THE BATTLE OF NEIGHBORHOODS

Opening new African Restaurant in London, UK

IBM Data Science Professional Certificate – Capstone Project

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1. Introduction

1.1. Problem

The population of London has grown considerably over the last decades. London is very diverse. It represents what is called the reflection of the old British Empire. In London, you can get fresh from food supplies from Africa. One begins to wonder the efficiency of the supply mechanism.

The real deal is that as much as there are many fine restaurants in London – Asian, Middle Eastern, Latin and American restaurants, you can struggle to find good place to dine in the finest of West African cuisine that has combination of Nigerian, Ghanaian, Cameroonian, Senegalese and more.

1.2. Background

My client, a successful restaurant chain in Africa is looking to expand operation into Europe through London. They want to create a high-end restaurant that comes with organic mix and healthy. Their target is not only West Africans, but they are pro-organic and healthy eating. To them every meal counts and counts as a royal when you eat.

Since the London demography is so big, my client needs deeper insight from available data in other to decide where to establish the first Europe “palace” restaurant. This company spends a lot on research and provides customers with data insight into the ingredients used at restaurants.

2. Data

2.1 Data sources

To consider the problem we can list the data as below:

- I got the sector data of London from Wikipedia [1]
- I used python geocoder library to get geographical coordinates of neighborhoods [4]

2.2 Feature Selection and Data Usage

- I will use neighborhood location values to analyze London geographical structure. I will use folium library of python to draw maps by using given latitude and longitudes of neighborhoods. Selected features will be as below

	Location	Borough	Postcode	Latitude	Longitude
0	Crofton Park	Lewisham	SE4	51.46268	-0.03558
1	Denmark Hill	Southwark	SE5	51.47480	-0.09313
2	Deptford	Lewisham	SE8	51.48114	-0.02467
3	Dulwich	Southwark	SE21	51.44100	-0.08897
4	East Dulwich	Southwark	SE22	51.45256	-0.07076

- I will use areas of London :

Location	London borough	Post town	Postcode district
Abbey Wood	Bexley, Greenwich [7]	LONDON	SE2
Acton	Ealing, Hammersmith and Fulham[8]	LONDON	W3, W4
Addington	Croydon[8]	CROYDON	CR0
Addiscombe	Croydon[8]	CROYDON	CR0
Albany Park	Bexley	BEXLEY, SIDCUP	DA5, DA14
Aldborough Hatch	Redbridge[9]	ILFORD	IG2
Aldgate	City[10]	LONDON	EC3
Aldwych	Westminster[10]	LONDON	WC2
Alperton	Brent[11]	WEMBLEY	HA0
Anerley	Bromley[11]	LONDON	SE20
Angel	Islington[8]	LONDON	EC1, N1
Aperfield	Bromley[11]	WESTERHAM	TN16
Archway	Islington[12]	LONDON	N19
Ardleigh Green	Havering[12]	HORNCHURCH	RM11
Arkley	Barnet[12]	BARNET, LONDON	EN5, NW7
Arnos Grove	Enfield[12]	LONDON	N11, N14

- I will also classify neighborhoods by using venues distribution and counts. In this way, I will find similarities of neighborhoods which will help me to choose location for opening a new restaurant. Similar structured neighborhoods may handle same type of venue.

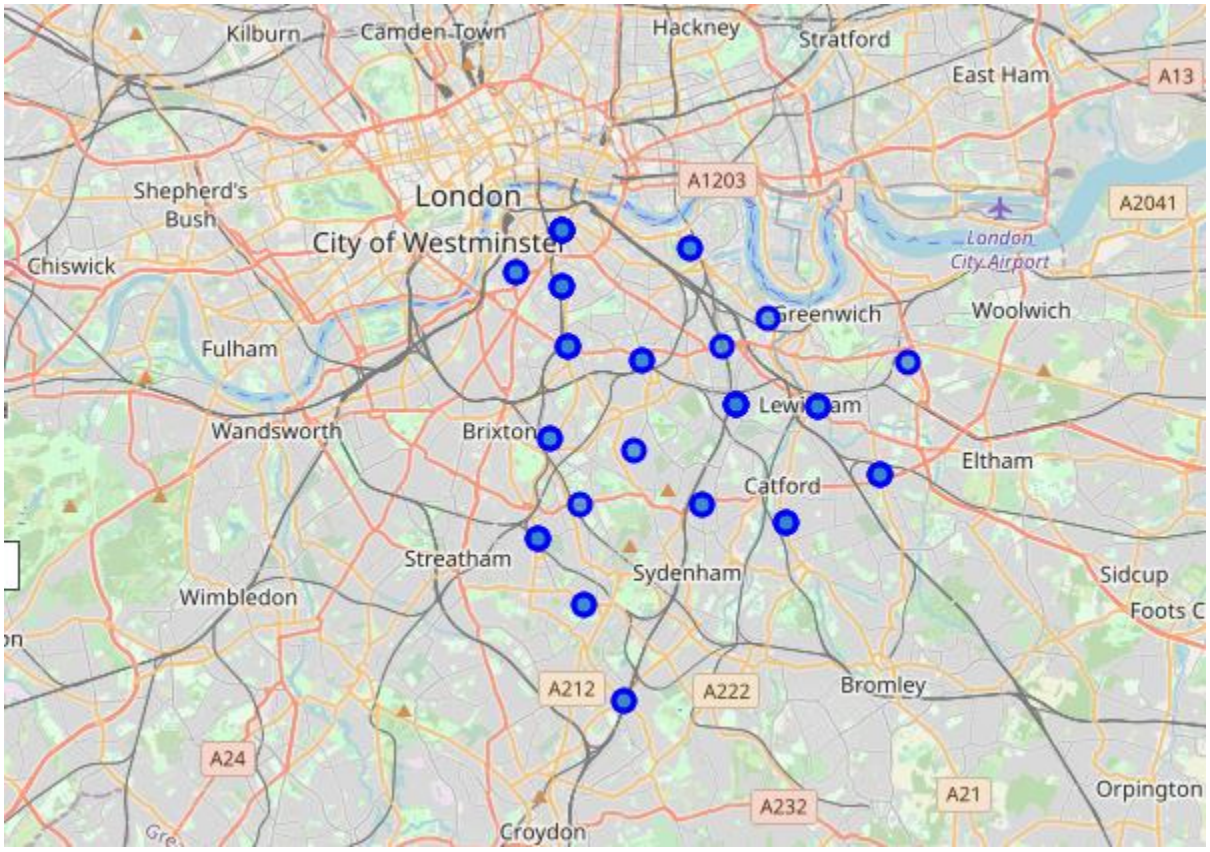
References:

