



Wine Bars Business Athens Analysis 2019

DECEMBER 31

This analysis was prepared in the context of Applied Data Science Capstone by IBM/Coursera The Battle of Neighborhoods

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Introduction – Business Opportunity

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Athens Tourism Growth

- The Greek Tourism Ministry is expecting Greece to see an increase in revenue from tourism and travel in 2019, compared to 2018. This trend is expected to continue in 2020.

Athens Nightlife

- Nightlife is one the highlights of Athens and business related to food and drinking has been always profitable.

Greek Wine Trend

- Greek wine is gaining reputation and opening a Greek wine related business is a good alternative to diversify from competition.

Introduction – Business Opportunity

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Business Opportunity – Wine Bars

- In the current analysis we will try to locate the *optimal location* for opening a ***new wine bar business*** in Athens within 2020.

How we will work

- For the analysis we will use data science tools to generate a cluster of promising neighborhoods based on the below-mentioned criteria:
 1. *locations that are not already crowded with bars*
 2. *areas with no wine bars in vicinity*
 3. *locations as close to city center as possible*
 4. *touristic areas or area with promising future*

Data Collection

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Based on definition of our problem, factors that will influence our decision are:

1. number of existing bars in each neighborhood (any type of bar).
2. number of and distance to Wine Bars in the neighborhood.
3. distance of neighborhood from city center.
4. trendy or famous areas proximity.

For the mapping analysis we will use regularly spaced grid of locations, centered around city center (Syntagma Square), to define Athens' neighborhoods.



Data Collection

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A series of **credible data sources** was used to extract/generate all necessary information required for the analysis. Specifically:

- Athens center's coordinates are located using **Google Maps API geocoding**. For the task a well-known Athens location, **Syntagma Square** will be selected.
- center points of candidate areas are **generated algorithmically**. The approximate address (longitude and latitude) of each center point is obtained using Google Maps API reverse geocoding.
- number of bars and their type and location in each neighborhood are obtained using **Foursquare API**.
- city's boroughs are mapped using a **public source providing their coordinates**.



Data I - Neighborhoods Mapping using GMA

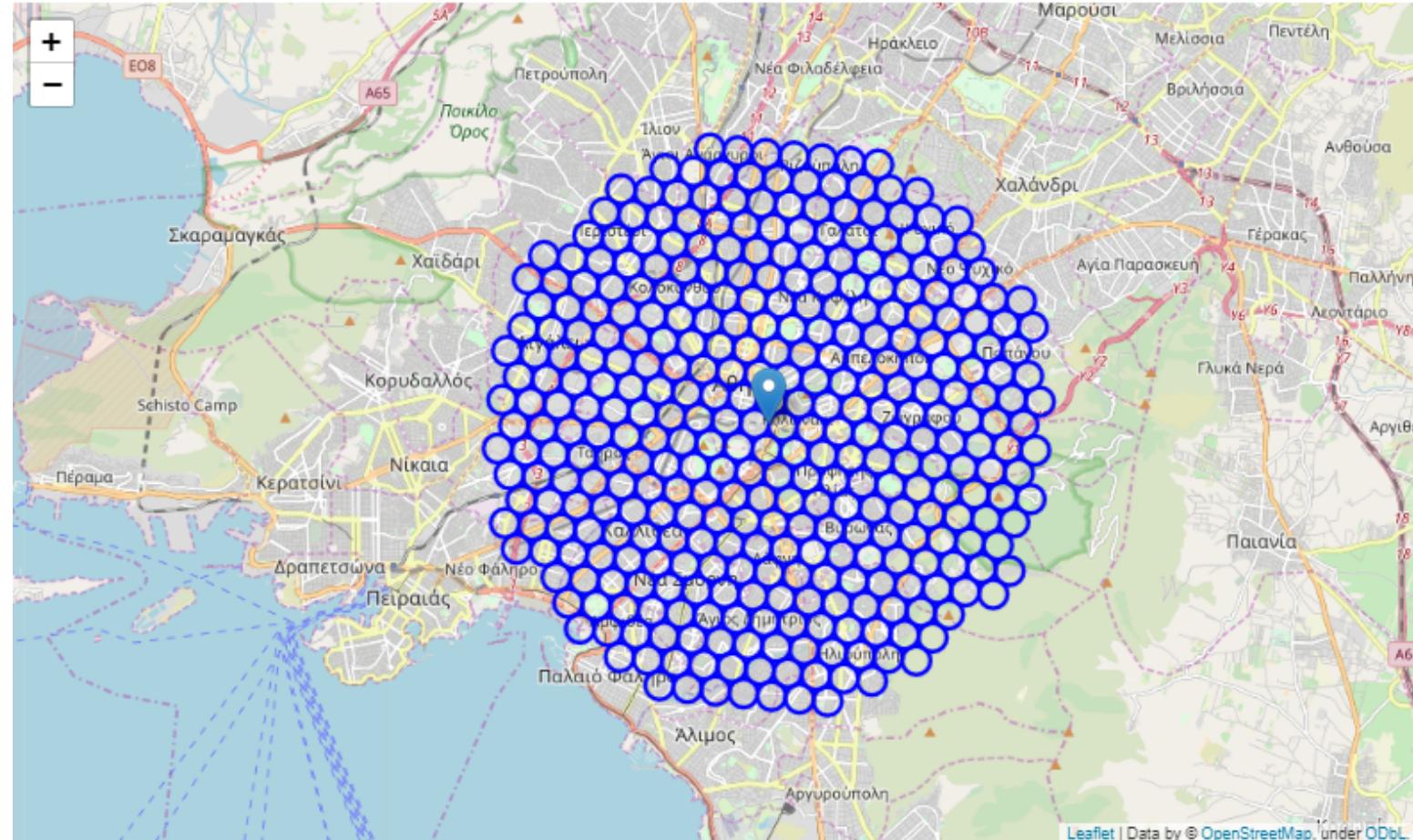
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- The area of interest extends over a radius of 6 km around the center of Athens (Syntagma Square) reaching the seafront.
- The grid of cells is covering an area of $\sim 113\text{km}^2 (\pi R^2)$ centered around Syntagma Square.
 - *Coordinates of Syntagma Square, Athens, Greece: [37.9756512, 23.7340008]*
 - *364 neighborhood centers where formulated.*

Data I - Neighborhoods Mapping using GMA

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364 neighborhood centers where formulated.



