

Choosing the Right Location for a Film Festival in London

Michela Russo

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1. Introduction

1.1 Background information

The Cineteca di Bologna, a worldwide-known Italian foundation specialized in film conservation and restoration, organizes a popular film festival every summer in the small town of Bologna, Italy, in which they show the latest film restorations from all over the world. Nearly one hundred thousand guests attend every year, most of whom are from abroad, particularly the USA and the UK. The festival is now so popular that they are considering exporting it to another country: this way, the films can be presented a second time, on the international stage, and thus have more resonance. Besides, the festival's home town is getting a little too small for such a huge and steadily-growing crowd. In a word, the foundation is looking for a larger stage, a location that can add notoriety and prestige to their name and to their event.

1.2 Business problem

We can sum up the foundation's requirements in the following set of points:

- They wish to export the festival to another country, more specifically to a renowned, cosmopolitan city where the films can be shown in English or with English subtitles;
- The festival is made up of three parallel screenings programmes running at the same times slots every day, so in the city in question there need to be at least three cinemas close together, at a distance that can be covered quickly, possibly on foot, in case that the guests should want to switch film programmes during the course of the day;
- It would be preferable if the cinemas were independently owned, as independent venues tend to have more character, or if they were at least venues of historical significance, since we are dealing with restored films from past eras, to create the right atmosphere for their presentation;
- The areas around the cinemas need to be equipped with enough hotels, restaurants and amenities to accommodate and entertain the large number of guests who faithfully attend the festival every year.

When I think of a multicultural, glamorous, prestigious city in Europe where the films can be shown in English, a city full of fascinating, historical cinemas and theatres, London is the first name that comes to mind. I think of London over other exciting cosmopolitan cities like Berlin (where it is not uncommon for films to be shown in English) or other cities in the UK or Ireland, because London is much better connected. It has six major airports and is reachable by plane with any airline from any location in the world, and usually at cheaper fares, being such a popular destination; it is also quickly and easily reachable by train from mainland Europe, and even by ferry. I choose it also because many of the archives which contribute to the festival's programmes with their film restorations, as well as many of the festival guests and speakers, are from the UK and particularly from London. All in all, London looks like the right choice to me – and I am going to spend the next few pages trying to prove it.

1.3 A few clarifications

London may appear like quite an intimidating giant to approach. Fortunately, however, London is divided into boroughs: smaller units of government, or councils, keen to promote themselves by hosting events on their territory. So, if the foundation was to organize the festival in London, as I think they should, I would suggest that they deal with the local borough councils directly, to show them what a good opportunity it would be for them to have such a popular event happening within their jurisdiction. For this reason, the research will treat the borough as the referent of choice and consider only cinemas within the same borough. For instance, there are a number of cinemas across the boroughs of Camden and Westminster which are quite close together: these will not be considered, however close, because they do not belong to the same borough. Please note that, from now on, I will refer to the borough of Westminster as 'City', for that is its official name. I would also like to specify that I am looking for three venues – not three screens. Independent and historical cinemas of the kind I am looking for tend to have a limited number of screens, usually one or two; but even if I was to encounter in my research a cinema of this kind with three screens, I would still look for two more venues. Three separate venues are the minimum requirement, for two reasons: to avoid long queues at ticket booths, and for safety issues, to prevent the concentration of excessively large flows of spectators going in and out at the same time. Let's remember that the festival consists of three cinemas programmes all running at the same time-slots. Lastly, the research will not consider, if not as a last resort, the London West End or, more broadly, the already cited City of Westminster. Firstly, because it is already saturated with cinema and theatre events all year round; secondly, because it has no independent cinemas left, except for the Prince Charles Cinema (a fact that they proudly state it in all their advertisements) and, arguably, the Regent Street Cinema, which is affiliated with the

University of Westminster. Rather, the research will focus on other boroughs that meet the foundation's requirements, starting from those closer to city centre.

2. Data acquisition and cleaning

2.1 Data Sources

The starting point of the research was a series of location data extracted from the Wikipedia website; more specifically from the article ['List of London Boroughs'](#), which contains a table listing, among many other details, the coordinates of each borough. From this table, after a proper amount of data cleaning, I derived the coordinates needed to query the Foursquare database. The Foursquare database was crucial to obtaining a list of the cinemas in London divided by location and, therefore, to highlighting the most promising boroughs. The Foursquare database was again essential to refine the research further: more specifically, to view the ratings of a selection of cinemas and to explore the offer of the 'finalist' boroughs in terms of accommodation, food and entertainment.

2.2 Data Cleaning

As I said, the location data table retrieved from Wikipedia required quite a bit of cleaning. Firstly, I removed the table columns that were not pertinent to the research, such as those referring to political control or headquarters addresses.

Secondly, I split the latitude and longitude coordinates into two separate columns, as they were grouped together, and I stripped them of characters which were likely to cause confusion later on, when querying the Foursquare database: for example, the N, E, W relating to the cardinal points, the '/' and the degrees (°) symbols. Once stripped of these characters, I could take the necessary step (for the purposes of plotting and clustering) of transforming the latitude and longitude data strings into floats.