- [1] London — Wikipedia
- [2] Python Geocoder Library
- [3] Foursquare API

3. Methodology

- I used GitHub repository for code versioning.
- The London data is available with the neighborhood name in wikipedia. Location information (latitude and longitude) of neighborhoods are taken from geocoder library.

- I took neighborhood from wikipedia and put blue dots on London map to see centers of neighborhoods.



- There are 20 sectors in London. I also merged Sector and Neighborhood data to see in which sector neighborhood places.

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- This assumption will focus on the demography of London where there are predominantly more multicultural groups. According to the proportion of races by London borough as seen in Demography of London, the top 5 Black Africans or Caribbeans are shown below:

	Local authority	White	Mixed	Asian	Black	Other
0	Barnet	641	48	185	77	48
1	Barking and Dagenham	583	42	159	20	16
2	Bexley	819	23	66	85	8
3	Brent	363	51	341	188	58
4	Bromley	843	35	52	6	9

- Single Neighbourhood An initial exploration of a single Neighbourhood within the London area was done to examine the Foursquare workability. The Lewisham Borough postcode SE13 and Location - Lewisham is used for this.

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3	Dulwich	Southwark	SE21	51.44100	-0.08897
4	East Dulwich	Southwark	SE22	51.45256	-0.07076
5	Elephant and Castle	Southwark	SE1	51.49996	-0.09568
6	Elephant and Castle	Southwark	SE11	51.49084	-0.11108
7	Elephant and Castle	Southwark	SE17	51.48764	-0.09542
8	Bankside	Southwark	SE1	51.49996	-0.09568
9	Forest Hill	Lewisham	SE23	51.44122	-0.04764
10	Gipsy Hill	Lambeth	SE19	51.41990	-0.08808
11	Gipsy Hill	Lambeth	SE27	51.43407	-0.10375
12	Grove Park	Lewisham	SE12	51.44759	0.01350
13	Herne Hill	Lambeth	SE24	51.45529	-0.09928
14	Hither Green	Lewisham	SE13	51.46196	-0.00754
15	Honor Oak	Lewisham	SE23	51.44122	-0.04764
16	Ladywell	Lewisham	SE4	51.46268	-0.03558
17	Ladywell	Lewisham	SE13	51.46196	-0.00754
18	Lambeth	Lambeth	SE1	51.49996	-0.09568
19	Lee	Lewisham	SE12	51.44759	0.01350
20	Lewisham	Lewisham	SE13	51.46196	-0.00754
21	New Cross	Lewisham	SE14	51.47489	-0.04038
22	Newington	Southwark	SE1	51.49996	-0.09568
23	Newington	Southwark	SE17	51.48764	-0.09542
24	Nunhead	Southwark	SE15	51.47218	-0.06779

4. Results

The following are the highlights of the 5 clusters:

1.Pubs, Cafe, Coffee Shops are popular in the South East London. 2.As for restaurants, the Italian Restaurants are very popular in the South East London area. Especially in Southwark and Lambeth areas. 3.With the Lewisham area being the most condensed area of Africans in the South East Area, it is surprising to see how in the top 10 venues, you can barely see restaurants in the top 5 venues. 5.Although, the Clusters have variations, a very visible presence is the predominance of pubs

5. Discussion & Conclusion

It is very important to note that Clusters 2 and 3 are the most viable clusters to create a brand African Restaurant. Their proximity to other amenities and accessibility to station are paramount. These 2 clusters do not have top restaurants that could rival their standards if they are created. And the proximity to resources needed is paramount as Lewisham and Lambeth are not far out from Peckham (under Southwark).

In conclusion, this project would have had better results if there were more data in terms of crime data within the area, traffic access and allowance of more venues exploration with the Foursquare (limited venues for free calls).

Also, getting the ratings and feedbacks of the current restaurants within the clusters would have helped in providing more insight into the best location.