

PET CAFÉ IN LONDON

Submission for Week 5 Capstone Project,
The Battle of the Neighborhoods

CONTENT

- Introduction
- Data
- Methodology
- Results & Discussion
- Conclusion
- Evaluation

INTRODUCTION

Opportunity:

- Pet cafes an untapped market (7 outlets vs ~10,000 coffee cafes)
- Social isolation during lockdown has increased desire for interaction
- COVID-19 situation improving in London

Business problem: where should I locate the pet café in London to best balance accessibility, business prospects and costs?



DATA

London has a competitive café scene. Consumer patterns may also have shifted since the COVID-19 pandemic hit. Here are some considerations and datasets needed.

- **Popularity**
 - Assume that high density of F&B/retail outlets suggests a popular shopping and entertainment district where footfall would be high
 - Foursquare data
- **Competition**
 - Not near other pet cafes and good business prospects based on their existing businesses
 - Foursquare data and business data from Greater London Authority (GLA, data.london.gov.uk)
- **Accessibility to residents**
 - Persistence of COVID-19 pandemic means business from locals outweighs that of tourists
 - Population density from GLA, Wikipedia data
- **Affordability**
 - Assume rental prices increase closer downtown
 - Wikipedia data

METHODOLOGY

- Data acquisition and preparation
 - Web-scraping from Foursquare and Wikipedia
 - Importing from GLA database
- Exploratory data analysis and inferential analysis
 - Establishing locations of competitors (existing pet cafes)
 - Pearson correlation analysis to establish features that affect business outcomes the most
 - Verification against Wikipedia data on proximity to city center
- K-Means clustering to study borough profiles and establish which are popular F&B, retail and entertainment areas
- Conclusions and recommendation

RESULTS

Using BeautifulSoup and Geocoder, we first scraped the name, proximity (Nr. In Map) and coordinate data for each London Borough

Borough	Nr. in map	Latitude	Longitude
Barking and Dagenham	25	51.627300	-0.253760
Barnet	31	51.452078	0.069931
Bexley	23	51.609783	-0.194672
Brent	12	51.601511	-0.066365
Bromley	20	51.591180	-0.165040
Camden	11	51.593470	-0.083380
Croydon	19	51.508383	-0.305200
Ealing	13	51.540024	-0.077502
Enfield	30	51.477890	-0.013340
Greenwich	22	51.531820	-0.061780
Hackney	9	51.482600	-0.212880
Hammersmith and Fulham	4	51.589270	-0.106405
Haringey	29	51.513180	-0.106980
Harrow	32	51.544610	-0.144260
Havering	24	51.484230	-0.096477
Hillingdon	33	51.471393	-0.351374
Hounslow	14	51.534380	-0.108940
Islington	10	51.522660	-0.207930
Kensington and Chelsea	3	51.410881	-0.291933
Kingston upon Thames	16	51.494471	-0.120066
Lambeth	6	51.465280	-0.013210
Lewisham	21	51.544520	-0.166860
Merton	17	51.519937	0.055882
Newham	27	51.475773	-0.080698
Redbridge	26	51.480270	-0.237540
Richmond upon Thames	15	51.505734	-0.100002
Southwark	7	51.512243	-0.053659
Sutton	18	51.499990	-0.010450
Tower Hamlets	8	51.581765	-0.276968

RESULTS

After importing and cleaning business and population data as well as data on the profiles of each Borough, we applied **Pearson correlation analysis** to find out what features affected business survival in each Borough the most.

Combined with analysis of Wikipedia data, we see that **proximity to city center is not critical** for business outcomes. **After considering the three most important features, we see that Hackney scores best.**

Features that affect business survival the most:

```
In [21]: #Correlation with output variable
cor_target = abs(cor["Two-year_business_survival_rates_(started_in_2013)"])
#Selecting highly correlated features
relevant_features = cor_target[cor_target>0.5]
relevant_features
```

```
Out[21]: Population_density_(per_hectare)_2017      0.522354
Proportion_of_population_of_working-age,_2015      0.536294
Two-year_business_survival_rates_(started_in_2013)  1.000000
Average_Public_Transport_Accessibility_score,_2014  0.501066
Name: Two-year_business_survival_rates_(started_in_2013), dtype: float64
```

Among Boroughs with best business survival, Hackney scores best on the top three features:

	Borough	Nr. in map	Two- year_business_survival_rates_(started_in_2013)	Population_density_(per_hectare)_2017	Proportion_of_population_of_working- age,_2015
25	Richmond upon Thames	15	78.8	34.4	64.5
4	Bromley	20	78.6	21.8	62.6
22	Merton	17	78.4	55.3	67.2
10	Hackney	9	76.8	144.0	72.1
19	Kingston upon Thames	16	76.8	47.1	67.2
13	Harrow	32	76.5	50.0	64.5
16	Hounslow	14	76.2	49.0	67.6
27	Sutton	18	76.0	46.2	64.3
7	Ealing	13	75.8	63.3	66.8
30	Wandsworth	5	75.8	93.7	72.8
14	Havering	24	75.3	22.6	62.3
6	Croydon	19	75.3	44.7	64.9
15	Hillingdon	33	75.0	26.0	65.6
24	Redbridge	26	74.7	53.9	65.0
18	Kensington and Chelsea	3	74.5	131.1	69.3

RESULTS

Our Foursquare API call collected 2843 venues across 271 categories, which we grouped by Borough location and popularity.

