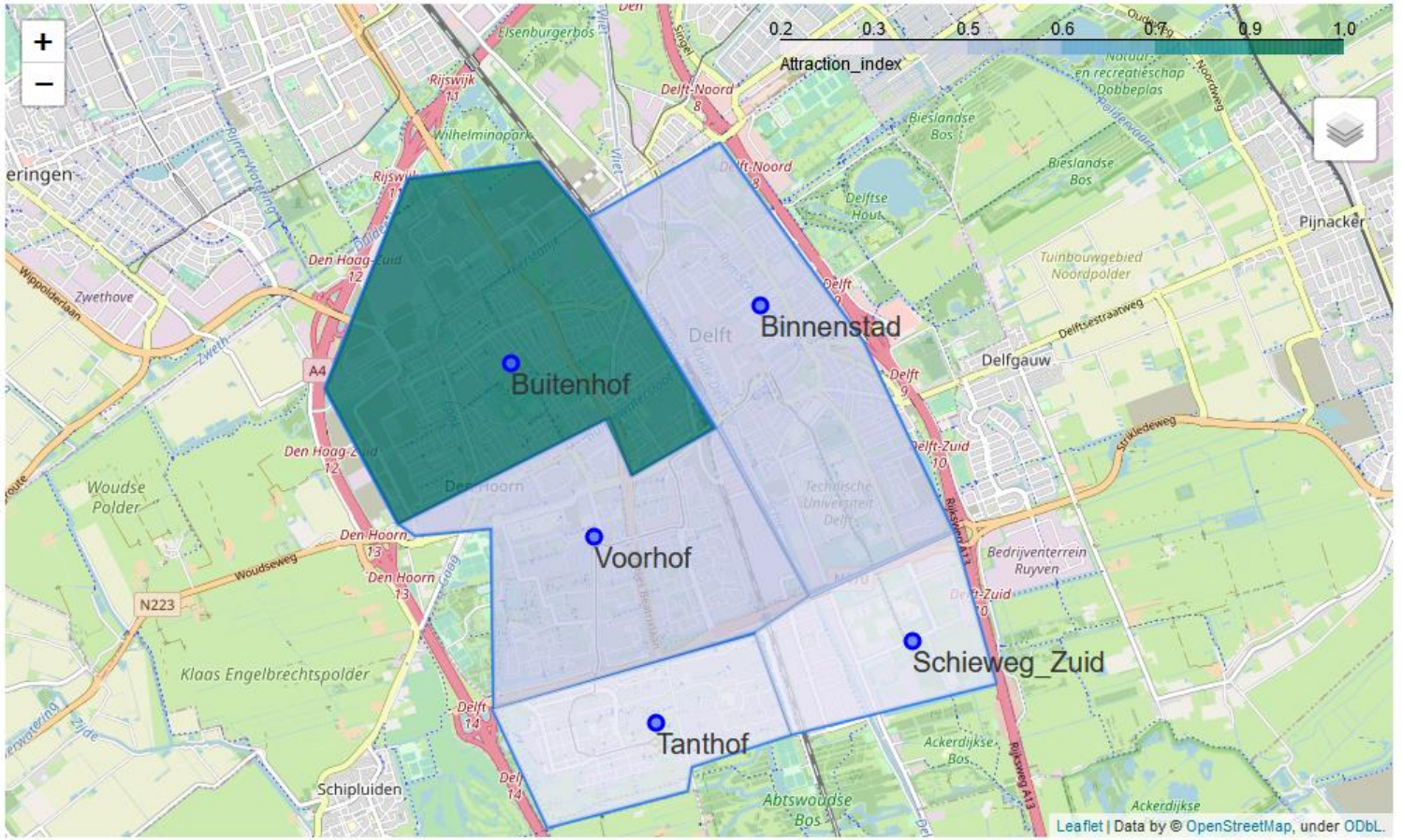
w_water = 5

w_clusterLabel → table

Column Value

Final Result

	Attraction_index
Tanthof	0.189476
Voorhof	0.394113
Binnenstad	0.393921
Buitenhof	1.000000
Schieweg_Zuid	0.270031



Discussion & Conclusion

Conclusion:

Best place to live in Delft (according to this model) **“Buitenhof”**

Model Limitations:

- The current model is heavily subjected to the author’s preferences, and can not be used as a general case. Different people value different things. The weight factors should be personalized every time you run the model.
- The same holds for the feature selection, the current selected features show a strong personal opinion. Many more features can be though of e.g. crime rates, house values, etc. Due to limitation in data availability, these have not been selected.