It was then that I realized that many coordinates in the original table scraped from the Wikipedia website were far from exact. Knowing London quite well, it was enough for me to take one good look at the newly stripped coordinates to realize that some boroughs did not seem correctly placed. My suspicions were confirmed once I confronted the table's coordinates with Google's and I visualized them on Google Maps.

I made a first attempt at rectifying the mistakes by acquiring a new set of coordinates through Geopy's geocoding service, but they did not seem quite right either. As a matter of fact, when I double-checked these new coordinates using Google Maps I realized that they also contained several mistakes. In the end, since the London boroughs are not that many and the mistakes were mostly confined to the latitude set, except for one instance, I decided to replace the set of latitude coordinates myself, manually, using Google Maps as a data source.

At last, once the London boroughs appeared to be placed correctly on the map, I could proceed with querying the Foursquare database. Since I only needed to find cinemas, I used the category ID 'Movie Theater' to narrow the search. Still, Foursquare returned an endless list, which I turned into a data frame and cleaned by filtering and renaming the columns, thus eliminating unnecessary commas, dots and brackets. Looking at the list, it became apparent that Foursquare does not distinguish between independent cinemas and cinema chains: very often, independent cinemas are generically labelled 'Movie Theater', while only very few fall into the 'Indie Movie Theater' category. Furthermore, the list included multiplexes, because they are a sub-group of the generic 'Movie Theater' category and it contained, inexplicably, other non-pertinent categories such as offices, malls and art galleries. As a result, I could not exclude cinema chains from the list, because they were camouflaged with the rest; but I could at least eliminate multiplexes and unrelated categories from the data frame by targeting all entries that did not belong to the two categories I had originally chosen for the query.

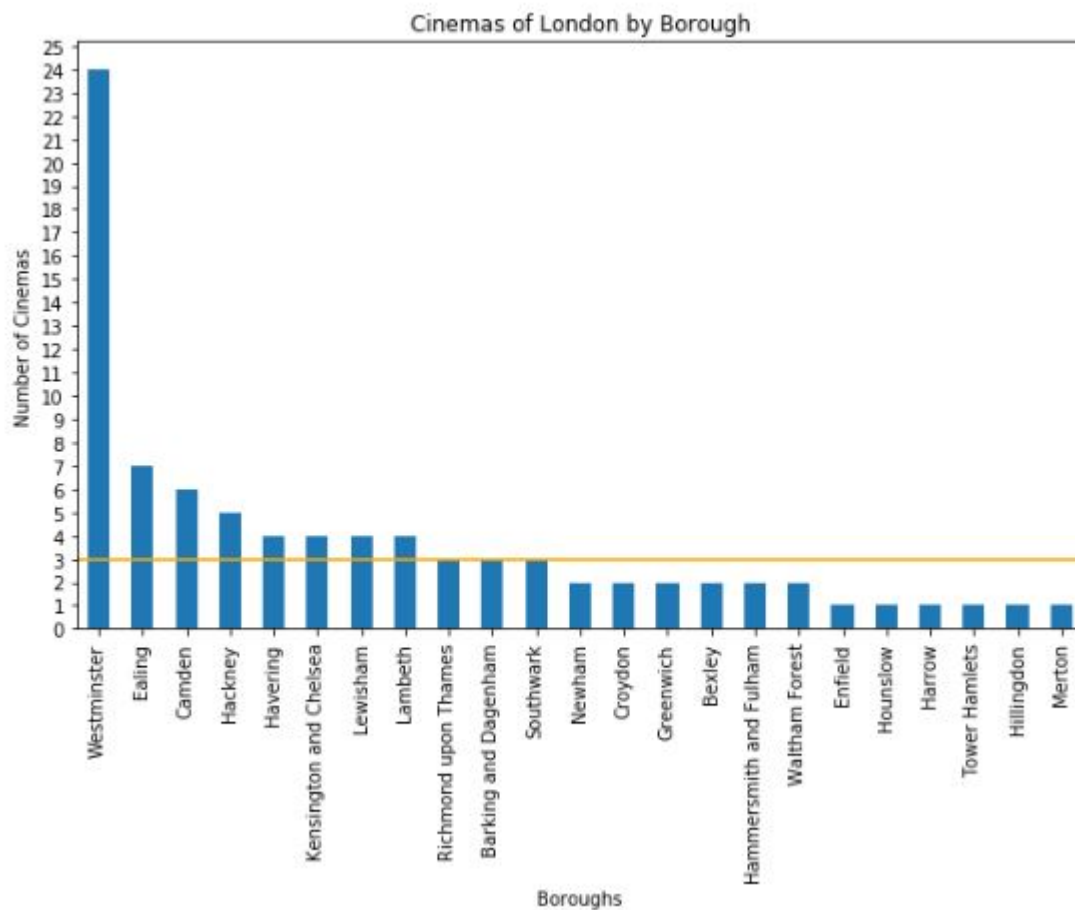
Afterwards, I merged the initial borough coordinates data frame with the new cinemas data frame obtained from Foursquare to compile the definitive list of London cinemas grouped by location. However, my troubles were not over because, to Foursquare, location does not necessarily mean borough. The borough to which each cinema belongs is a piece of information that very often is not stored in the Foursquare database, so in the data frame the cinemas were assigned to boroughs according to their closeness to the borough coordinates provided, which resulted in some imprecisions. The mistakes were very few and mostly limited to a small number of cinemas in the City of Westminster, which were assigned to the neighbouring borough of Camden instead, being so close to the border. Once I put these 'intruders' back where they belong, I felt ready to proceed with the data analysis.