Data II - Locating Venues using Foursquare

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We used Foursquare API to get info of competitors in each neighborhood.

Competitors Definition

- belonging to Bars category in general.
- venues belonging to Wine Bars category
- Bistros and some types of restaurants where excluded

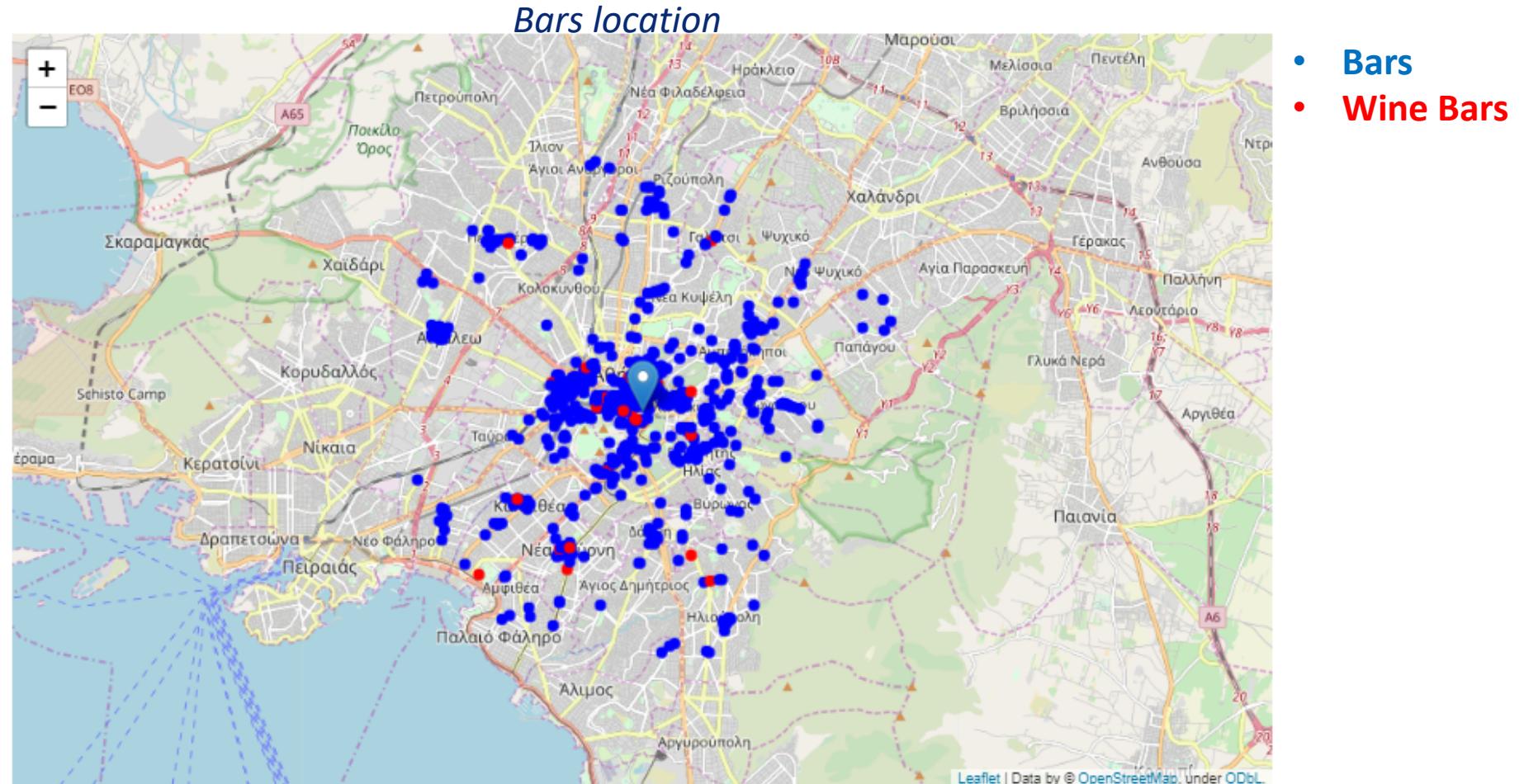
Data II - Locating Venues using Foursquare

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- Total number of bars: 794
- Total number of Wine bars: 33
- Percentage of Wine bars: 4.16%
- Average number of bars in each neighborhood: 2.0384615384615383

