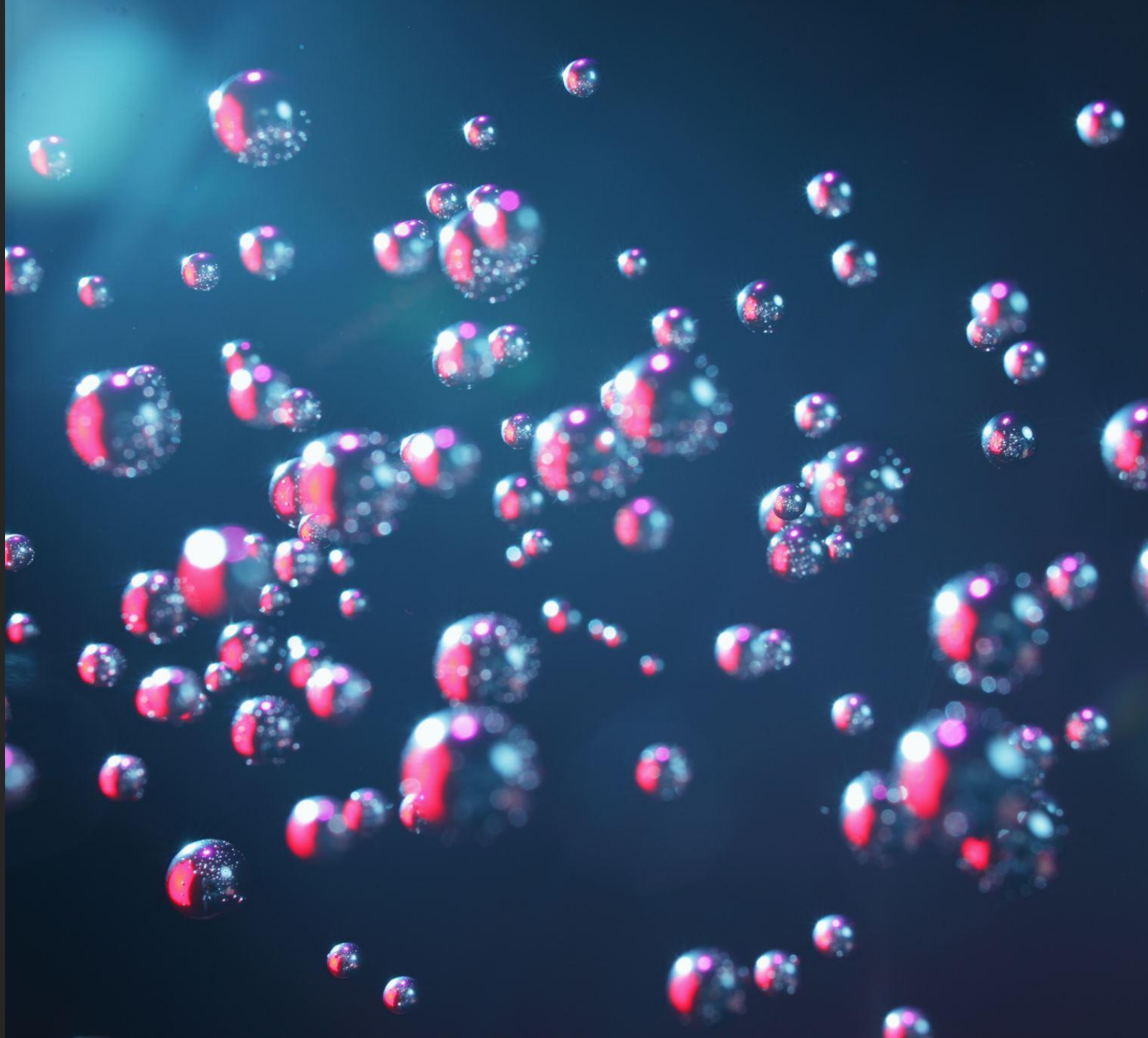


# The Battle of the Neighborhoods

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XIAXI CHENG



# Business problem of "XYZ's"

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Restaurant expansion in London – borough selection:

Three key requirement for the expansion:

- Maximise exposure to the public across the city
- Reduce cost
  - Rental cost, delivery cost
- Local supply
  - Local supermarkets

# Methodology



Data exploration  
(Rent price, venues, population)



Correlation study  
(Pairwise correlation vs Multi-dimensional regression)



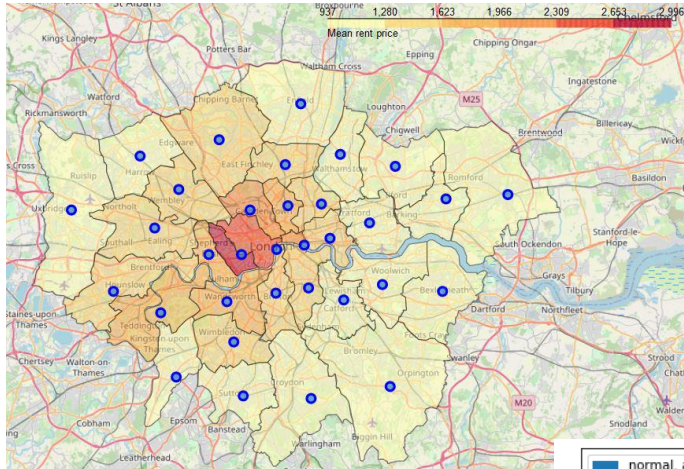
K-mean clustering

# Data Acquisition

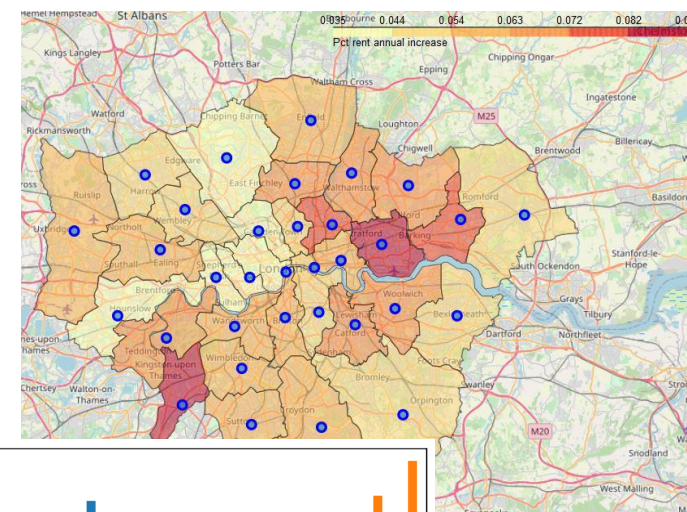
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- ❑ Rent price statistics of each borough from 2011 to 2019
  - ❑ Averaged rent price, annual rent increment
- ❑ London borough statistics
  - ❑ Area, population and postal codes
- ❑ Venues statistics
  - ❑ Venues category distribution
  - ❑ Supermarket exploration:
    - Focus on 7 most popular brands in UK  
(Tesco, Sainsbury's, M&S, Aldi, Asda, Waitrose and Co-op)

