

## **IBM Data Science Professional Capstone Project**

### **Problem Statement**

The majority of property or real estate investors will say that the three most important factors when investing in a property are; first is location, second is location and third is location. This notion is common whether the investor is doing traditional buy-to-let (sometimes known as single lets), Housing in Multiple Occupancy (HMOs) or Short-term rentals (serviced accommodation, holiday lets, Airbnb, booking.com, Expedia, laterooms.com, HomeAway.co.uk, TripAdvisor etc). Every property investor needs to get the location right for a good return on investment as a very crucial step in the property acquisition process.

Why is location so important? Firstly, location is constant and cannot be changed while the property itself can be changed by renovations. Secondly, the location determines the supply and demand for rental properties. Third, location determines desirability and future value of your property due to proximity to value adding amenities such as shops, transport, pubs, lifestyle centres, entertainment, cafes, restaurants etc. Fourth, Location determines the optimal rental strategy i.e buy-to-let, HMO or short term lets. Fifth, location determines profitability. Cities are generally more expensive than rural areas for example although it does not necessarily mean that cities are always profitable.

### **The data required to solve the problem**

When a property investor carries out location research, they consider which locations would suit their target market. This project shall focus buy to let and short-term rentals property investment strategies. The most important location factors for that type of investment strategy are:

1. Supply and demand for short term rental properties. This data can be obtained from short-term rentals or serviced accommodation or holiday lets players such as Airbnb, booking.com, Expedia, laterooms.com, HomeAway.co.uk, TripAdvisor etc. Data from Airbnb would give a very good trend because they are the biggest player in the short term (serviced accommodation) rentals market.
2. The geolocation data for London neighbourhoods. This will help visualise the most popular areas for short-term rentals.
3. The price per night distribution. Again, this can be obtained from Airbnb data. This will be useful for the property investor to analyse different property deals available.
4. Taken in a vacuum, short-term rental data only tells half the story. Combining the short-term rental data with research on the least-expensive housing neighbourhoods. Finding a honey spot between low mortgage (or leasing) rates and high returns on investment would be the best strategy for buy-to-let or short-term rental. Therefore, the average property prices for London Boroughs will be acquired and analysed.
5. Short-term rental market usually thrives on good experiences for guests. Crime is one of the main things which usually ruins the experience for short-term rental guests and therefore crime data for London neighbourhoods will be analysed to just have picture of the crime trends in London Boroughs. This will help the property

investor to make a decision on striking a balance between costs and guests experiences.

6. Proximity to trending venues and other amenities. This is an important consideration when property investors, especially short-term rental, to consider for their targeted market demographics and psychographics. After identifying the top trending venues within a certain radius of each short-term rental listings within each neighbourhood will be extracted from [www.foursquare.com](http://www.foursquare.com) via their Application Programming Interface (API). This will help the property investor to understand the venues which are most common near to the highest performing neighbourhoods in short-term rentals.