Data II - Locating Venues using Foursquare

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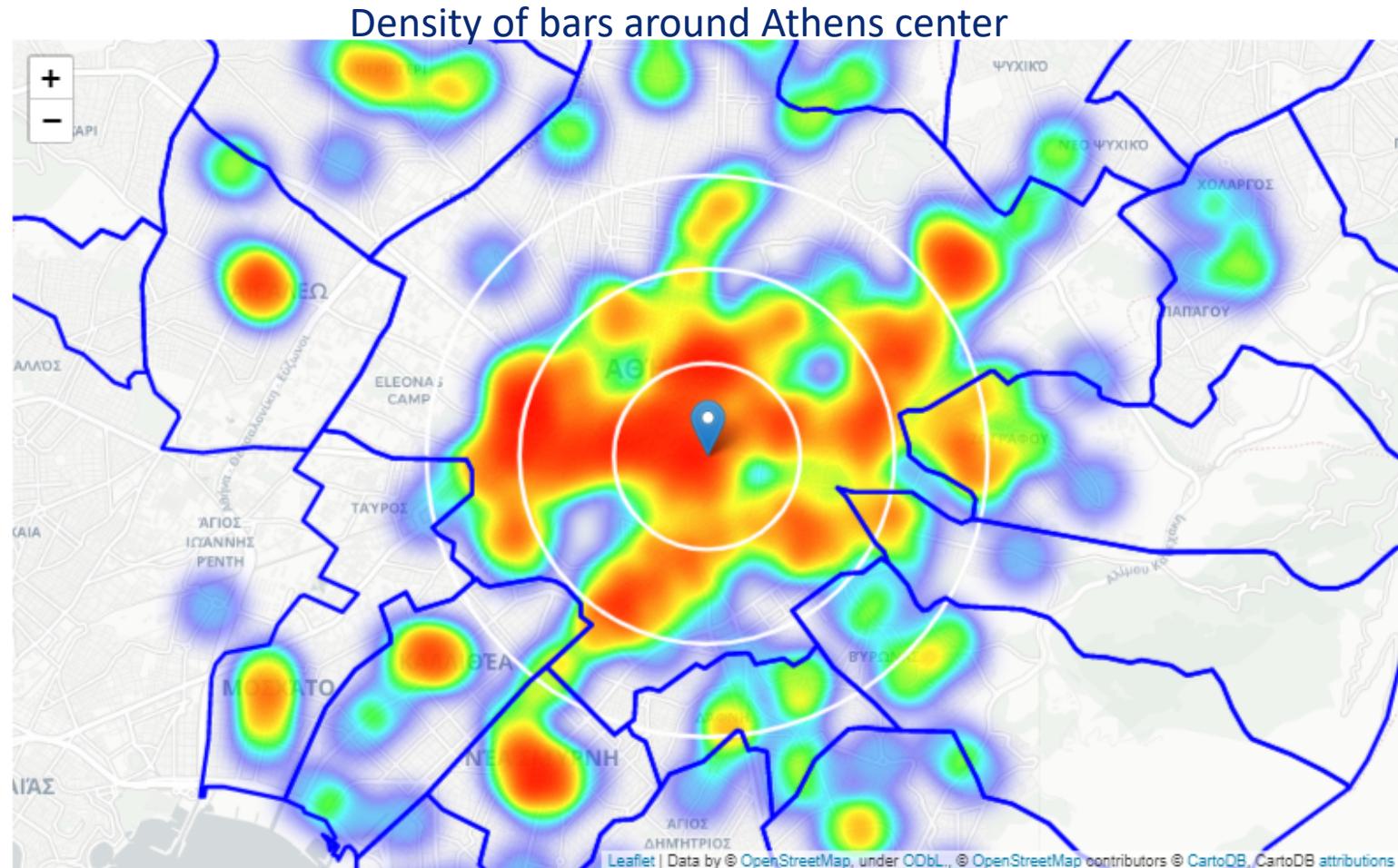
Methodology

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1. Calculate and explore the **levels of bar density** across different areas of Athens. Use heatmaps to identify a few promising areas close to center with low number of bars in general (*and no Wine Bars in vicinity*)
2. Focus on the most promising areas and create clusters of locations that meet some basic requirements.
 - take into consideration locations with no more than two bars in radius of 250 meters
 - Locations without Wine Bars in radius of 400 meters.
3. Create clusters (using k-means clustering) of those locations to identify generic zones / neighborhoods / addresses to use as starting point for final 'street level' exploration and search for optimal venue location by stakeholders.

Analysis - Density of bars

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Analysis - Density of bars

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- It is obvious that within a 2km radius Athens are really populated with bars. Pockets of low bar density closest to city center can be found:
 - in the third ring around Syntagma Square, especially in the south and north.
 - in the second ring in the north close Omonoia Square and South-east in Neos Kosmos
 - in the first ring is very crowded but still near Omonoia there is some space
 - Outside the third ring there are opportunities in the south-west

Analysis - Density of wine bars

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Density of wine bars around Athens center



Analysis – Areas of Interest

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- Based on the results we focus our analysis on areas south-west, south-east and north from Athens center -
- We have moved the center of our area of interest and focus in the following areas:
 - Omonoia Square
 - Koukaki & Petralona
 - Neos Kosmos