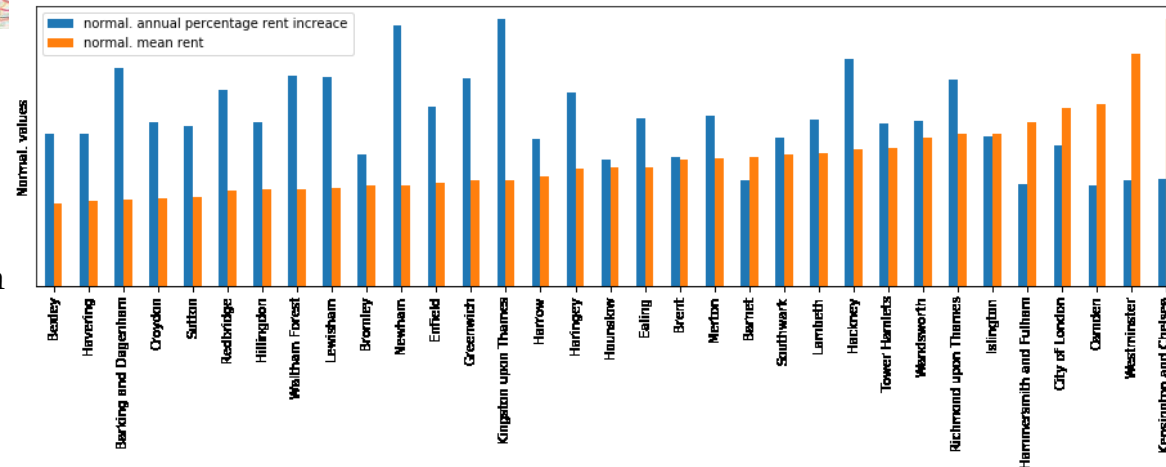
# Rent price



Boroughs with high **averaged rent price** in the city centre with tendency towards west.



High **rent increments** in the north east and south west, indicating developing boroughs

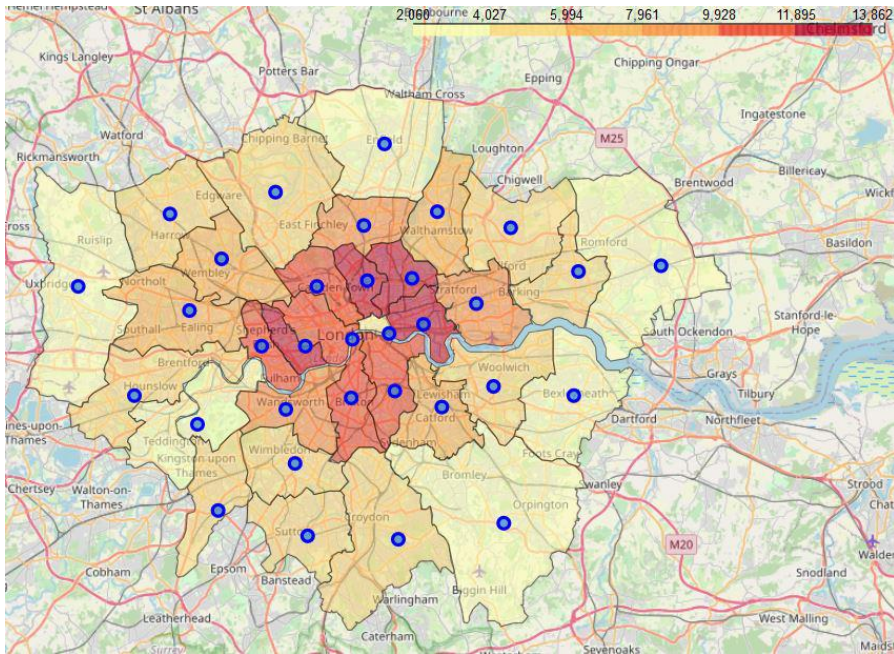


Cheaper boroughs with  
larger rent increase

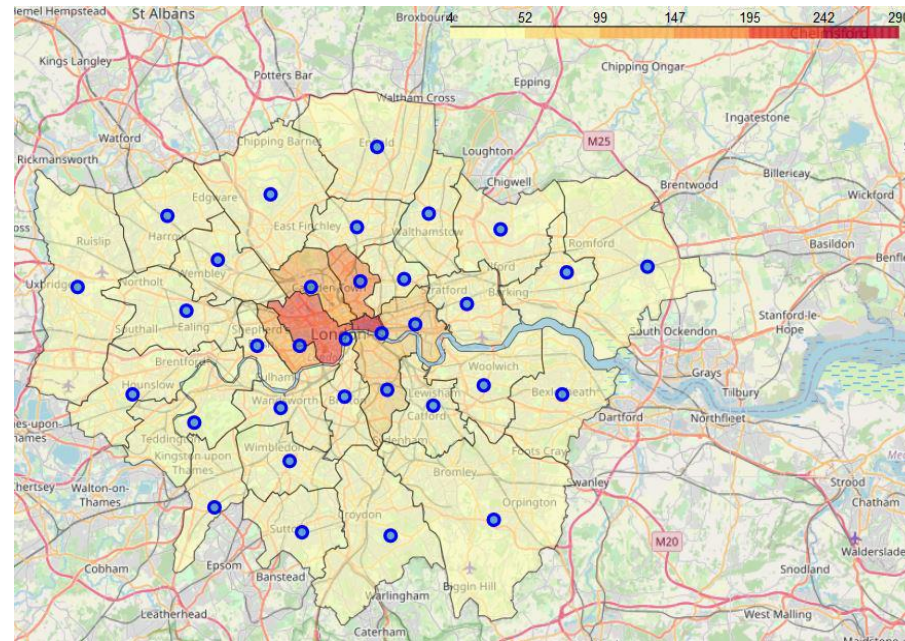
Expensive boroughs  
associated with low rent  
increase