3. Methodology

3.1 Exploratory Data Analysis

After data cleaning, I was confronted with the following situation: as the bar chart below shows, the boroughs that possess the requirements for further exploration, i.e. a minimum of three cinemas within their jurisdiction, are not that many. Interestingly, there are many rather peripheral areas among them: Ealing, Havering, Lewisham, and Richmond. As expected, the City of Westminster, with its array of West End cinemas, wins the contest by an overwhelming majority. This is not very good news to me, as I said that I was going to avoid Westminster and stay as close as possible to the centre. And the list is certainly going to be narrowed further, because the three cinemas requisite is not enough: I have to establish how far apart the cinemas are, if they are independently owned or at least venues of historical interest, if the area around them can be appealing enough to the guests.

Fig. 1: Number of cinemas by borough. The orange line indicates the minimum threshold.



Since we are dealing with spatial data, I found it helpful to display the list of cinemas obtained in the data cleaning step on a Folium map. The map shows the cinemas retrieved by Foursquare in blue and the central borough coordinates as red dots. It confirms at a glance the observations I just made:

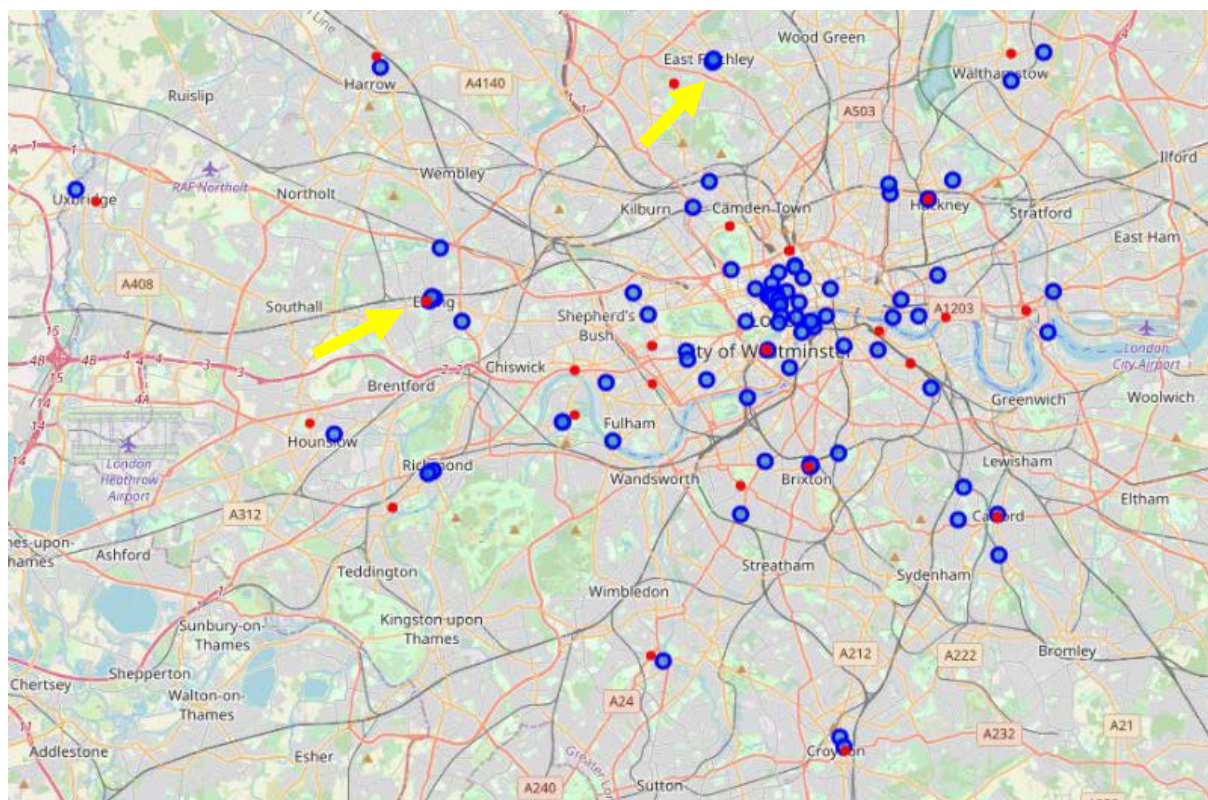


Fig. 2: London's cinemas on a Folium map. The yellow arrows indicate the boroughs of Ealing and Havering.

- 1) Most of the boroughs that are furthest away from the city centre are not equipped with enough cinemas to be of interest - which is good news, as I said that I was going to leave the far away boroughs for last;
- 2) Most of the cinemas in London are concentrated in the very centre - more precisely, in the West End.

However, the map adds also a thin veil of mystery to the matter. The cinemas within the boroughs of Ealing and Havering (indicated by the yellow arrows on the map), which had appeared in the bar chart above among the most promising choices, with four or more venues each, seem to strangely, if not suspiciously, overlap. To answer this and other questions, the map was no longer sufficient: a new tactic was needed.

