**Where in London needs coffee?**

**Introduction**

For this project, I decided to work out where the best place would be for a new coffee shop to open in London, taking into consideration the number of coffee shops already in the area and the ratings they have. If there are lots of coffee shops with mainly good reviews, that implies that the loyal customer base would be unlikely to switch to a new business so the best area would have few coffee shops and/or lower ratings on the coffee shops already there.

**Data**

The data I will be utilising is the coffee shop category from FourSquare looking at Central London to summarise the number of coffee shops and the average rating of those coffee shops. I also acquired population data and rental data for the postcodes from doogal.co.uk and [home.co.uk](http://home.co.uk)

**Method**

After cleaning the data from Wikipedia on Central London postcodes and finding coffee shops in each area. I looked at the number of coffee shops in each area. Then, used k-means clustering to group the areas by the top venue categories in each area. I used the population size of each cluster to calculate the number of people per coffee shop and the median rent of each cluster to calculate the mean rent per calendar month as well as the rent per potential customer using the population sizes.

**Results**

As can be seen from my code, there was not a conclusive answer as to where the best place to open a coffee shop would be. Factors taken into consideration were, the scale of competition from other coffee shops, the population of the area, the rent of the area and the rent in comparison to the number of potential customers. Based on these factors, I think the best place to open a coffee shop would be in cluster 3 as while the rent is not the cheapest (£2324.56), there is the highest potential customer base (1124.83 people per coffee shop) and relatively one of the cheapest rents per potential customer (£0.11 per potential customer). Cluster 3 relates to areas including Finsbury (East), Moorfield's Eye Hospital, St Luke's, Bunhill Fields, Broadgate, Liverpool Street and Barbican (turquoise on the map).

**Discussion**

During this project I encountered many issues including a poorly defined brief, limited Foursquare queries and difficulty acquiring data. I do not believe my brief was very well defined for this problem as I do not have very clear goals as to what factors are the most important for a new business. If I were to do this project again, I would like to more thoroughly research what is the most important to capitalise on e.g. rent, potential competitors or some other factor. I also was unable to query Foursquare as many times as I would like for the ratings of each coffee shop under the Sandbox tier account, and so had to change the way I went about this project. The last major problem I encountered was difficulty getting the data I would have liked to use. I would have liked to look at the ratings of each coffee shop as mentioned, as well as the average sales for coffee shops per area, independent vs chain coffee shops in each area etc. Datasets appeared to be pretty hard to find by just searching online, especially when looking for free datasets as most were behind a paywall.

**Conclusion**

I summarised from this project that the best place to open a coffee shop would be in cluster 3, which includes the areas of Barbican, Broadgate and Liverpool Street.