Most popular venues in each Borough – **consider locating near popular café areas!**

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
Bromley	Café	Pub	Coffee Shop	Gym / Fitness Center	Italian Restaurant	Forest	Movie Theater	Bakery	Indian Restaurant	Japanese Restaurant
Islington	Café	Pub	Gym / Fitness Center	Restaurant	Bakery	Pizza Place	Italian Restaurant	Park	Cocktail Bar	Gym
Hackney	Café	Coffee Shop	Pub	Pizza Place	Park	Soccer Stadium	Italian Restaurant	Grocery Store	Thai Restaurant	Turkish Restaurant
Bexley	Coffee Shop	Supermarket	Turkish Restaurant	Café	Grocery Store	Park	Gym / Fitness Center	Pub	Bakery	Pharmacy
Richmond upon Thames	Coffee Shop	Hotel	Theater	Scenic Lookout	Steakhouse	Pub	Beer Bar	Bakery	Grocery Store	Street Food Gathering
Barking and Dagenham	Grocery Store	Park	Pub	Italian Restaurant	Bus Stop	Supermarket	Newsagent	Hotel	Restaurant	Coffee Shop
Barnet	Grocery Store	Pub	Park	Mediterranean Restaurant	Garden Center	Supermarket	Castle	Movie Theater	Coffee Shop	Gym / Fitness Center
Sutton	Hotel	Pub	Coffee Shop	Park	Plaza	Gym / Fitness Center	Bar	Italian Restaurant	Burger Joint	Scenic Lookout
Merton	Hotel	Coffee Shop	Supermarket	Pub	Fast Food Restaurant	Gym / Fitness Center	Grocery Store	Clothing Store	Discount Store	Pharmacy
Haringey	Hotel	Theater	Coffee Shop	Sushi Restaurant	Pub	Wine Bar	Steakhouse	Gym / Fitness Center	Art Gallery	Beer Bar
Waltham Forest	Indian Restaurant	Pub	Coffee Shop	Gym / Fitness Center	Italian Restaurant	Forest	Gym / Fitness Center	Hardware Store	Fast Food Restaurant	Pharmacy

Location of existing competitor pet cafes – **AVOID!**

FOURSQUARE

CITY GUIDE

Pet cafe

+


Current Map View

↗

👤

🏠

Joy



1. Paws for Coffee


Pet Café

41 High St, Hampton Hill

🔖 Save

Isabel N. • May 28, 2016

Great atmosphere, awesome for dog lovers



2. Lady Dinah's Cat Emporium


Pet Café • ££

152-154 Bethnal Green Rd, London

🔖 Save

Eleonora K. • March 12, 2014

Good selection of gluten free and dairy free cakes. Needles to say that all kitties are adorable!



