

# From the US to a UK Bakery

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## **Introduction/Business Problem**

The client is a small business owner of a bakery in the US and will be moving to the UK in a few months. They would like to find the best place in the UK to move to and figure out if their small business has a good chance of success in that area.

According to the Office of National Statistics as listed on Visit Britain's website [\[1\]](#), the top 10 tourist visited cities in the UK are London, Edinburgh, Manchester, Birmingham, Glasgow, Liverpool, Bristol, Cambridge, Oxford and Brighton & Hove. The client has asked us to look at these 10 cities in the UK and identify which top 3 cities has the best survival rate of a business, popular venues nearby and a low number of competitors.

## **The Data**

### **1. Overview and Source**

For this case, we have extracted the most recent data from the Office of National Statistics (ONS) around business demography as at 2017 [\[2\]](#). This will allow us to see the number of births of business enterprises, deaths of business enterprises and active business enterprises in the UK in 2017.

We will use this to analyse the survival rate of business enterprises in our top 10 cities and then move on to using the Foursquare data concerning location, venues and ratings. We will come up with a list of the 3 best cities that best matches the criteria set out by our client.

### **2. Cleaning and Structuring**

After downloading the dataset, we were able to extract the columns of data for all authorities within the UK for the number of births, deaths and active business enterprises in the UK for 2017. It also showed the survival percentage for business in 2017 for each area which is the main column we are interested in. The data downloaded was not in the easiest formatting to allow for an upload into IBM Watson Studio so some cleansing was first required.

Empty cells needed removing and the data for births, deaths and active business were on separate tabs so this needed to be combined into one table. The data also showed figures for multiple years but we are only focused on the data for 2017 so the rest could be ignored. The data was extracted from tabs 1.1b, 2.1b, 3.1b and 4.1b.

This cleaning and restructure allowed us to have a clean and easy-to-use dataset which is shown as follows:

Fig. 1: The original dataset

**BUSINESS DEMOGRAPHY - 2017**  
Enterprise Births, Deaths and Survivals

**Notes:** **Active**  
The starting point for demography is the concept of a population of active businesses in a reference year (t). These are defined as businesses that had either turnover or employment at any time during the reference period. Births and deaths are then identified by comparing active populations for different years.

**Employer Active**  
The population of active employer enterprises (those with at least one employee) are defined as a subset of the all active enterprises where the employee count is one or more.

**Births**  
A birth is identified as a business that was present in year t, but did not exist in year t-1 or t-2. Births are identified by making comparison of annual active population files and identifying those present in the latest file, but not the two previous ones.

**Employer Births**  
Employer births are those enterprises which meet one of two conditions:  
1. An enterprise birth that was present in year t, but did not exist in year t-1 or t-2 and has at least one employee in year t, or  
2. An active enterprise in year t that existed in t-1 or t-2, was not an employer in t-1 or t-2 and had at least one employee in year t (entry by growth).  
As for enterprise births, employer births are identified by making comparison of the annual employer active population files.

**Deaths**  
A death is defined as a business that was on the active file in year t, but was no longer present in the active file in t+1 and t+2. In order to provide an early estimate of deaths, an adjustment has been made to the latest two years deaths to allow for reactivations. These figures are provisional and subject to revision.

**Employer Deaths**  
Employer deaths are those enterprises which meet one of two conditions:  
1. An enterprise death in year t that had at least one employee in the year of death, or  
2. An active enterprise in year t that had at least one employee, continued activity in year t+1 and t+2 but was not an employer (0 employees) in t+1 or t+2 (exit by decline).

**Survival**  
A business is deemed to have survived if having been a birth in year t or having survived to year t; it is active in terms of employment and/or turnover in any part of t+1.

**Disclosure Control**  
The confidentiality of all data held on the IDBR is protected by the National Statistics Code of Practice and associated Protocols and by specific legislation. The disclosure of data relating to individual undertakings without consent is prohibited under the Statistics of Trade Act 1947, the Value Added Tax Act 1994 and the Finance Act 1989. In accordance with these requirements, data presented in this release have been rounded to prevent disclosure. Differences may exist in totals across tables due to disclosure methods used.

