Identification of East London Suburbs with Parks for Recreation

A report for Estate Agents and Realtors

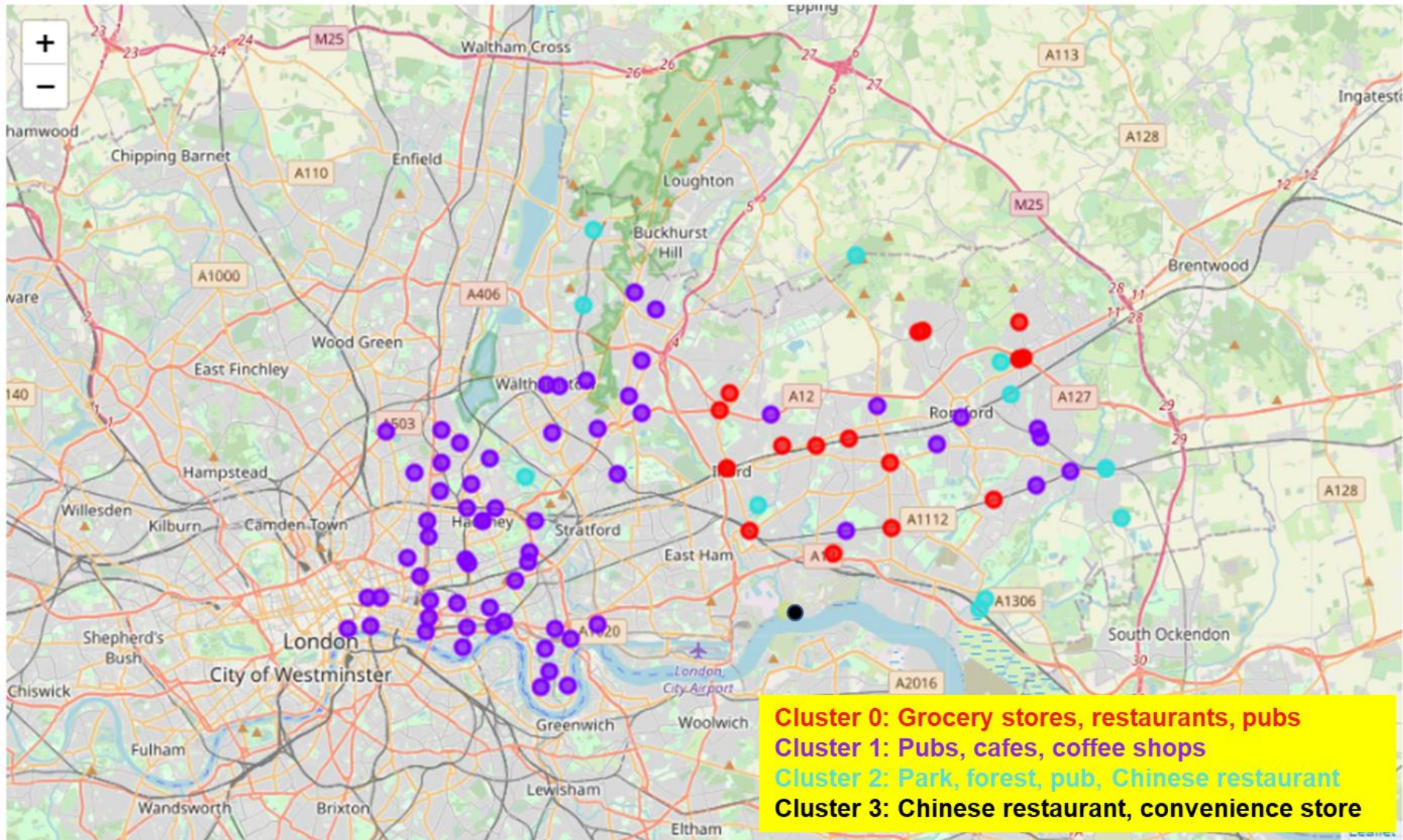By Ron Daniel*, Data Scientist
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6th April, 2021

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Summary

- Chase Cross, Chingford, Cranham, Gidea Park, Hackney Marshes, Hainault, Highams Park, Loxford, North Ockendon, Rainham, South Hornchurch and Upminster are the East London suburbs with the best parks and open spaces

- The fall in the London boroughs of Havering (7), Redbridge (2), Waltham Forest (2), and Hackney

- Further work is recommended possible correlation between property/real estate prices and the above areas

- This report should be actively marketed to realtors/estate agents and discerning families or young couples seeking to move to 'greener' areas of East London

Desirable Suburbs in Blue!