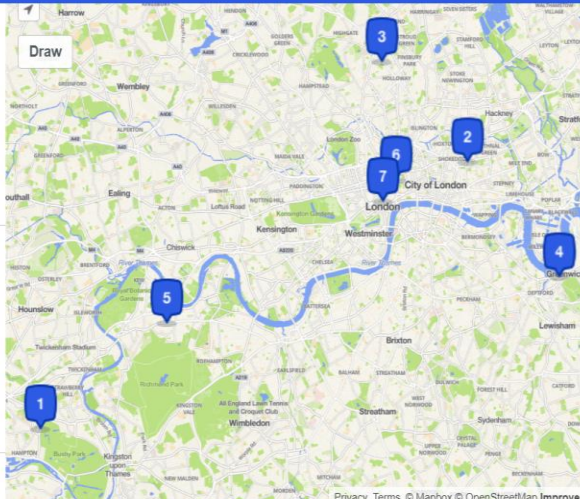
3. Whiskers And Cream

8.8

7.1

📍

Draw



Privacy Terms

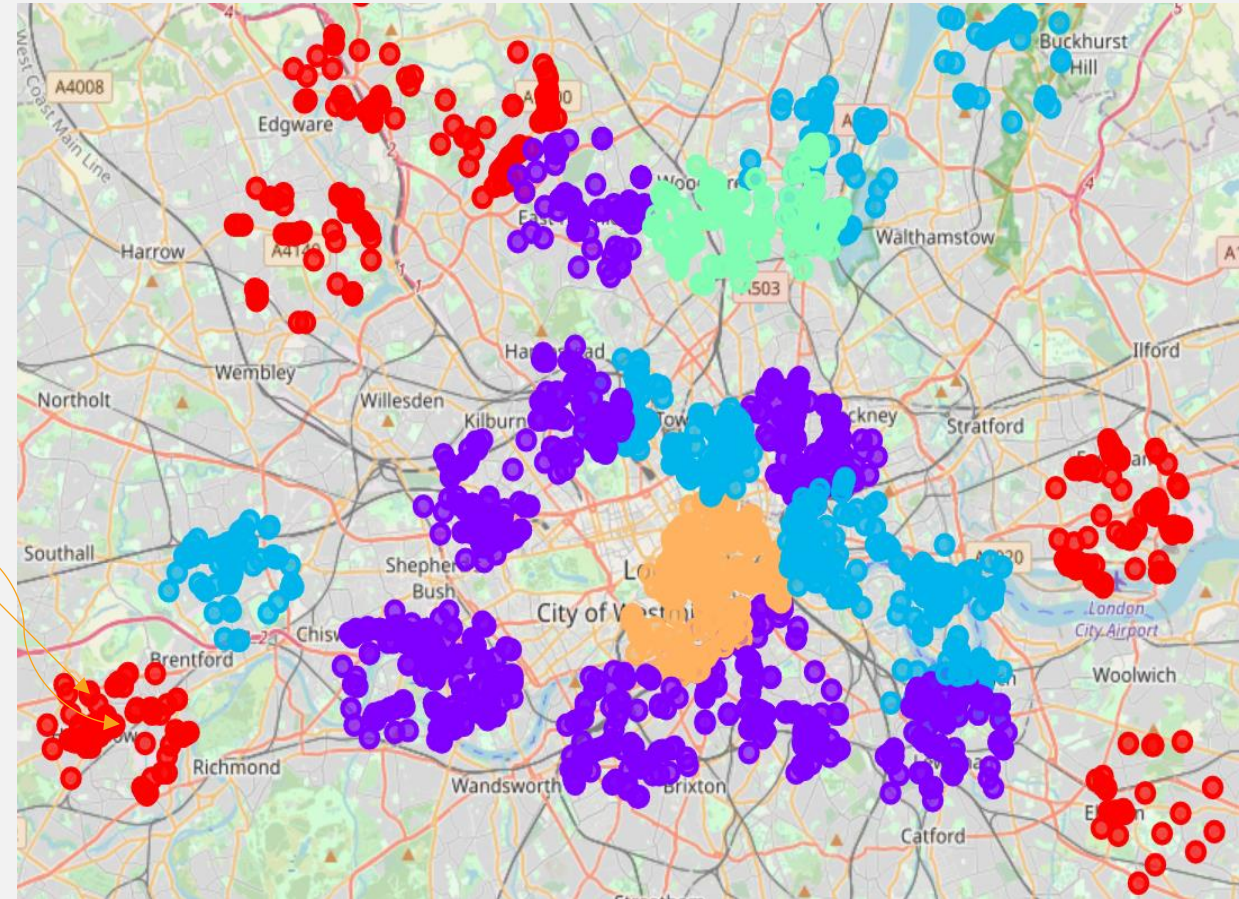
© Mapbox

© OpenStreetMap

Improve this map

RESULTS

Using K-Means clustering to establish Boroughs with most popular F&B/entertainment venues. Consider the moderate clusters (1, 2, 3) for best business viability, and avoid extreme clusters (0, 4) that may be either too remote or too competitive.



Red (0) and Orange (4) clusters are the most extreme, and may be locations that are too remote or too competitive.

Consider the moderate clusters, shown in blue, purple or green.

CONCLUSIONS

From Wikipedia and GLA data:

- Top for business survival: Richmond, Bromley, Merton, Hackney, and Kingston upon Thames. This implies it is not critical to be near city center, as there are benefits from locating further, e.g. lower rental rates and competition.
- Among these 5, only Hackney is in Inner London and has a moderate proximity of number 9 out of 32.
- Hackney also scores best on (a) population density, (b) % of population of working age, and (c) public transport accessibility, which are the three most important features for business survival.

From Wikipedia and Foursquare data:

- Boroughs popular for cafes/coffee shops: Bexley, Bromley, Hackney, Islington, Richmond.
- Among these 5, only Hackney and Islington are located in Inner London and has a moderate proximity of number 9/10 out of 32.
- Boroughs with competitor pet cafes: Richmond, Tower Hamlets, Islington, Greenwich, Camden, Bromley. Should avoid.

From K-Means clustering:

- Extreme clusters (clusters 0 and 4) are located in central and outer London respectively. To strike a good balance between popularity and rental/business costs, avoid extreme clusters.

HACKNEY!



Taking all insights together, we can conclude that **Hackney** is an ideal borough for opening our pet cafe, for the following reasons:

1. Hackney scores well in business survival, affordability and accessibility to residents.
2. Hackney does not have an existing pet cafe as a competitor.
3. Hackney is moderately close to city center and also still considered Inner London, thus helping to strike a balance between accessibility/popularity and business costs.
4. Hackney is not located in the extreme clusters where popularity is most or least intense. This would also help strike a balance between accessibility and competition.

EVALUATION

- This analysis is based on publicly-available population, geolocation and business data, some of which were updated two years ago. This analysis can be improved by using newer data once available. This is especially pertinent as the impact of COVID over the past year may have brought about significant changes in trends.
- In addition, there was difficulty obtaining suitable data on rental costs of retail spaces matched according to boroughs. Availability of this datapoint could also improve the analysis.