# City features



Highest population density  
in Zone 2 in London (with  
City of London)

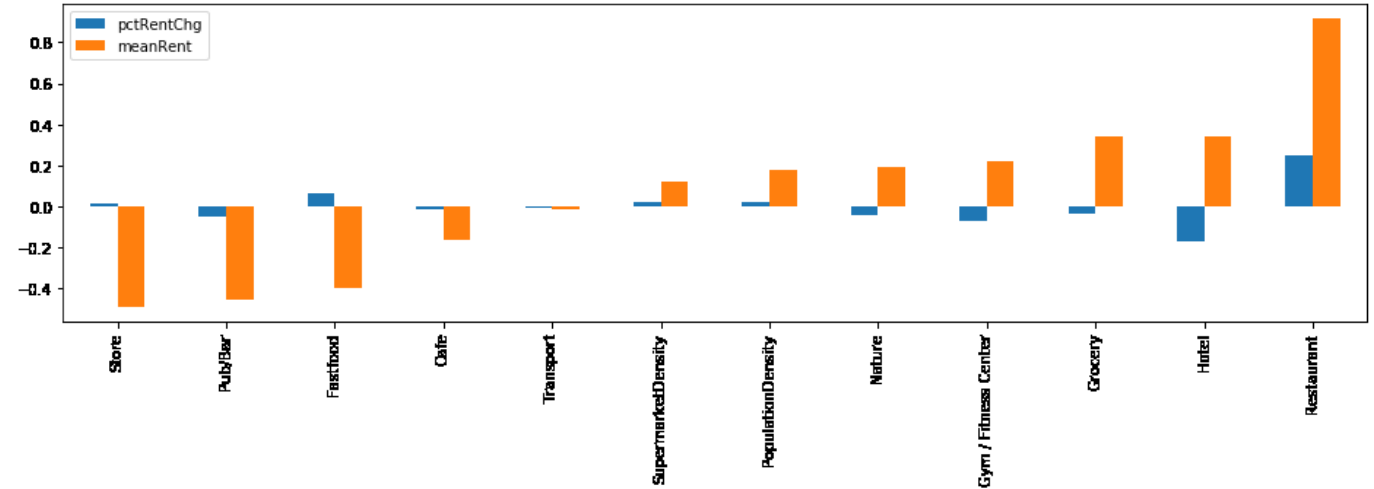
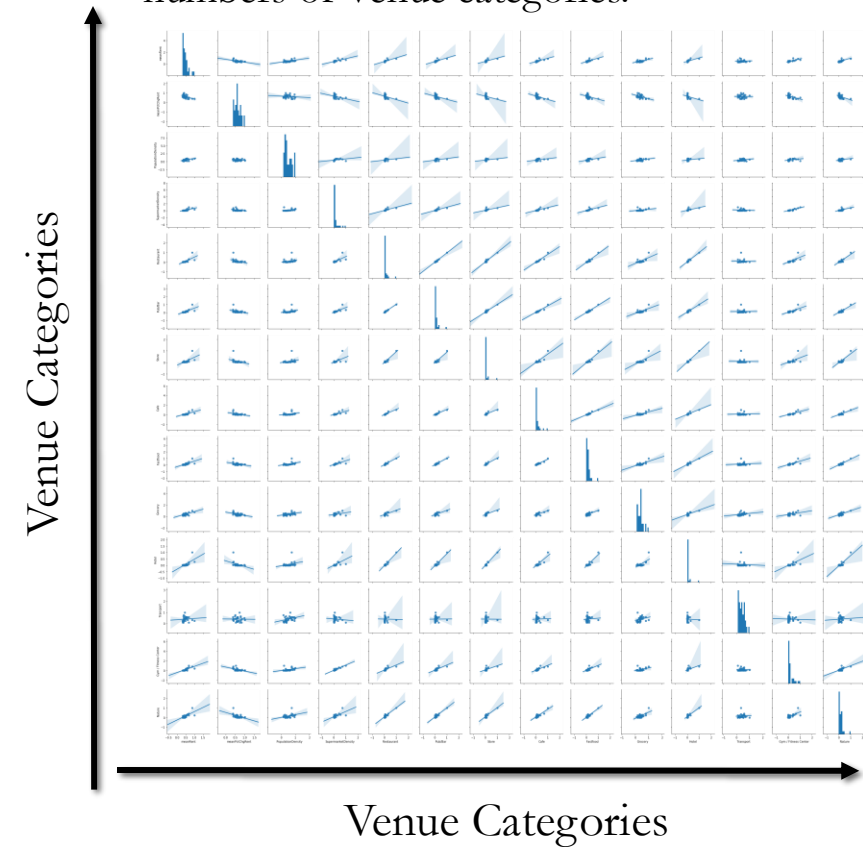


Supermarket density mainly  
in the most populated  
boroughs

Category	Contribution [%]
Restaurants	14
Pub/Bar/Chubs	6.2
Stores	6.1
Cafe	5.3
Fastfood	3.4
Grocery	1.9
Hotel	1.8
Transport	1.3
Gym/Fitness	< 1
Nature	< 1

# What contributes to the rent price movement?

Correlation grid shows pairwise correlation between numbers of venue categories.

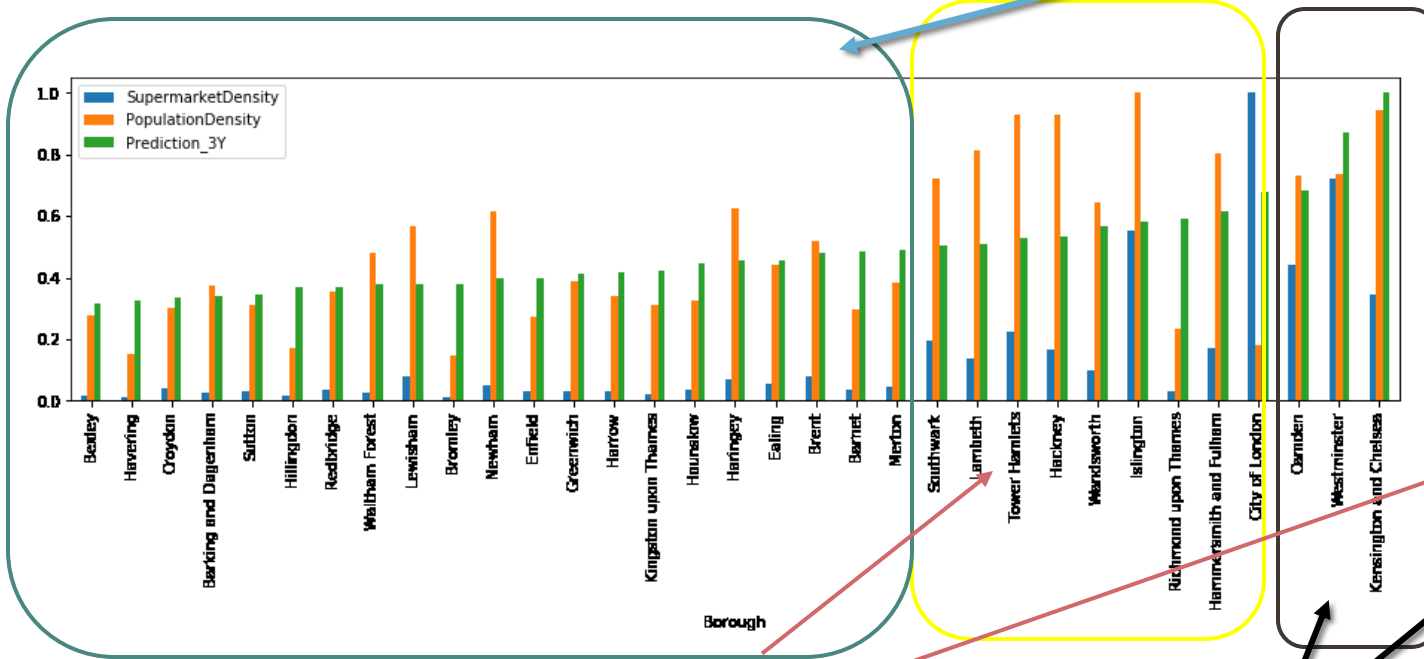


- The mean rent price appears to be mainly driven by the number of: restaurants, Hotels and grocery opportunities.
- Multi-dimensional linear regression suggests that the rent price is negative affected by the pub/bars and stores in the borough.
- The rental increments are only driven by the existing restaurants, in the absence of other categories of venues.
- Transport opportunities don't contribute to the rent price movement.



# Borough selection

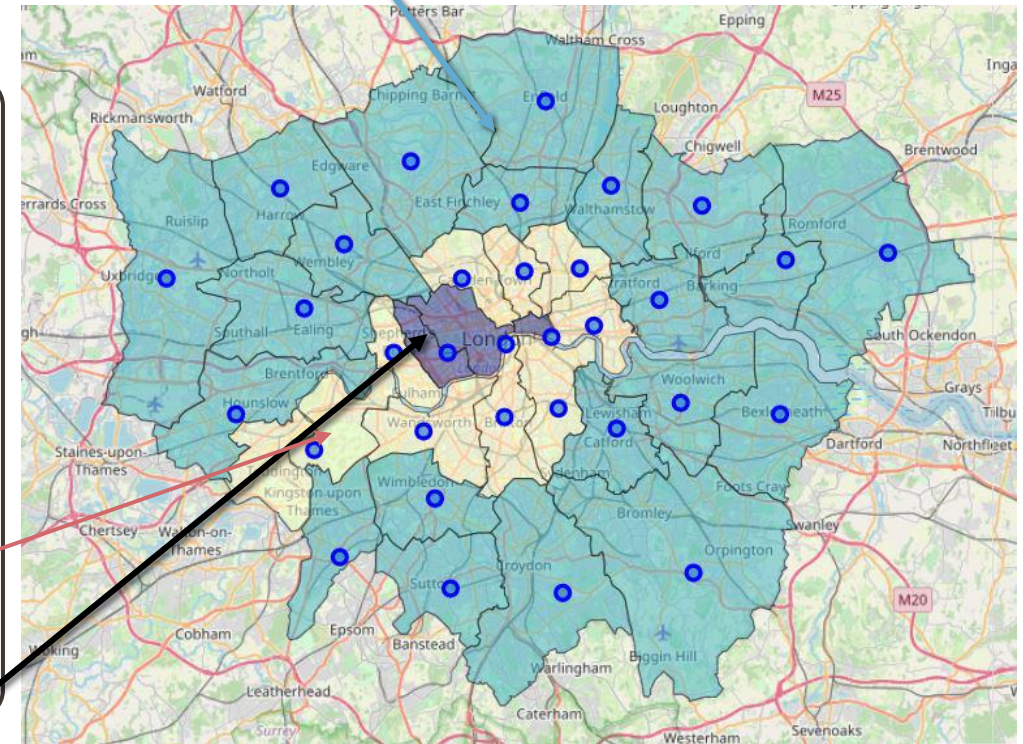
Supermarket density vs. Population density vs. Predicted rental expenses



Balanced boroughs  
(recommended)

Expensive boroughs

Developing boroughs  
(few exposure or shopping opportunities)



Using K-mean clustering



# Conclusion and outlook

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The averaged rent price is mostly driven by indications of balanced living options (hotels, Grocery, Gym, Nature, ...)

Transport and supermarket don't affect the rental price.

Hence, we recommend the following boroughs:

- **Camden, Hackney, Hammersmith and Fulham, Islington, Lambeth, Southwark, Tower Hamlets, Wandsworth and City of London**

as suitable borough to expand the business.

In-depth studies within boroughs can add more value into the decision-making process for the client.  
(Competitor analysis)