Cluster 0: Grocery stores, restaurants, pubs
Cluster 1: Pubs, cafes, coffee shops
Cluster 2: Park, forest, pub, Chinese restaurant
Cluster 3: Chinese restaurant, convenience store

Housing market after Covid-19 lockdown: buyer demand surges for homes with office space, gardens, balconies and near local parks

Top of the wish list now for buyers and renters are houses with garden space.
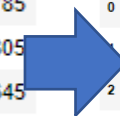

Daniel Lynch

London Evening Standard, 11th June 2020;
https://www.standard.co.uk/homesandproperty/property-news/buy-house-demand-office-garden-balcony-a138776.html

High demand for housing close to parks due to Covid-19

Data Used and Methodology

- Location data for London suburbs scraped from Wikipedia, cleaned and analysed using Python software

- Latitude/longitude data for suburbs obtained using geocoder

- Foursquare API used to access venue data within 1000m of the list of suburbs, filtered to a subset for East London boroughs

- Kmeans unsupervised machine learning algorithm used to assign suburbs to one of four clusters, based on the occurrence of venues within the search radius

	Location	London borough	Post town	Postcode district	Dial code	OS grid ref
0	Abbey Wood	Bexley, Greenwich [7]	LONDON	SE2	020	TQ465785
1	Acton	Ealing, Hammersmith and Fulham[8]	LONDON	W3, W4	020	TQ205805
2	Addington	Croydon[8]	CROYDON	CR0	020	TQ375645
3	Addiscombe	Croydon[8]	CROYDON	CR0	020	TQ345665
4	Albany Park	Bexley	BEXLEY, SIDCUP	DA5, DA14	020	TQ478728

	Location	London borough	Post town	Postcode district	Dial code	OS grid ref	SearchLocation	Geodata
0	Abbey Wood	Bexley, Greenwich [7]	LONDON	SE2	020	TQ465785	LONDON, Abbey Wood	(51.487621, 0.1140504)
1	Acton	Ealing, Hammersmith and Fulham[8]	LONDON	W3, W4	020	TQ205805	LONDON, Acton	(51.5081402, -0.2732607)
2	Addington	Croydon[8]	CROYDON	CR0	020	TQ375645	CROYDON, Addington	(44.4206405, -76.978248)
3	Addiscombe	Croydon[8]	CROYDON	CR0	020	TQ345665	CROYDON, Addiscombe	(51.3796916, -0.0742821)
4	Albany Park	Bexley	BEXLEY, SIDCUP	DA5, DA14	020	TQ478728	BEXLEY, SIDCUP, Albany Park	(51.4353837, 0.1259653)

Illustration of East London Suburbs, London Borough and Latitude/Longitude Data

	Location	borough	latitude	longitude
0	Aldgate	City[10]	51.5142477	-0.0757186
1	Ardleigh Green	Havering[12]	51.5712468	0.2190799
2	Barbican	City[14]	51.5201501	-0.0986832
3	Barking	Barking and Dagenham[14]	51.5402677	0.0793235
4	Barkingside	Redbridge[15]	51.5819353499999995	0.07005708323668366
5	Becontree	Barking and Dagenham[20]	51.5403111	0.1265241
6	Becontree Heath	Barking and Dagenham[21]	51.5610299	0.1478793
7	Bethnal Green	Tower Hamlets[25]	51.5303456	-0.0561633
8	Blackfriars	City[27]	51.5115854	-0.1037671
9	Blackwall	Tower Hamlets[28]	51.5079378	-0.0071843
10	Bow	Tower Hamlets[31]	51.5309383	-0.0274853
11	Cambridge Heath	Tower Hamlets[40]	51.5319544	-0.0574215
12	Canary Wharf	Tower Hamlets[40]	51.5048954	-0.0190006
13	Cann Hall	Waltham Forest[41]	51.55743685	0.015681373492808938
14	Castle Green	Barking and Dagenham	51.5334036	0.12005152247941958
15	Chadwell Heath	Redbridge, Barking and Dagenham	51.5679857	0.127994

