The Battle of the Neighbourhoods Capstone Project

1   Introduction
1.1 The Background
Despite property market fluctuations, people continue to buy and sell property throughout Greater London. According to data published by HM Land Registry (2018), total property sales for the year ending March 2018 was approximately 94,000. And this is considered low; in 2006, property sales volume was approximately 172,000.

People spend a lot of time searching for their ideal property. Rightmove, a property website, reported households in the UK spend an average of almost 1 billion minutes a month searching for properties on their website.

1.2 The Problem
London is a diverse city, with different locations being highly unique. For someone looking to buy a property in London, it is very difficult to know which area would be most suited to their personal needs and preferences. Although property price is a major deciding factor, there are numerous other variables that help to determine where someone decides to concentrate their property search. These variables include, for example, property types, the quality of primary and secondary education if they have children, public transport accessibility, crime levels, and the general characteristics of the area. Furthermore, every property buyer is different; no two buyers will be the same, and so an area that suits one may not be suited to another. Trying to find an appropriate area within London can take days, weeks or even months of research. And this is before the search for an actual property can even begin.

1.3 The Idea
Utilising Government data disaggregated by London wards[1], and Foursquare location data to assist in characterising those wards, we can use Data Science techniques to build a clearer picture of what defines these various locations throughout London. We can then apply this information to any property buyer and their unique explicitly stated requirements to generate a shortlist of locations in London most suited to that particular buyer.

1.4 The Target Audience
Multi-dimensional characterisation of London wards will be particularly useful for anyone looking to purchase property within Greater London, especially those that are not familiar with the different locations within London. By being able to match their personal needs and preferences to London locations, and selecting a property from these locations, they will have a greater sense of confidence in their final purchase. Furthermore, being able to narrow down location options in this way will greatly reduce the time and effort spent on researching locations before reaching a decision.

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[1] Wards are electoral districts that make up Boroughs (local authority districts that make up Greater London). Boroughs are quite large areas, so going down to ward level reduces variability, but retains the size necessary for a property buyer to have a realistic chance of finding a property for sale in the shortlisted locations. To further reduce variability, we could take the postcode level, but then there will be significantly fewer properties for sale within each location.

This type of characterisation will also assist estate agents in providing a highly personalised service. With this tool, estate agents are better equipped to find suitable options for their clients, increase their efficiency, and help them secure repeat business.

People looking to rent property may also be interested in this project. Although the property price category would not be relevant, all other categories may be of interest for potential tenants to determine where in London would be most suitable for them to look for a property to rent based on their needs and preferences.

1.5 The Case Study
Once London wards have been characterised, a case study will be applied in order to demonstrate how this project will provide house buyers with a shortlist of recommended London locations to centre their property search based on their personal criteria.

Our case study is a family of 5 – husband and wife, and their 3 children aged 12, 9, and 5 – moving into London from a more rural location due to the wife accepting a job position in central London.

The family have little knowledge of areas within London. With their busy schedules and preference to move as soon as possible, they have limited time to conduct research to find the ideal location within London to buy in. Ideally, a location would fulfil the following requirements:
- The property price to be around their budget of £800,000.
- The husband is a personal trainer looking to build up and expand his business, and so access to gyms and outdoor areas is important.
- The wife will be working in central London, so good access to the public transport network would be beneficial.
- With one child now in secondary school, and GCSE's on the horizon, the quality of secondary education is particularly important. With another two children in primary school, the quality of primary education is also important.
- They are looking for a house – ideally semi-detached or detached, with a terraced house being an option in the right area. They do not want a flat.
- With children, safety is always a concern. They want to be sure that they are in a safe area with low crime levels.
- An area with parks and open space would be great, although not an absolute priority.
- They would like a sociable area with cafes, food stores, and things for the children to do (e.g. libraries, swimming pools/leisure centres), especially outdoors activities as that is what they are used to coming from a rural location. Not too busy in terms of nightlife but some options available for dining out. And not a tourist area.