Koukaki

Analysis – Areas of Interest

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Koukaki & Petralona

Omonoia Square

Neos Kosmos

Density of bars around area of interest



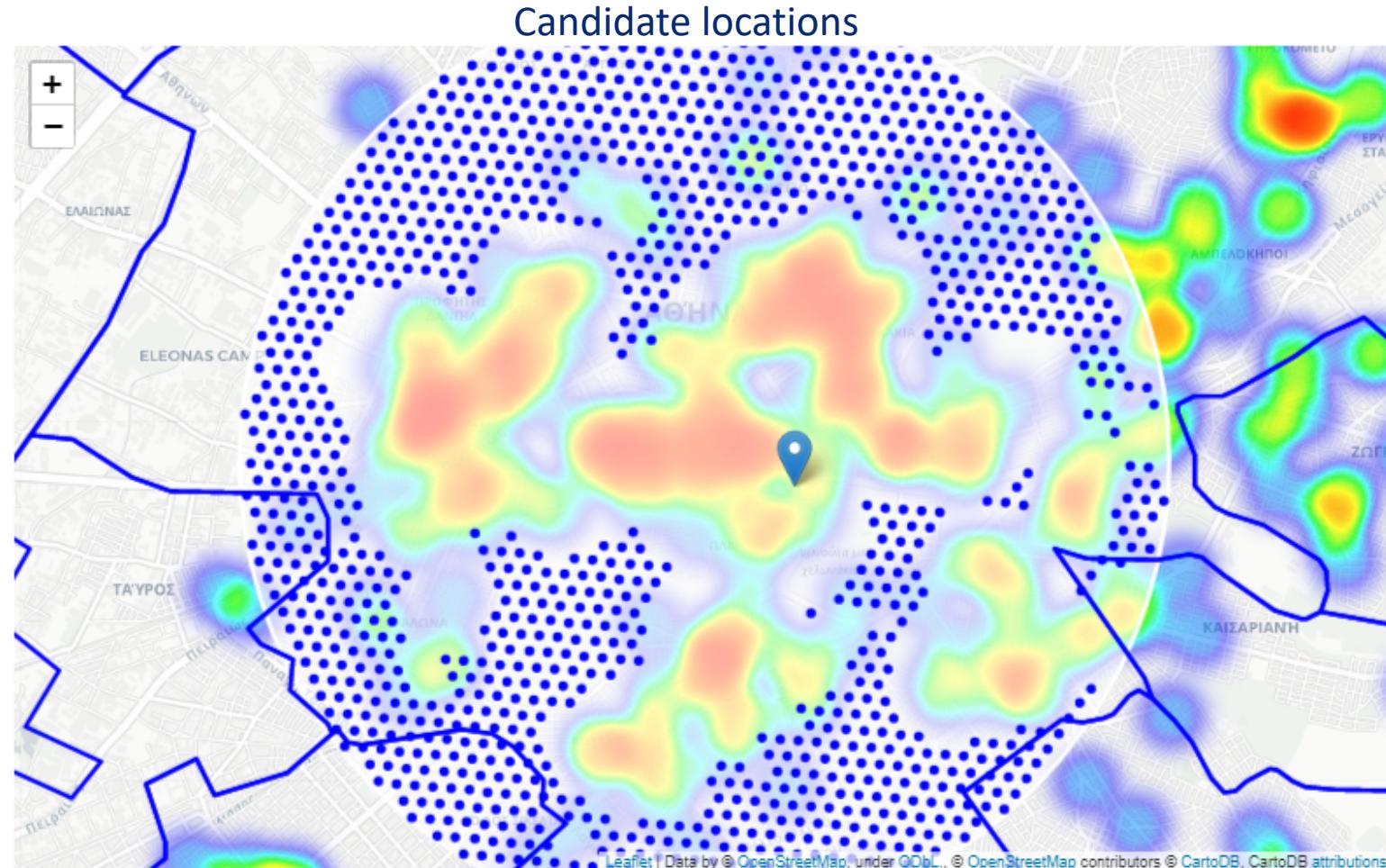
Analysis – Areas of Interest

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- Locations with no more than two bars nearby: 1302
- Locations with no Wine Bars within 400m: 1599
- Locations with both conditions met: 1193

Analysis – Areas of Interest

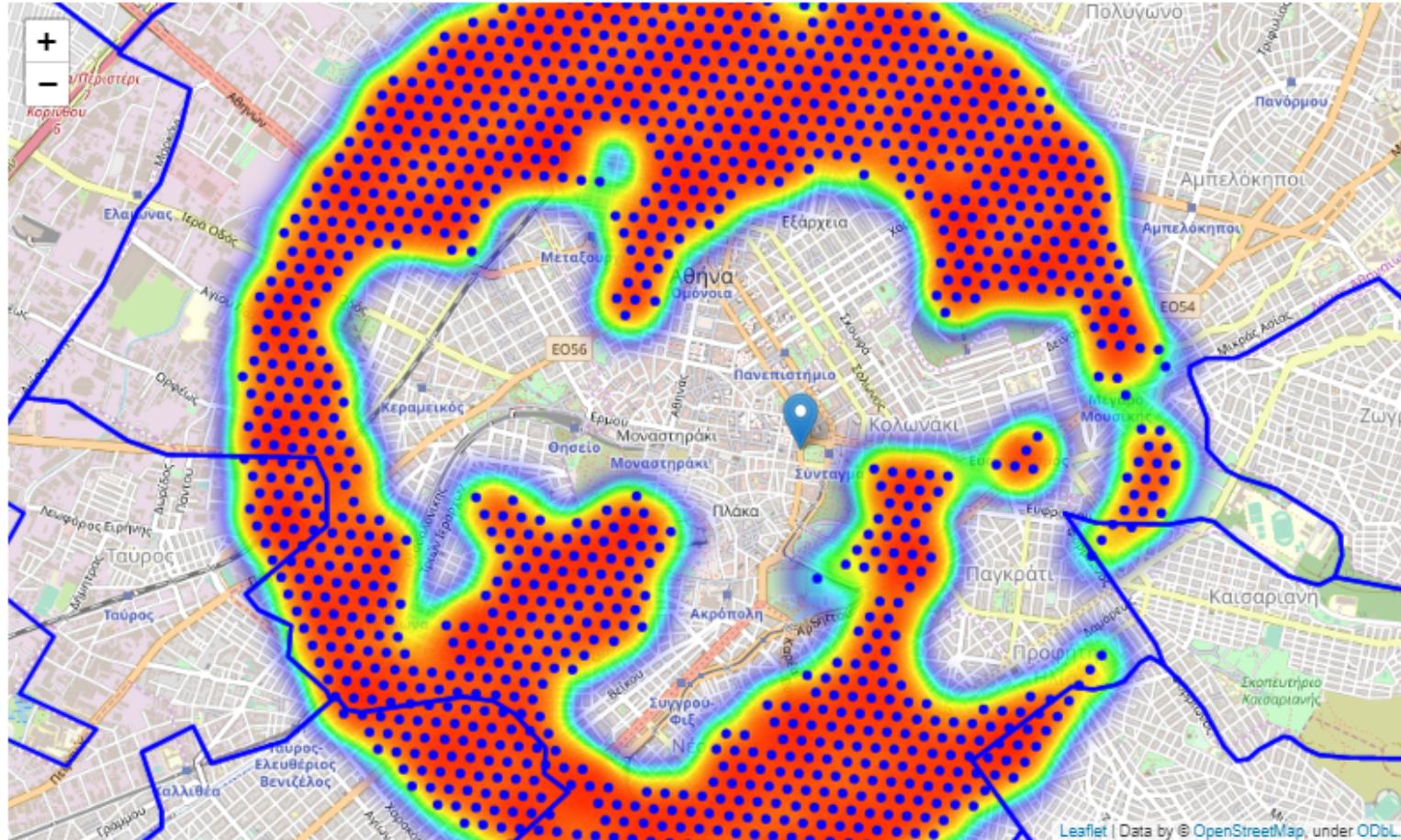
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Analysis – Areas of Interest