Study Area

Study Area and London Borough Highlighted in Yellow
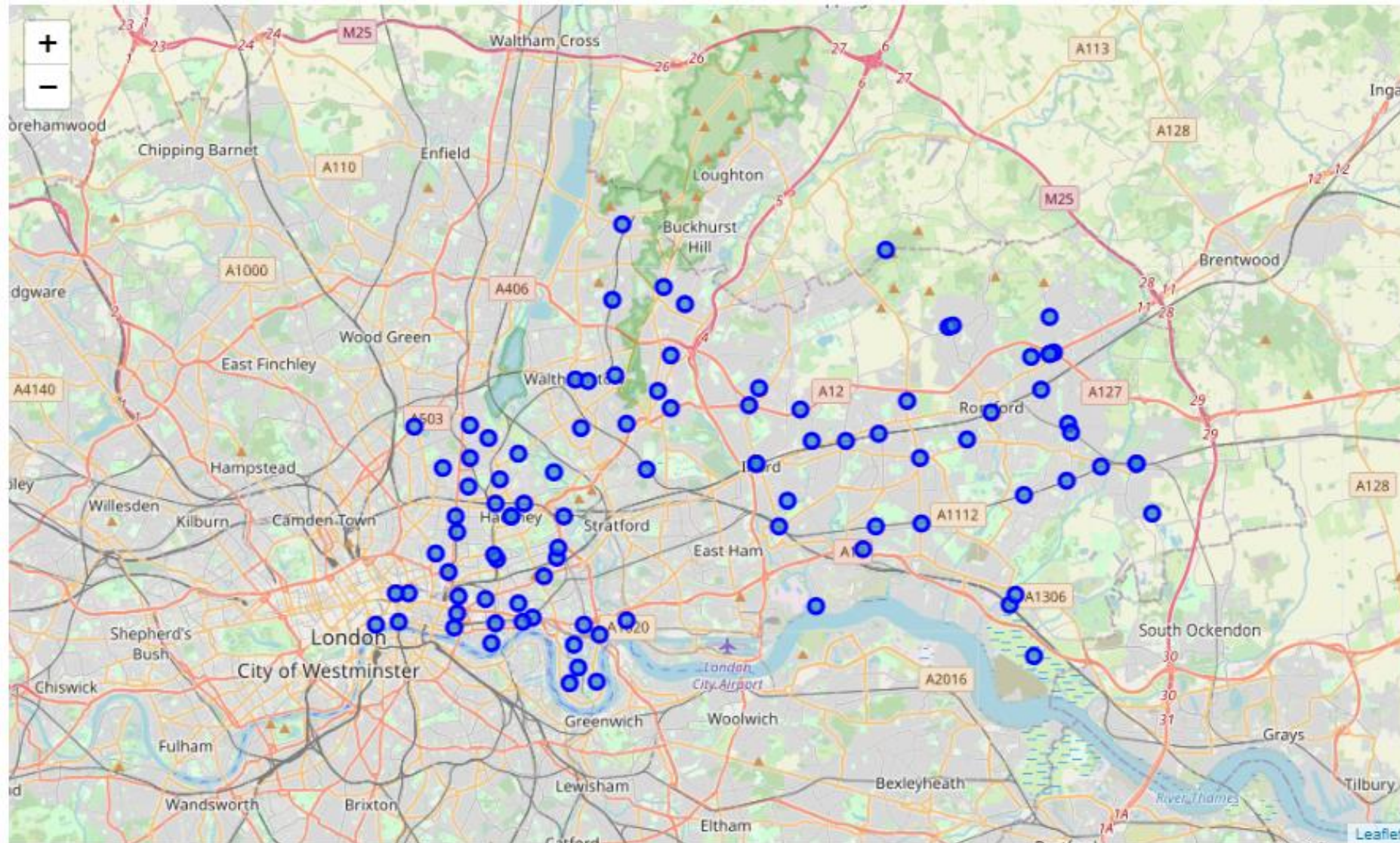