3.2 Clustering the Boroughs

In order to make an informed decision, I needed to know the exact number and names of the cinemas situated in each borough. To obtain this information, I transformed neighbouring cinemas into clusters using DBSCAN. I chose DBSCAN as it is the best fitted algorithm for identifying clusters in a spatial context and, unlike k-Means, it does not require the initial specification of the number of clusters. The algorithm did a good job of grouping cinemas by borough, except for the usual crossover between the cinemas in the City of Westminster and those in the borough of Camden, which I had fixed earlier in the data frame. Nevertheless, it was extremely useful, if not necessary, to get rid of outliers and low density areas and to paint a clearer picture of each borough, so that I could make a

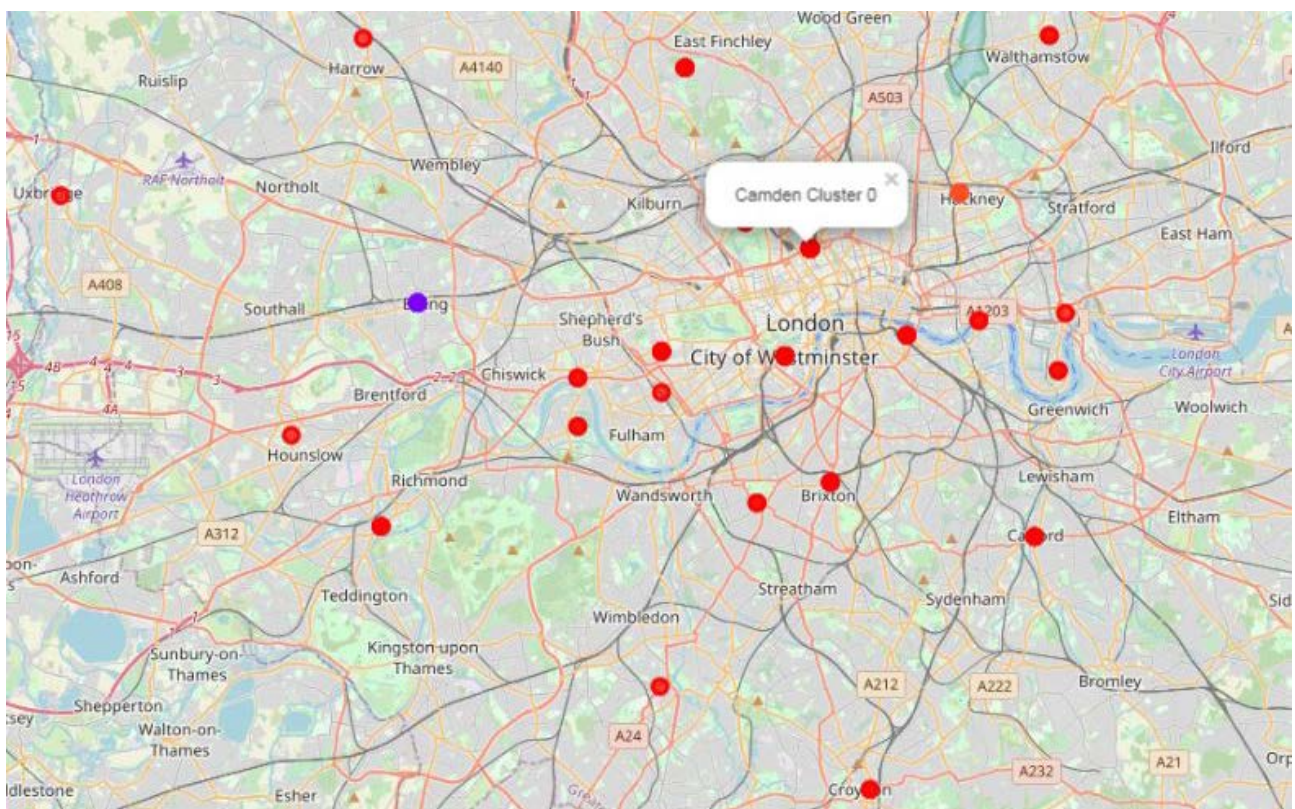


Fig. 3: London's boroughs turned into clusters by DBSCAN

rapid and informed selection.

Apart from a plethora of outliers (correctly classified as such), the algorithm returned ten clusters, easily interpretable at a glance:

- 1) Borough of Camden: it contains nineteen entries, which sounds promising, but thirteen of them actually belong in the City of Westminster. It is the usual misunderstanding, but it is of no consequence to us: Camden is definitely not our location. Out of the remaining six entries, only one is a cinema and it belongs to the Curzon cinema chain. The others are private screening rooms for hire and other categories of no interest for the purpose of my research;
- 2) Borough of Ealing, which appears to contain seven entries, as we have seen just a moment ago from the bar chart, but - in fact - it does not. Four entries out of seven correspond to the Rooftop cinema, which appears with four slightly different names in the Foursquare database. The mystery of the overlapping circles on the map was thus instantly unveiled by the clustering process. The rooftop cinema, as the name suggests, it is an open-air cinema, which is a little risky considering London's unpredictable weather. In addition to this, two of the remaining three entries are not cinemas, but film clubs, which are of no use to us;
- 3) Borough of Hackney is a pleasant surprise, as the cluster contains three independent cinemas, plus a Picturehouse cinema. Picturehouse is a chain, but the Hackney venue has a beautiful screening room in the attic. This is an appealing feature that is worth considering;
- 4) Borough of Havering: besides being a little too far away, the borough looked promising - except for those mysteriously overlapping circles on the map. It took me a couple of minutes on the internet to find out that the cluster displays three cinemas, in a total of four, which do not exist - or rather, they exist elsewhere and they have been erroneously placed in this borough by well-meaning Foursquare users;
- 5) Borough of Kensington and Chelsea: this is another promising borough because, like Hackney, is not too far from the centre, it is an attractive, very well-known area, and it contains three independent cinemas;
- 6) Borough of Lambeth's cluster was a little disappointing: again, I did a little research on the internet to find that two out of the four entries do not exist;
- 7) Borough of Lewisham: there are four cinemas in the cluster, one of which does not exist, one is a screening room for hire inside a pub, one is a film club. No damage done: Lewisham was a little too far for my liking anyway;
- 8) Borough of Richmond upon Thames: the three cinemas in the cluster all belong to chains and Richmond, however beautiful, is quite far from the centre;

- 9) Borough of Southwark: the cluster contains two beautiful independent cinemas, which unfortunately are not enough to satisfy the foundation's needs;
- 10) City of Westminster, which I said I was going to leave for last, as a last resort: the cluster contains eleven entries, five of which are taken up by the British Film Institute's multiple venues and screens, including the IMAX. The British Film Institute is a giant of film conservation and exhibition that we do not want to compete with. We better not step on its toes, and try to keep away from Westminster.

Where does this leave us? Through DBSCAN, I have restricted the choice to two boroughs (if we do not wish to turn to the City of Westminster, with all those high-profile competitors, or to Richmond, with its rather ordinary venues): the borough of Hackney and the borough of Kensington and Chelsea. To explore the areas, I turned once again to Foursquare for help.

3.3 Examining the Finalists

I started by having a look at the average ratings of the cinemas contained in both clusters, and I was very pleased to discover that all the cinemas in question have outstanding ratings. I was particularly intrigued, however, by two specific cinemas, which scored an impressive 9.2 average: the Electric Cinema in Kensington and The Castle Cinema in Hackney. So I queried the Foursquare database again, as I was curious to read a couple of tips about each of these two cinemas. This is a sample of what Foursquare's users had to say to about them, respectively:

"Super luxe cinema with large comfy leather seats, footstools, a cashmere blankets. Amazing snacks and drinks. Book in advance, as most showings sell out."

"Great local cinema to have on your doorstep! Good selection of recent releases, comfy seats, good quality audio and visuals. Monday night tickets only £5."

I was satisfied by these first impressions: so, since the cinemas seem to be very much in demand, comfortable and appealing under every respect, I moved on to exploring the their vicinities.

I started off by querying the Foursquare database one last time to obtain a list of the most popular venues in the areas of interest. The search returned a total of 61 different venues categories for the borough of Kensington and Chelsea and 48 for the Borough of Hackney. It was encouraging to find such a large variety of venues in the cinemas' vicinities, as a richer offer makes for a more interesting neighbourhood and, therefore, a more memorable experience for the festival guests. The next, natural step was to evaluate, after the amount, also the types of venue categories retrieved. I used a bar chart to visualize the frequency of each type of venue so that I could get a sense of the liveliness of the areas.

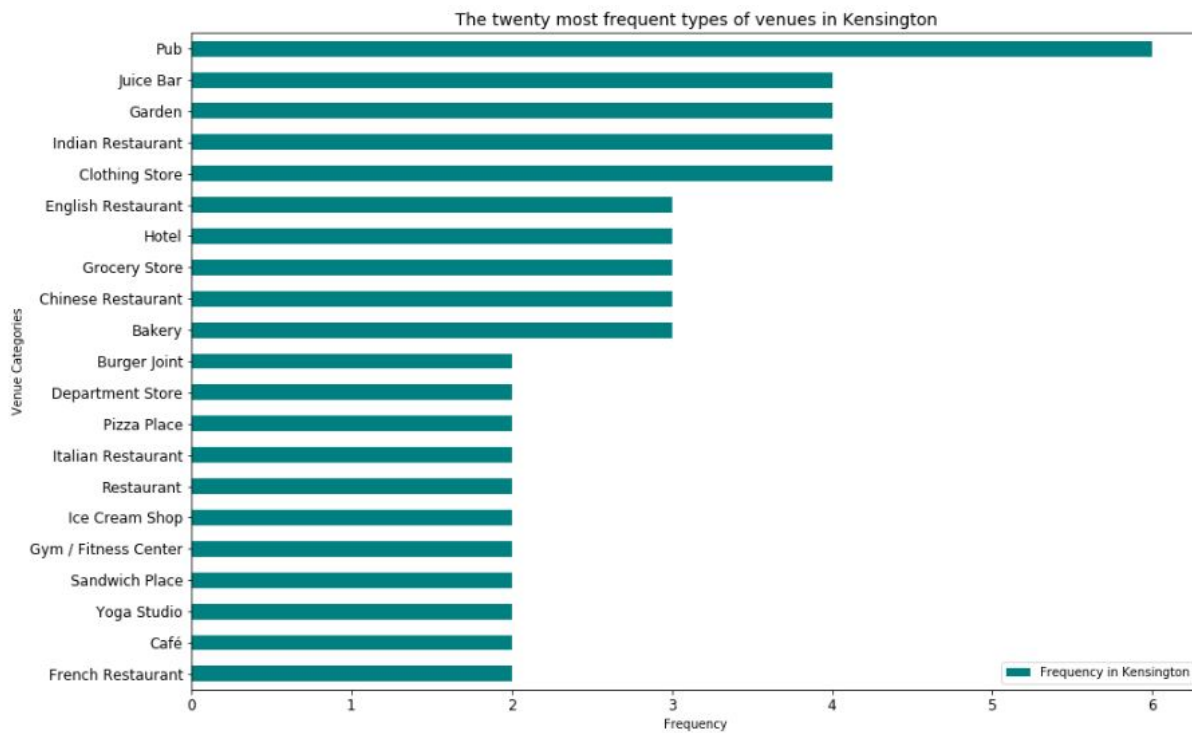


Fig. 4: The top twenty venue categories in Kensington by frequency.

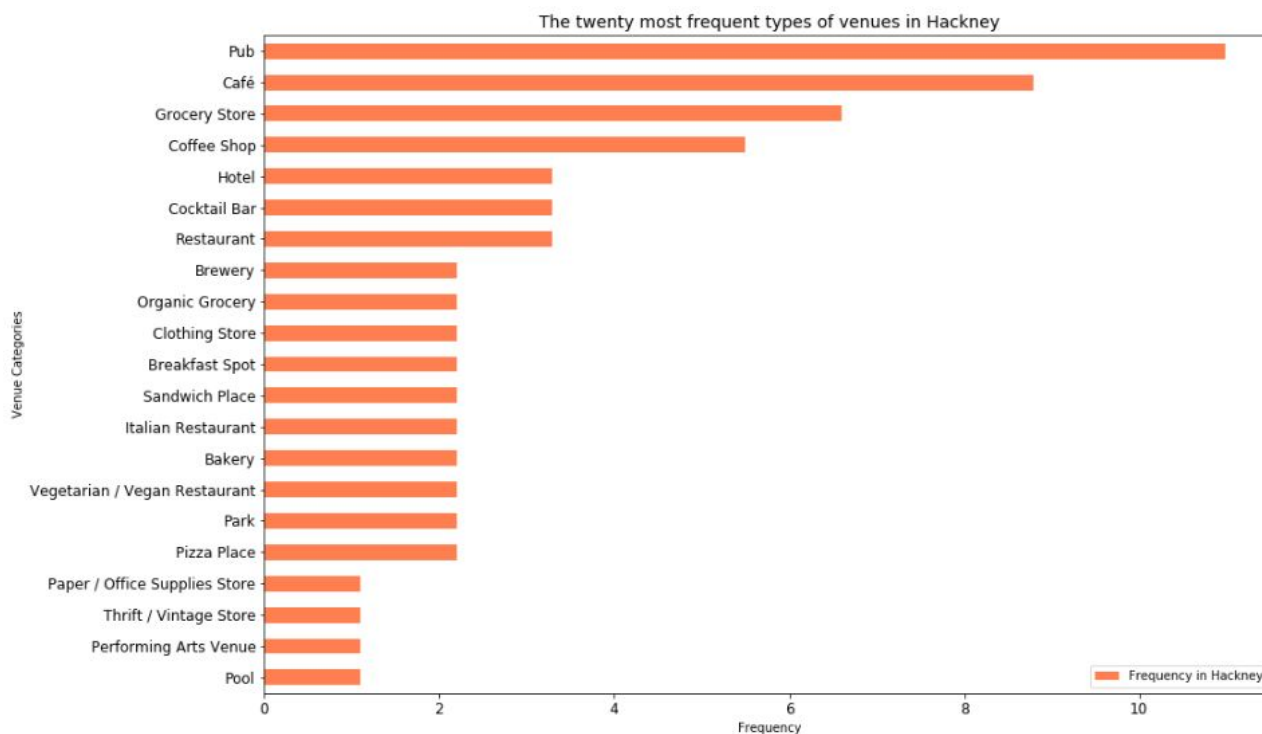


Fig. 5: The top twenty venue categories in Hackney by frequency.

Judging by the bar charts, both areas look very appealing in terms of food and accommodation, with a massive presence of hotels, restaurants, bars and pubs among the top twenty types of venues. One can easily observe, however, that Kensington's offer, except for restaurants and pubs, tilts a little towards daytime activities: among the most popular categories we find juice bars, gardens, clothing stores, bakeries, grocery stores and the like. On the other hand, the Hackney chart gives a sense of a slightly more entertaining

neighbourhood, one that promises a more exciting nightlife: observe the net prevalence of pubs, cafés, cocktail bars and restaurants over other categories, while performing art venues even make it in the top twenty.

Once I had gone through the amount and kinds of venues available, I decided that it was time to plot the venues on a Folium map to get a bird's eye view of the neighbourhoods: that is, to see how the cinemas are spatially distributed in the respective areas and how the venues are distributed around them. The yellow circles represent the cinemas (three in Kensington's case and four in Hackney's), the red circle represents the centremost point between the cinemas, calculated from the average latitude and longitude, while the blue circles represent the venues in the vicinity.

Fig. 6: Kensington and Chelsea: bird's eye view of the area around the cinemas (in yellow). The venues are in blue.

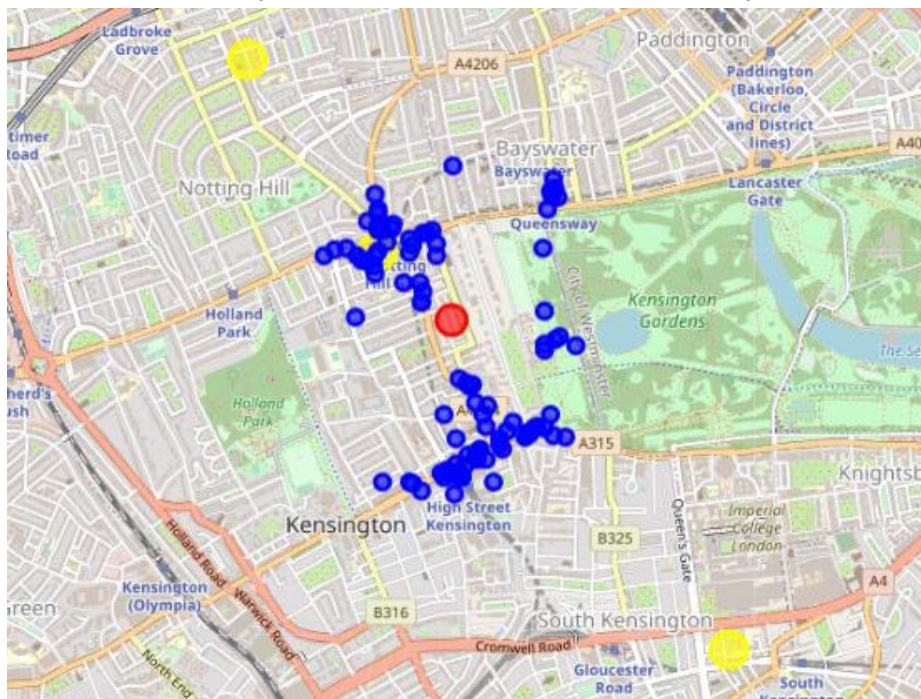
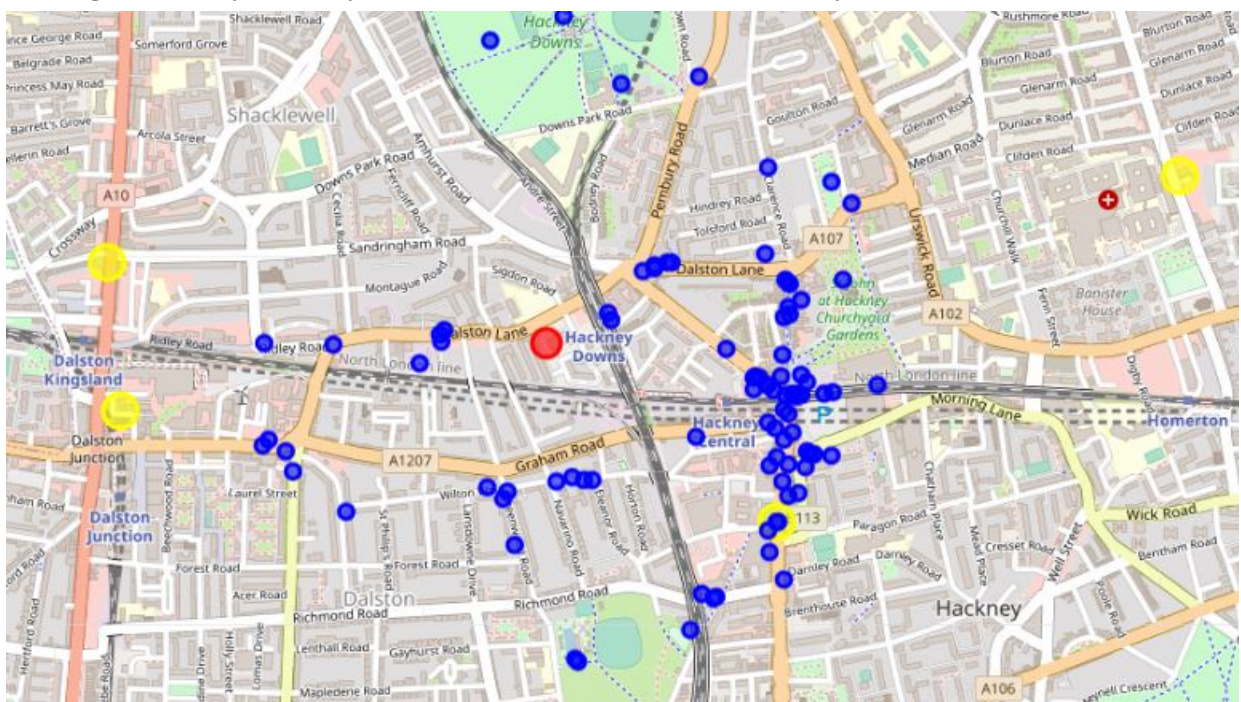


Fig. 7: Hackney: bird's eye view of the area around the cinemas (in yellow). The venues are in blue.



4. Results and discussion

From the previous steps, I gathered that the borough of Kensington and Chelsea and the borough of Hackney are best potential locations for the kind of film festival that the foundation is attempting to export. There is the possibility of looking into other boroughs, such as the City of Westminster, or the Borough of Richmond upon Thames, but I have reviewed the drawbacks connected with those choices. There is also –and always – the possibility of involving two or more boroughs into the project by choosing cinemas across ‘borders’: a possibility that I have discarded, because I think that it complicates matters unnecessarily. From my point of view, and from the point of view of my research, Hackney and Kensington look like feasible and attractive choices, and I think that I have provided enough evidence to support them. As I have shown, all the cinemas in both areas enjoy a great reputation, while the neighbourhoods are lively and packed with places to stay, places to eat, and things to do.

It is always a good idea to have more options to choose from, as in this case. However, if I may dare a further recommendation, I would suggest the borough of Hackney as a first choice. While the borough of Kensington and Chelsea enjoys a solid reputation and some of its landmarks, such as Portobello Road, where one of the cinemas is situated, even hold a sentimental value for Londoners and tourists, Hackney, like of most of East London, has become in recent years the ‘it’ place to be and is now considered one of the trendiest places in London. I believe that this shows in the venue frequency bar charts I presented a moment ago, where Hackney clearly demonstrated a stronger inclination for the hospitality business (except for hotels, where the two boroughs nearly tie). The greater variety of Hackney’s offer in terms of food, drinks and entertainment over Kensington’s is one reason why I sponsor Hackney, but it is not the main one. I think that the main reason for choosing Hackney lies in the Folium maps above: that is, in the spatial distribution of the cinemas. While the cinemas in Kensington are distributed along a straight line, making it rather tedious for the guests to go back and forth as they switch film programmes during the day, Hackney’s cinemas draw a trapezoid on the map, with two corners in trendy Dalston, two corners in Hackney Central and, in the middle, the heart of the district. As I see it, they form an enclosed, exclusive space dedicated to the festival and its guests, where they can move around freely, choose from the many venues available, get to know the neighbourhood as they switch cinemas during the day and feel as if there were at centre of something. The same feeling one gets when walking around in an Italian piazza.

5. Conclusion

This report was an effort to show that London can provide the right setting for the kind of event that the foundation wishes to export. Based on the notion that the festival should be organized within a single London borough, because I think that having a single

interlocutor would simplify the process, I created a data frame in which the cinemas of London were grouped according to their borough; then, I transformed the boroughs into clusters to examine each area's cinemas in more detail. The clustering process revealed that only two boroughs fit the basic requirements initially stated in the business problem of having three, possibly independent, cinemas within their borders: the borough of Kensington and Chelsea and the borough of Hackney.

After identifying these two potential candidates, I thought it a good idea to examine the cinemas in each borough in terms of average ratings and user's tips, so that I could get a taste of their reputation. The enquiry revealed that all the cinemas possess a great deal of potential, so I was confident enough to move on to examining the neighbourhoods. I had to make sure that the two boroughs also fit the third requirement stated in the business problem: that is, that they can provide enough entertainment, food and accommodation to satisfy the festival guests. To this purpose, I queried the Foursquare database to obtain a list of the venues situated in the vicinities of the cinemas in both areas. I divided the venues into categories, I ordered the categories by frequency and I visualized the results on a bar chart, to find that both boroughs fully satisfy the requirement. The offer is rich and diverse in both areas, with the difference that Kensington is a little more biased towards daytime activities, with little to offer in terms of nightlife, while Hackney's offer covers the whole spectrum. For this reason, as well as for the spatial distribution of the cinemas in the area, which I consider to be more guest-oriented, I suggested that Hackney should be the foundation's first choice of location.

6. Further Recommendations

I trust that the research provides some useful insights on which the foundation can build further analyses, but there is more work to be done on a number of fronts.

The cinemas certainly need to be explored further, for instance in terms of number of screens, seats, projection equipment and availability. Perhaps, even the relationship between the cinemas' managements should be investigated, on the side, to see if they are on good terms and willing to be part of the same event. The cinema exhibition world is highly competitive, especially for independent businesses, and it is not unusual for rivalries to surface among neighbouring cinemas. In any case, this is not an unwinnable challenge: in its hometown in Italy, the festival programmes are shown across three different cinemas with three different owners who are usually rivals, but gladly cooperate for this one good cause.

I also think that an in-depth research on the local bureaucracy (I am thinking, for instance, of insurance, copyright and film censorship regulations in the UK, which certainly differ from their Italian counterparts) should be carried out in order to be able to assure the

London cinemas that they will be relieved of the extra-work that the organization of a festival naturally implies.

Furthermore, the neighbourhoods should definitely be explored further, as it would be a good idea to look for partners in hotel, restaurant and shop managers who may be interested in sponsoring the festival or may be willing to offer deals and discounts to the festival guests.

Lastly, I suggest that the foundation view the borough's council as a partner to involve right from the start in the festival's planning and decision process, and that they take into account their needs and expectations: this way, the council will see the mutual advantages involved in the cooperation and become a useful ally for the foundation as it ventures into unknown territory. I purposely kept this suggestion for last, because I consider it to be the most important of all, and perhaps the first that the foundation should implement.