Classification: Notes, Contents, Table 1.1a, Table 1.1b, Table 1.2, Table 2.1a, Table 2.1b

Fig. 2: Cleaned and restructured dataset

A	B	C	D	E
Authority	Actives 2017	Births 2017	Deaths 2017	Survial Rate
United Kingd	2925600	381885	356815	12.2
Durham	13870	1610	1510	10.89
Darlington	3490	440	450	12.89
Hartlepool	2695	320	375	13.91
Middlesbrou	3670	515	490	13.35
Northumberl	10405	1045	1055	10.14
Redcar and C	3415	410	395	11.57
Stockton on	6270	730	835	13.32
Tyne and We	31765	4475	3965	12.48
Gateshead	6210	1035	745	12
Newcastle up	9365	1280	1225	13.08
North Tynesi	5765	720	650	11.27
South Tynesi	3950	580	550	13.92
Sunderland	6475	860	795	12.28
Blackburn wi	5585	870	555	9.94
Blackpool	4345	680	610	14.04
Cheshire Eas	22630	4350	2575	11.38
Cheshire We	14845	1705	1650	11.11
Halton	4065	520	535	13.16
Warrington	11245	1060	1425	12.67
Cumbria	20350	1830	2070	10.17
Allerdale	3715	335	400	10.77
Barrow in Fu	2090	225	250	11.96

## Methodology and Results

In Python, we imported the csv file of the data retrieved from the ONS that showed the survival rates of businesses in UK cities. After importing the Survival Rate table for locations in the UK, the top 5 areas out of the 10 areas with the most tourist foot traffic were the following:

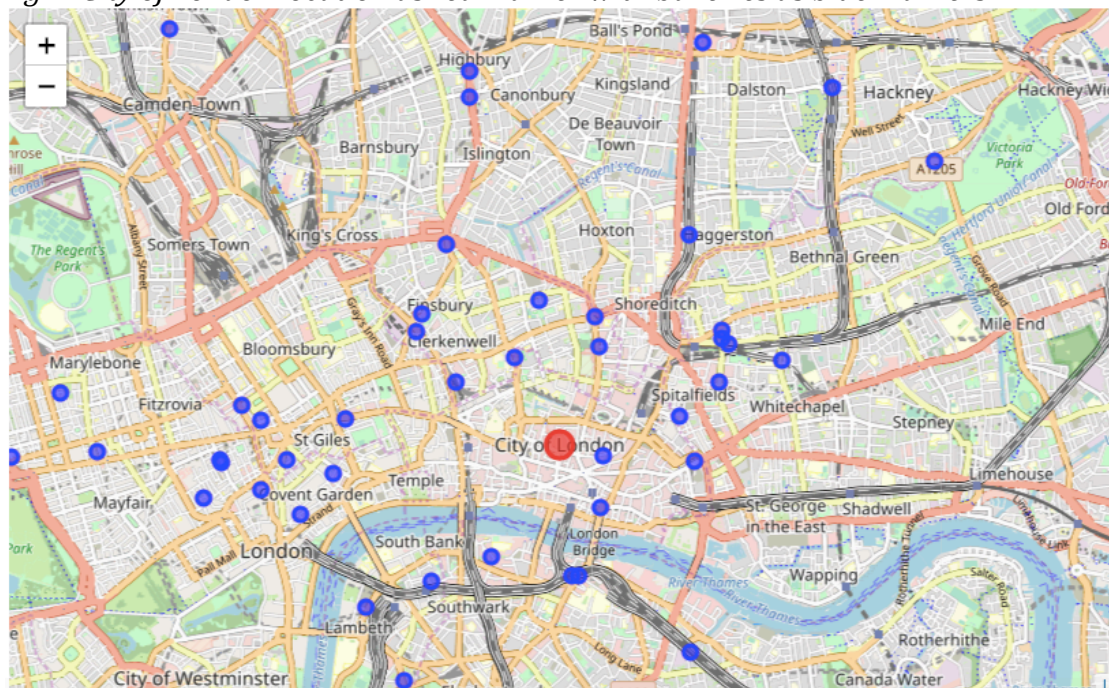
Authority	Survival Rate
City of London	22.42%
Birmingham	15.49%
Inner London	14.89%
Liverpool	13.60%
Glasgow City	13.44%

As the list above included two different London areas, we made the executive decision to look at the best rate for London, which was the City of London and then look at how it compared to the other 3 best areas. For the next part, making use of FourSquare data, we looked at the various areas and any ratings of specific areas that were relevant.