Filtered Set of East London Suburbs Analysed
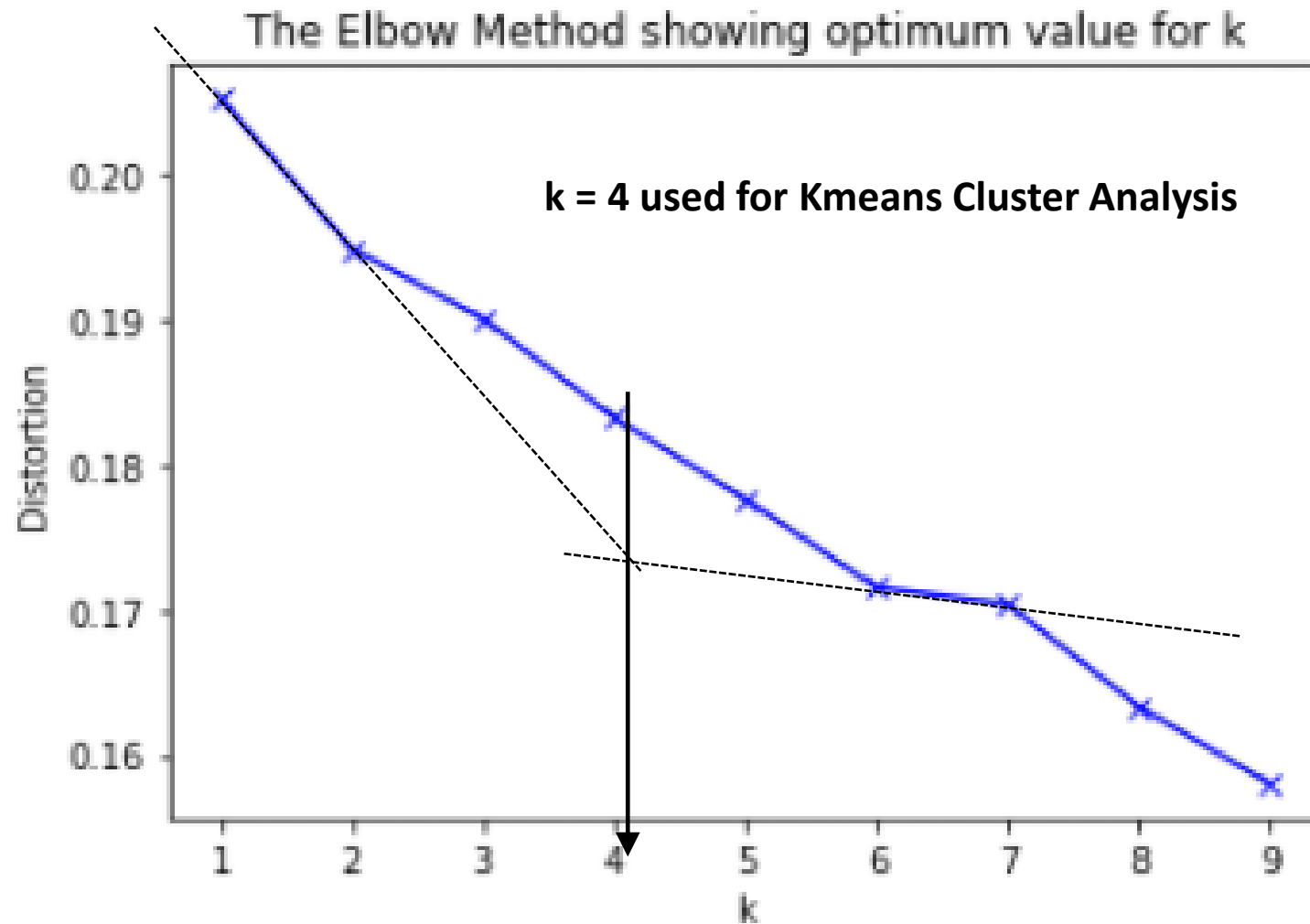
Illustration of Venues Data by Suburb