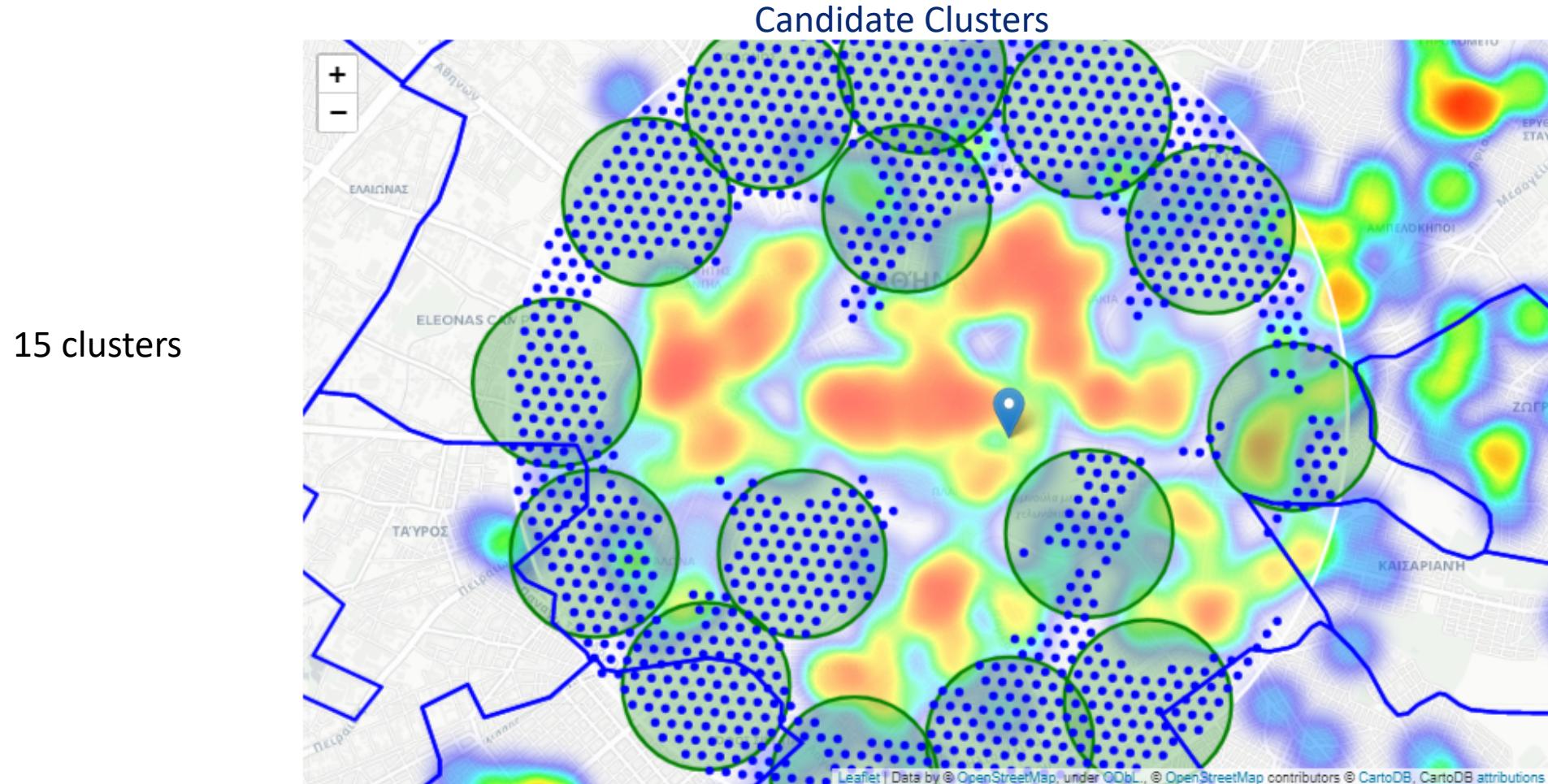
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Candidate locations (Heatmap)



Analysis – Cluster Areas of Interest

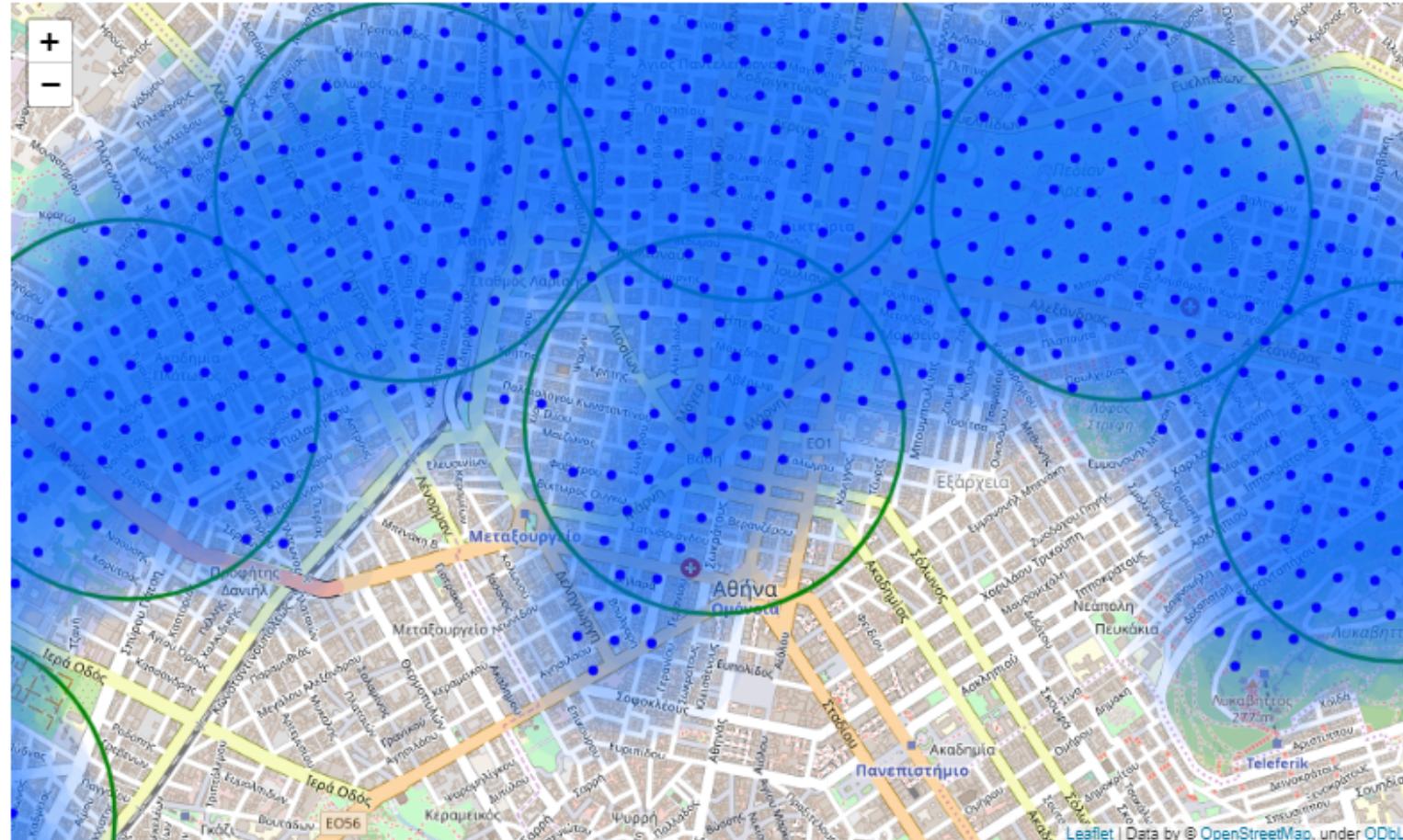
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Analysis – Omonoia

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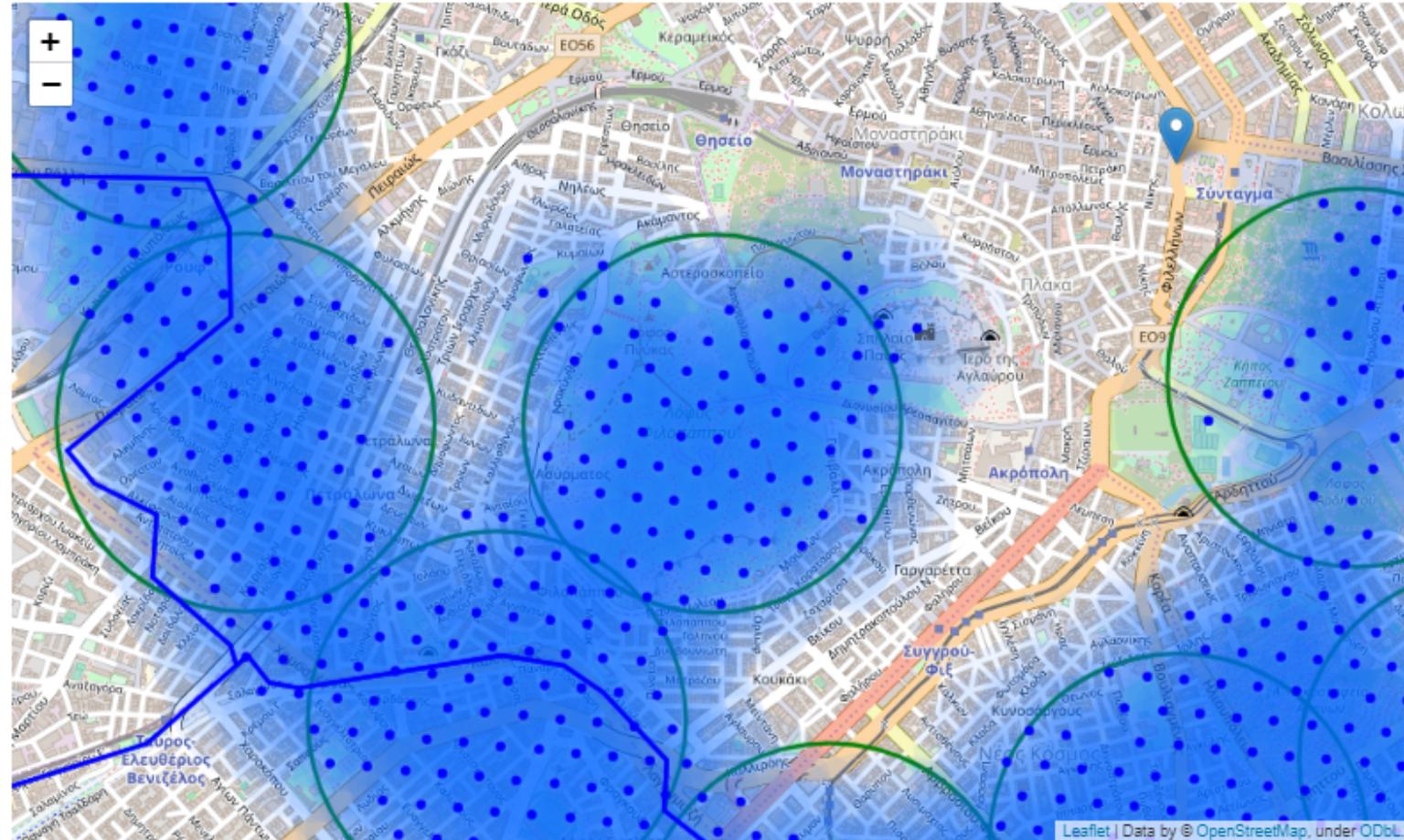
Candidate Clusters around Omonoia



Analysis – Petralona & Koukaki

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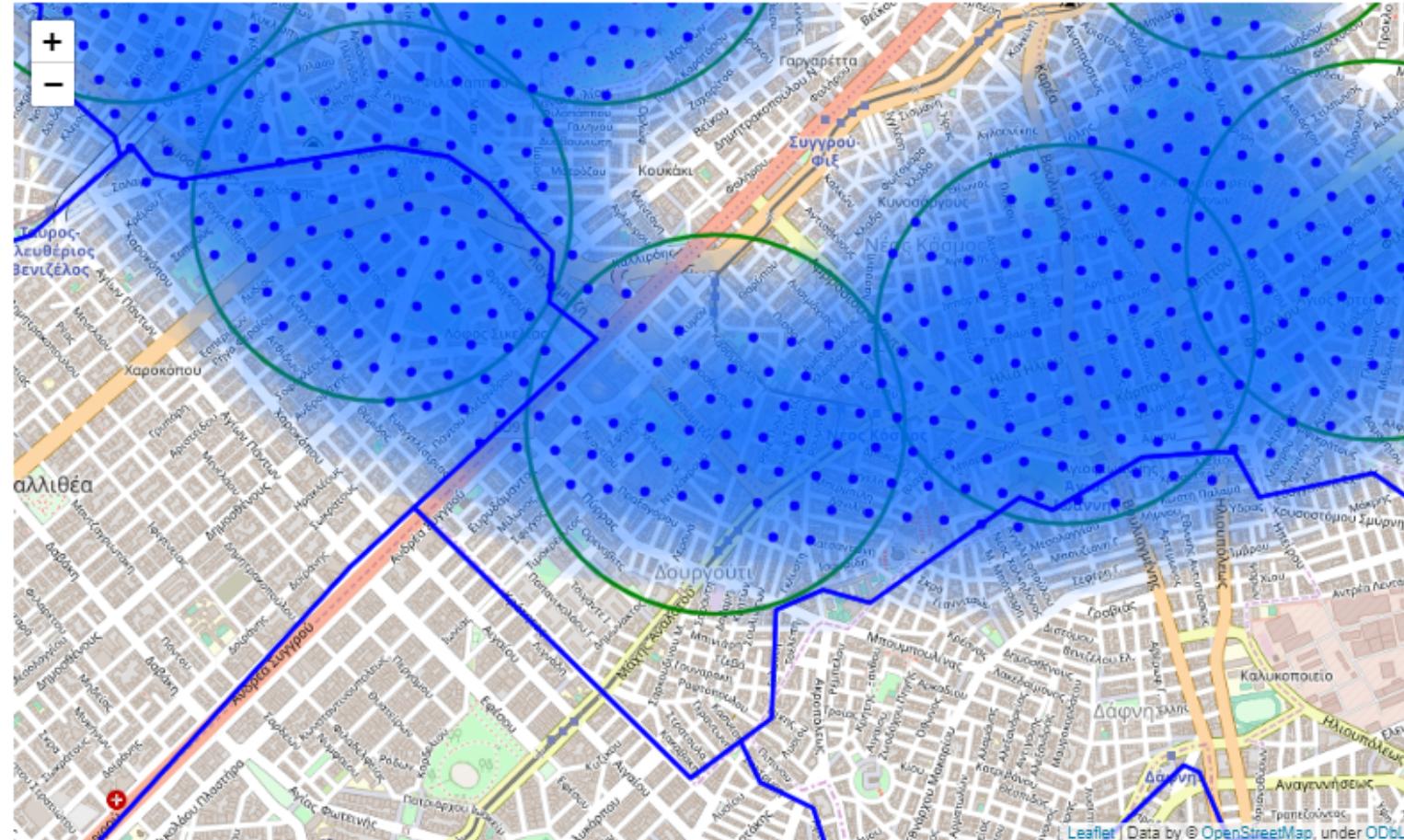
Candidate Clusters in Petralona & Koukaki



Analysis – Neos Kosmos

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Candidate Clusters in Neos Kosmos



Analysis – Cluster Addresses

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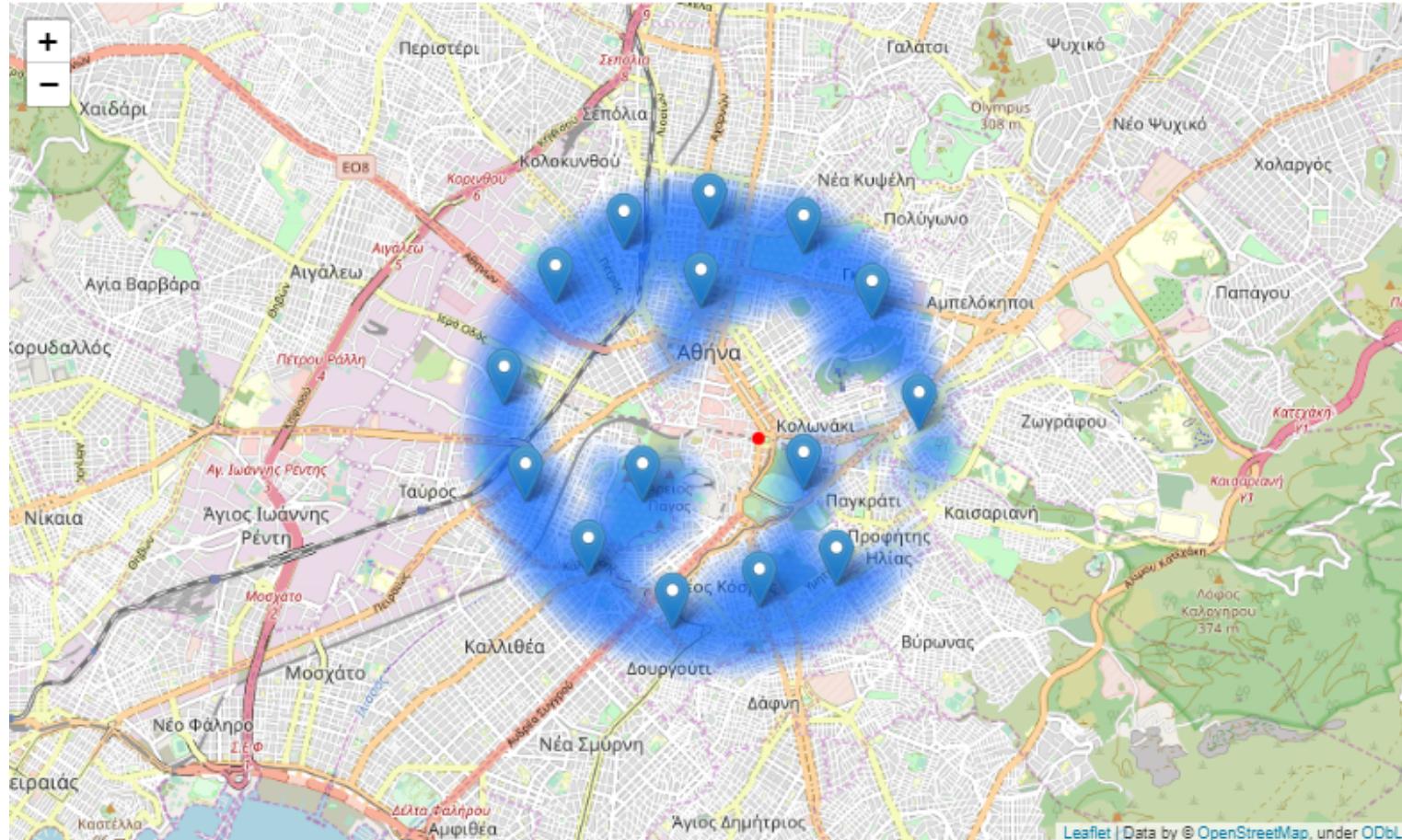
=====
Addresses of centers of areas recommended for further analysis
=====

Derigni 62, Athina 104 34	=> 2.3km from Syntagma Square
Unnamed Road, Athina 117 41	=> 1.4km from Syntagma Square
Argous 125, Athina 104 41	=> 2.6km from Syntagma Square
Irodou Attikou 23, Athina 105 57	=> 0.7km from Syntagma Square
Leof. Vouliagmenis 86, Athina 117 43	=> 1.8km from Syntagma Square
Kozanis 34, Athina 118 55	=> 2.7km from Syntagma Square
Maronias 32, Athina 104 44	=> 2.5km from Syntagma Square
Mpousgou 21, Athina 114 73	=> 2.0km from Syntagma Square
Sarantaporou 15, Kallithea 176 71	=> 2.3km from Syntagma Square
Fanarioton 31, Athina 114 71	=> 1.7km from Syntagma Square
Filolaou 188A, Athina 116 32	=> 1.8km from Syntagma Square
Alopis 45, Athina 118 53	=> 2.6km from Syntagma Square
Michalakopoulou 41, Athina 115 28	=> 1.7km from Syntagma Square
Stournari 73, Athina 104 32	=> 1.5km from Syntagma Square
Lagoumitzi 51, Athina 117 45	=> 2.2km from Syntagma Square

Analysis – Cluster Addresses

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Candidate Addresses



Results and Discussion

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Our analysis shows that although there is a great number of bars in Athens (794 in $\sim 113\text{km}^2$) here are pockets of low bar density close to city center.

Eventually we focused our attention to areas south, south-east, corresponding to boroughs **Petalona, Koukaki and Petralona** and north in the surrounding area of **Ommonoia Square**.

We have filtered the locations in order to exclude areas with more than two bars in radius of 250m and a wine bar closer than 400m.

Results and Discussion

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- The remaining locations were then clustered to create zones of interest which contain the greatest number of location candidates possible.
- Addresses of centers of those zones were also generated using reverse geocoding to be used as markers/starting points for more detailed local analysis based on other factors.
- We have chosen the analysis to end up in 15 clusters since this was the optimal number that covered the whole prospect areas.

Results and Discussion

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- Eventually we have created 15 zones containing the largest number of potential new wine bar locations based on number of and distance to existing venues - both bars in general and wine bars particularly.

LIMITATIONS

- The analysis it does not guarantee that the final proposed zones are optimal locations for a new wine bar.
- It is possible that factors not explored and covered by the current analysis create circumstances and reasons that justify the small number of bars in any of those areas.

Conclusion

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- Purpose of this project was to identify Athens' areas closer to the center with low number of bars (particularly Wine Bars) in order to aid stakeholders in narrowing down the search for optimal location for a new Wine Bar.
- By calculating bar density distribution from Foursquare data, we have first identified general boroughs that justify further analysis (Omonoia, Koukaki, Petralona, Neos Kosmos), and then generated extensive collection of locations which satisfy some basic requirements regarding existing nearby bars.

Conclusion

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- Final decision on optimal wine bar location will be made by stakeholders based on specific characteristics of neighborhoods and locations in every recommended zone, taking into consideration additional factors like attractiveness of each location (proximity to park or water), levels of noise / proximity to major roads, proximity to public transport, real estate availability, prices, social and economic dynamics of every neighborhood etc.

THANK YOU



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