### City of London

For City of London, we looked at the clusters of bakeries in a 5000m radius, which is shown in Figure 3 below.

*Fig 3: City of London location as red marker with bakeries as blue markers*



We see that bakeries are mainly clustered around Covent Garden and Shoreditch and though this shows good areas for bakeries, there may be too many competitors for a new business. Hoxton, Bethnal Green and King's Cross seems to not be too clustered are near the other areas so we can look at what these areas have to offer.

#### Hoxton:

Main types of establishments in this area are bars, restaurants, hotels and a few others that include coffee shops and grocery stores. This doesn't seem to be the right kind of area for the bakery, which may be why there aren't any bakeries in this area.

#### Bethnal Green:

This area has a similar type of establishments as Hoxton, in that there are quite a few pubs/bars and restaurants. This area also has 1 other bakery called E5 Bakehouse. We can look into that bakery a bit more.

E5 Bakehouse – This bakery has a rating of 9.2/10 showing their popularity in this area. A quick Google search shows that they are well known for sourdough bread and Mediterranean lunches so in that respect, it differs from the style of bakery that the client is looking at opening.

#### King's Cross:

This area is slightly different as it has more coffee shops and hotels and theatres than those above. This makes sense, as it is a main train station area so there's higher foot traffic; which is always a plus for a new business. There are also 2 other bakeries in this area that we can look at:

Aux Pains de Papy – This bakery has a rating of 9.1/10. As the name suggests this bakery specialises in French patisseries so it is not in direct competition with the client.

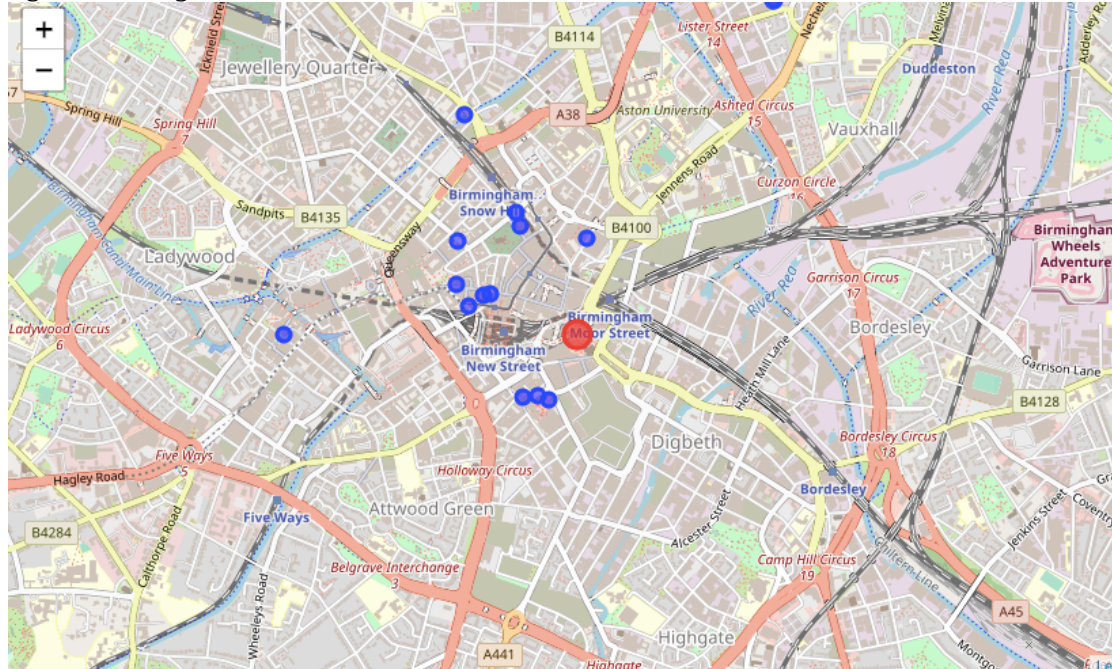
Fabrique – This bakery has a rating of 9.2/10. This also seems to be a French bakery and the fact that both this bakery and Aux Pains de Papy have both survived in proximity to each other shows the area is good for competitive businesses.