	Suburb	Adult Boutique	American Restaurant	Antique Shop	Arcade	Arepa Restaurant	Argentinian Restaurant	Art Gallery	Art Museum	Arts & Crafts Store	Asian Restaurant	Athletics & Sports	Auto Garage	BBQ Joint
0	Aldgate	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.020000	0.00	0.010000	0.010000	0.000000	0.000000	0.000000
1	Ardleigh Green	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
2	Barbican	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.010000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
3	Barking	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
4	Barkingside	0.00	0.034483	0.000000	0.000000	0.00	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
5	Becontree	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
6	Becontree Heath	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
7	Bethnal Green	0.00	0.000000	0.000000	0.000000	0.01	0.00	0.010000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000
8	Blackfriars	0.00	0.000000	0.000000	0.000000	0.00	0.01	0.020000	0.03	0.000000	0.000000	0.000000	0.000000	0.000000
9	Blackwall	0.00	0.000000	0.000000	0.000000	0.00	0.00	0.000000	0.00	0.000000	0.010000	0.010000	0.000000	0.000000
10	Bow	0.00	0.000000	0.012821	0.000000	0.00	0.00	0.038462	0.00	0.000000	0.000000	0.000000	0.000000	0.000000

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----Wanstead----
                           venue  freq
0                            Pub  0.10
1                           Café  0.08
2                     Restaurant  0.08
3                           Park  0.08
4          Gym / Fitness Center  0.05
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Venues Data for the author's suburb of Wanstead

Best Value of K for Kmeans Analysis Ambiguous

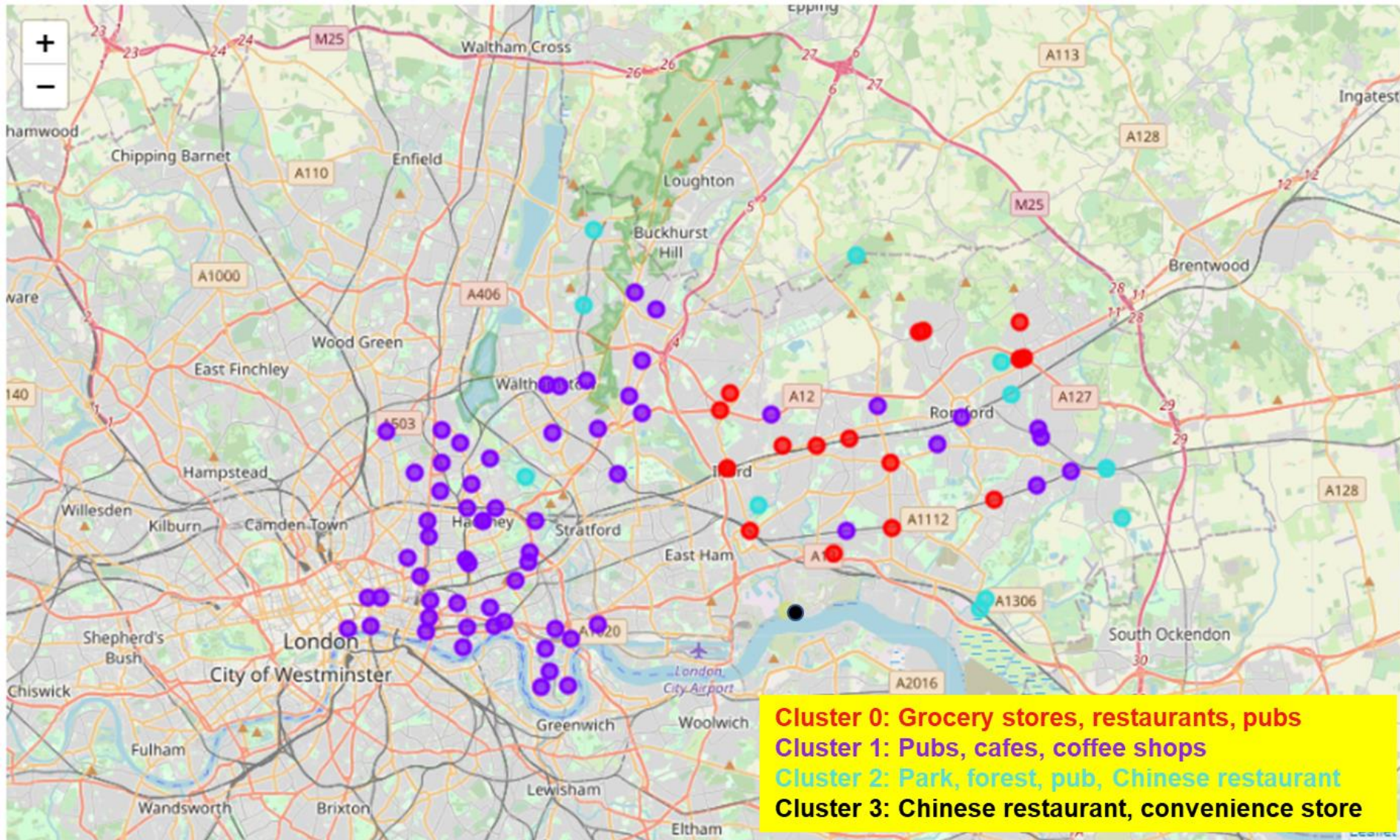# Widespread Occurrence of Parks in Cluster 2 Suburbs

Cluster 2: Park, forest, pub, Chinese restaurant

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]: ondon_merged3.loc[London_merged3['Cluster_Labels'] == 2, London_merged3.columns[[0, 1] + list(range(5, London_merged3.shape[1]))]]
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	Location	borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
16	Chase Cross	Havering	Coffee Shop	Pizza Place	Park	Department Store	English Restaurant	Warehouse Store	Furniture / Home Store	Bus Stop	Fast Food Restaurant	Yoga Studio
17	Chingford	Waltham Forest	Pub	Italian Restaurant	Coffee Shop	Grocery Store	History Museum	Café	Park	Golf Course	Athletics & Sports	Nature Preserve
19	Cranham	Havering	Coffee Shop	Park	Pub	Platform	Grocery Store	Soccer Stadium	Stationery Store	Metro Station	Supermarket	Sandwich Place
29	Gidea Park	Havering	Park	Grocery Store	Bus Stop	English Restaurant	Gym / Fitness Center	Electronics Store	Coffee Shop	Wine Shop	Shoe Store	Fish Market
33	Hackney Marshes	Hackney	Park	Nature Preserve	Market	Bus Stop	Café	Hockey Field	Plaza	Bistro	Filipino Restaurant	Farmers Market
36	Hainault	Redbridge	Park	Pub	Steakhouse	Bakery	Coffee Shop	Yoga Studio	Filipino Restaurant	Falafel Restaurant	Farm	Farmers Market
41	Highams Park	Waltham Forest	Pub	Hotel	Park	Coffee Shop	Gym	Clothing Store	Yoga Studio	Falafel Restaurant	Farm	Farmers Market
53	Loxford	Redbridge	Ice Cream Shop	Pub	Park	Portuguese Restaurant	Grocery Store	Convenience Store	Betting Shop	Coffee Shop	Pizza Place	Yoga Studio
59	North Ockendon	Havering	Coffee Shop	Pub	Campground	Motorcycle Shop	Yoga Studio	Farm	Farmers Market	Fast Food Restaurant	Field	Filipino Restaurant
62	Rainham	Havering	Bus Stop	Park	Pizza Place	Gas Station	Pub	Chinese Restaurant	Museum	Fish & Chips Shop	Historic Site	Pet Store
73	South Hornchurch	Havering	Park	Bus Stop	Pharmacy	Pub	Chinese Restaurant	Museum	Fish & Chips Shop	Historic Site	Gas Station	Café
81	Upminster	Havering	Coffee Shop	Park	Pub	Platform	Grocery Store	Soccer Stadium	Stationery Store	Metro Station	Supermarket	Sandwich Place

Clusters Resulting From Kmeans Analysis

Cluster 0: Grocery stores, restaurants, pubs
Cluster 1: Pubs, cafes, coffee shops
Cluster 2: Park, forest, pub, Chinese restaurant
Cluster 3: Chinese restaurant, convenience store

Conclusion

This study has identified and high-graded 12 attractive East London suburbs at varying distances from the city centre, and all offer excellent open spaces and parks for those seeking to escape inner city clutter and noise.