## Housing and Population in London

### Data Science Capstone Project

## November 2020

## By: Ludwig Forsberg

## Introduction

I lived and worked in London for about 5 years, from 2013 to 2018 just after having graduated university. During that time I read a lot about the lack of housing, and moreover, affordable housing in London and in Greater London. The politicians of the day on both sides were going back and forth on when, if, how and where concerning the issue.

Given Greater London’s historic wide appeal for immigrants, with a population of 8.9 million as of 2018, this issue is not likely to go away soon, even after Brexit I believe. Local politicians will, in my opinion, therefore need to address the issue sooner rather than later.

Therefore, the following project will be directed to the office of the Mayor of London and look at the supply of housing and population by borough or Local Authority (LA), as it is called, in Greater London and by using underground stations try to determine if there is a shortage of housing given the local population. If so, around which underground station would there be an opportunity to build more housing if money was not an object given access to leisure activities, offices, cultural institutions etc.

## Data

In order to complete the above analysis I will require different sets of data sources. As I have identified them, I will require the following:

1. London Underground station coordinates
2. LA (Local Authority) coordinates
3. Housing supply statistics from Greater London by LA
4. Population statistics of Greater London by LA
5. Foursquare API venue data for London by LA

### London Underground Station Coordinates

The coordinates I managed to find online in a downloadable csv format, here <https://www.doogal.co.uk/london_stations.php>. The file provides station name, coordinates as well as zone of the station which could be useful for further analysis.

### LA Coordinates

The LA coordninates were found here:

<https://geoportal.statistics.gov.uk/datasets/ae90afc385c04d869bc8cf8890bd1bcd_1>

This was the latest I could find, from 2017, however, for the purposes of this paper the fact that it is 3 years old is of little consequence as the boundaries tend to seldom change.

### Housing Supply Statistics by LA

The data on housing supply was found on the government’s website, gov.uk on <https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants>.

This information will be used in order to see how much supply there is compared to the population. Some assumptions will be made here as to the nature of the supply; that each dwelling can house min 2 people and they all fulfill the minimum standard of living requirements. This data is for 2019, and therefore, for the purpose of this paper, is not too old for usage.

### Population Statistics by LA

This data is from the government’s official statistics office, the ONS, Office for National Statistics, for 2015, <https://data.london.gov.uk/dataset/office-national-statistics-ons-population-estimates-borough>. It is the latest data I could find that included boroughs and LAs, with a total population for London of 8.7 million. I will use the percentage split of the boroughs in the data I found and use those percentages to determine the current population by borough as of 2019, 8.9 million.

### Foursquare API Venues

The venue data has been extracted using the Foursquare API. This data contains venue recommendations for all boroughs in Greater London and is used to study the popular venues of different boroughs.