## Birmingham

For Birmingham, we looked at the clusters of bakeries in a 5000m radius, same as City of London and have shown the outcome in Figure 4 below.

*Fig 4: Birmingham location as red marker with bakeries as blue markers*



Areas that aren't too clustered would be Ladywood, Bordesley and Aston University. However, the level of foot traffic in these areas could be questionable.

Ladywood is close to one bakery but not in the dead centre of town so let's look at this area and Aston University is likely to have quite a crowd of people. However, the foot traffic at Aston University is likely to flux seasonally and also, it brings into question if that is the crowd our client is interested in.

Ladywood:

This area has quite a few pubs and restaurants with a few theatres and museums scattered around so it does look to be a good area that is lacking a bakery.

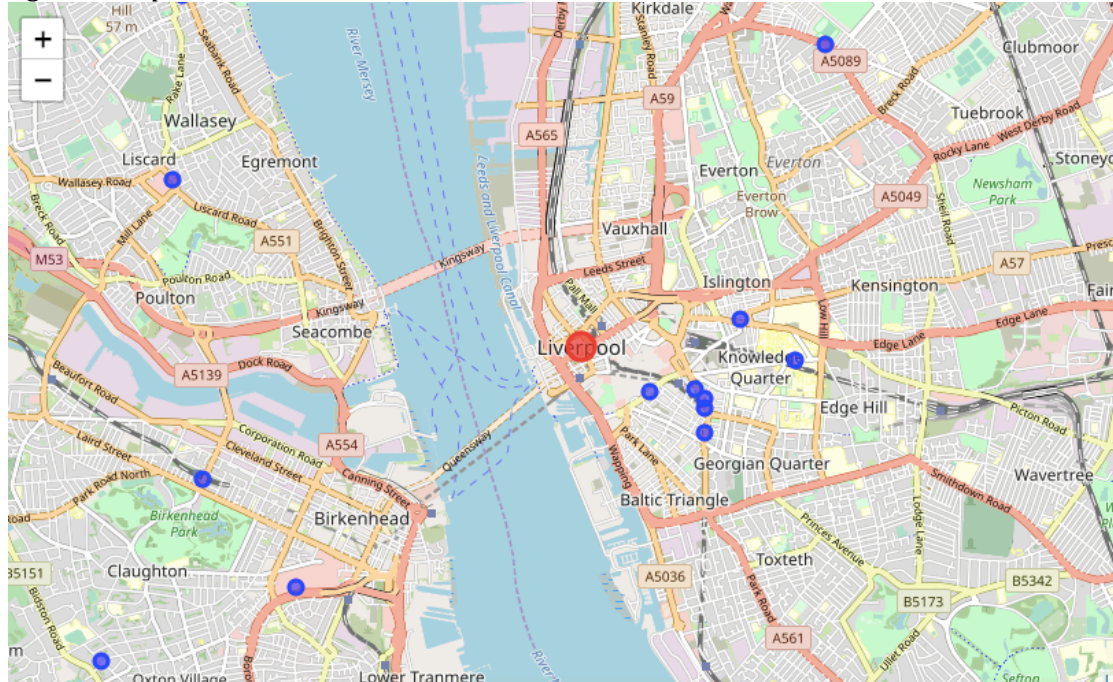
Aston University:

This area seems to have quite a lot of tourist attractions from mini-golf to gaming cafes to nature trails. This could be a winner in terms of a new location for the client to set up. The closest competition is the Krispy Kreme donut shop but it is unlikely to be a direct competitor when it comes to homemade baking.

## Liverpool

For Liverpool, continuing on the method of looking at clusters of bakeries in a 5000m radius, we show this finding in Figure 5 below.

*Fig 5: Liverpool location as red marker with bakeries as blue markers*

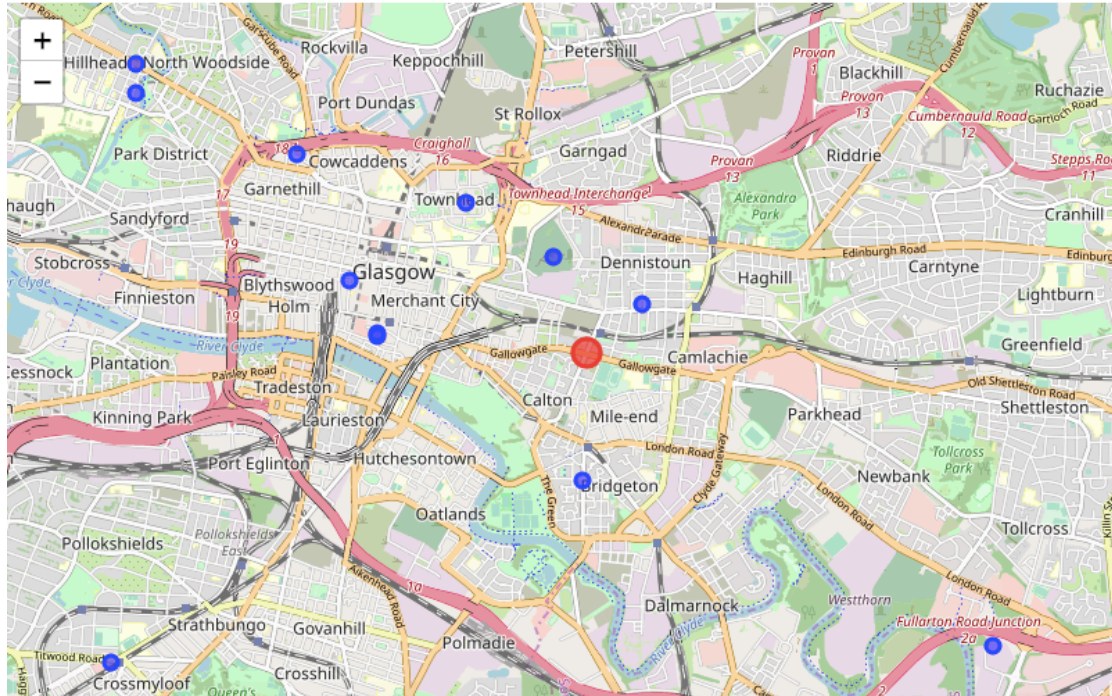


Islington seems the best area within Liverpool that isn't too clustered as is near enough to the nearest. Liverpool doesn't have a lot of bakeries, which could be taken as a positive or negative. There are however, loads of coffee shops in this area, which likely have baked goods but no specific bakeries.

## Glasgow City

Lastly, we look at the clusters of bakeries in a 5000m radius of Glasgow City. This is shown in Figure 6 below.

*Fig 6: Glasgow City location as red marker with bakeries as blue markers*



There seems to be more bakeries above the lake and looking at the topography of the area, they are quite spread apart. Let's look at the kind of establishments that are in Garnethill and Townhead as they are nearer the centre of town but don't really have many bakeries.

**Garnethill** – This area has mainly bars and restaurants with very few café's and coffee shops. Due to the dispersion of the bakeries shown in the image above, the lack of bakeries could be a benefit or a detriment for the client. However, it does not necessarily mean it would be a bad location to set up the shop.

**Townhead** – This area is full of mainly restaurants with a few bars and few coffee shops. Interestingly enough, there is a teashop that seems to have done well and survived so this could be an indicator that different types of business can work well and survive.



## **Discussion**

So for City of London, the best area within this location would most likely be King's Cross. However, the client would need to consider the fact that London is one of the most expensive places to live in the UK and though it would be good for business, living conditions is something that will need to be budgeted for heavily.

For Birmingham, near Aston University would be very good for the client as the area has a lot of tourist attractions and though it is near a university, it could really good for business. The client would have to be aware of seasons when students aren't around as much like the summer and over Christmas breaks etc.

Liverpool doesn't look like the best option as mostly coffee shops so it is likely that other bakeries tried to work in this area but died out given the survival rate for new businesses is 13.6%.

Glasgow has a very disparate amount of bakeries like Liverpool but there seems to be a more diverse mix of the type of businesses in the area, which could point to being a good sign for a new business. Though the survival rate is lower than Liverpool, it is not by that much at all (0.16%).

## **Conclusion**

In conclusion, the top 3 areas that we would recommend to the client to move would be City of London, Birmingham or Glasgow City.

## **Appendix**

*Source of the data and further links.*

[1] - <https://www.visitbritain.org/town-data>

[2] - <https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable>