OPENING A VEGAN RESTAURANT IN LONDON

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A data analysis approach to select the best districts in London where to open a plant-based eating out option

1. Introduction

Healthy food has become a trending topic in the past few years. People are paying more attention to what they eat, and how they eat. Several consumers are changing their habits from animal derived goods to plant-based goods, and the interest has increased significantly in the United Kingdom.

The Vegan Society [1] has a collection of statistics with its sources that can present the growing potential of this market. Some interesting observations are extracted and presented here:

- The UK's purchase and consumption rates of vegan: milk, meat, butter/margarine, cheese, ready meals/food to go and seafood are the highest in Europe. [2]
- In 2018, the UK launched more vegan products than any nation. [3]
- Between November 2019 and November 2020, vegan food orders via Deliveroo shot up 115%. [4]
- Demand for meat-free food in the UK increased by 987% in 2017 and going vegan was predicted to be the biggest food trend in 2018. [5]
- The Google Trends [6] on veganism puts the UK as the fourth region with more interest in the subject, and shows the increase in search of veganism consistently rising since 2013.

Considering these findings, a new business dedicated to vegan products seems a promising idea. There is possibility for profit together with a social and environmental impact on the society, values that are becoming more and more important for customers when deciding over what they are consuming. Also, there is still low competition in the segment, which buys time for the businees to stablish itself as pioneer and retain loyal customers.

This study will evaluate where to open a new vegan restaurant in London, capital of England and the UK. The goal is to retrieve where there is a lack of options of vegan/vegetarian restaurants, but also have available clientele (for example, regions with lots of restaurants or bars guarantee exposition).

Hopefully this report will not only reach people who intend to open a new profitable, sustainable and environmental-friendly business, but also share some light on the importance of evaluating our eating habits and at least reduce the consumption of animal derived products.

2. Data Acquisition and Preliminary Analysis

2.1. Supporting Business Decision

From finder.com [7] we can retrieve some tables with important information on the growing of vegan market. This is a huge support on affirming that a growing market is available for the proposed business.

Table 1: The UK's Current Diet

Diet	Percent
Total vegetarian	6.55%
Total pescatarian	4.10%
Total vegan	2.10%
Total meat free	12.75%
Not following any diet	87.25%

Table 2: The UK's diet intentions by the end of 2020

Diet	Percent
Total vegetarian	11.35%
Total pescatarian	7.35%
Total vegan	4.15%
Total meat free	22.85%
Not following any diet	77.15%

Table 3: Specific diet changes over 2020

Type of diet	Current population	People who intend to follow this diet	Population by end of 2020	% change
No-specific diet	45,721,918	-5,292,738	40,429,180	-11.60%
Vegan	1,100,470	1,074,269	2,174,739	97.60%
Vegetarian	3,432,419	2,515,361	5,947,780	73.30%
Pescatarian	2,148,537	1,703,109	3,851,646	79.30%

Table 4: Which generations are ditching meat?

Generation	Percent ditching meat
Postmillennial	13.89%
Millennials	14.74%
Generation X	13.79%
Boomers	10.57%
Silent generation	8.86%

Table 5: Are there gender differences when it comes to diets?

Intention	Female	Male
Planning to go meat free	8.84%	11.44%
Already meat free	14.57%	10.82%

Table 6: Yearly cost of each diet per person

Diet	Cost per year
Vegan Diet	£ 2,073
Normal Balanced Diet	£ 2,002
Pescatarian Diet	£ 1,973
Vegetarian Diet	£ 1,545

The above data shows that an increasing number of the UK population is changing their diet to a more plant-based one, and that new generations tend to be more adherent to this lifestyle. Also, the last table breaks the concept that going vegan is more expensive, which can be used to induce more people to try it.

The important thing as a business owner is to offer plenty of options so the transition to a vegan or vegetarian diet is not difficult for the people wanting to pursue that.

2.2. Selecting and Cleaning Data

Using the Foursquare API and a geolocation service to retrieve the coordinates of London, a search query will return the top vegetarian / vegan places around London, limited to 50 results (Foursquare standard).
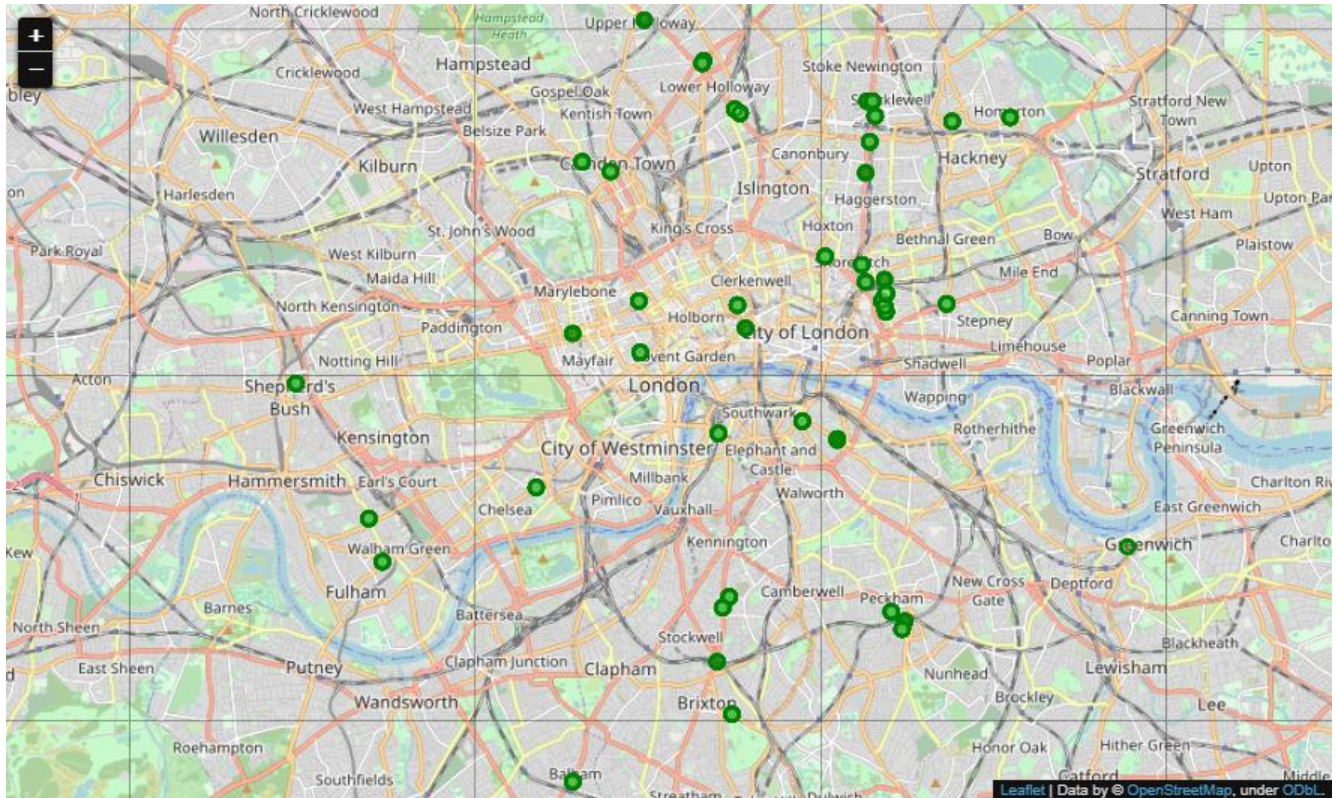
A map of the results is presented in Figure 1.

Figure 1 - Vegan Restaurants in London

We can see in Table 7 that, although related to vegan culture and products, some places really don't fall into our main category, Vegan / Vegetarian Restaurants. These values are returned by Foursquare API search because of the relation through the word "vegan". Considering this observation, it's fair to keep the food truck and food stand venues, since they offer the same as common restaurants.

Table 7: Venues that are not Vegetarian / Vegan Restaurants

Venue Name	Category	Venue Name	Category
Vegan Sweet Tooth	Food Truck	Vegan Jesus	Café
Vegan Crosstown Doughnuts	Donut Shop	Vegan Sweet Tooth London	Food Truck
Astro Vegan	Food Stand	Brixton Vegan Market	Farmers Market
London Vegetarian and Vegan School	School	Little Vegan Cookie Co.	Bakery
Vida Vegan Bakery	Bakery	Islington Vegan Market	Market
London Vegetarian and Vegan School	Building	Veg & Chick Express	Fried Chicken Joint
Vegan Tea Room	Tea Room	Holloway Road Organic And Vegan Shop	Organic Grocery

3. Methodology

In this section, we're going to make an exploratory analysis of the London districts, in order to find where can be the best place to open a vegetarian / vegan restaurant. We want to search all London districts, find the ones that have the highest number of venues (busy districts), and check if the district already have a vegetarian / vegan restaurant. If it is a busy district and doesn't have a plant-based option for eating out, this is a district that is worth investing in.

3.1. Retrieving Location of London Districts

From Wikipedia [8] we get a list of all the districts in the Greater London area, and having the names of the districts we are able to use a geolocation service to get latitude and longitude of each district. These values are necessary to conduct our exploratory analysis of the London districts in terms of venues.

After some adjustments and data cleaning to guarantee the results, we get to a data frame with 527 districts. The original table contains 532, so we had to lose 5 districts that were having trouble on retrieving coordinates. It still is a good pool of districts to evaluate.

3.2. Exploring Venues in London Districts

We use a function to create a new data frame with the districts names, locations, and the venues that are found in a radius of 500 meters from each district location. With this, we are able to get one of our first pool of results: which districts have more venues. These are presented in Table 8.

Table 8: London top 20 districts with more venues			
District	**# of Venues**	**District**	**# of Venues**
Coombe, Kingston upon Thames	100	South Kensington	100
St Giles	100	Kingston upon Thames	100
Canary Wharf	100	Nag's Head	100
Shepherd's Bush	100	Richmond	100
Soho	100	St James's	100
Aldwych	100	Chinatown	100
Shoreditch	100	Bayswater	100
Aldgate	100	Covent Garden	100
Brompton	100	Fitzrovia	96
Clerkenwell	100	Ealing	96

We can see that for at least 18 districts, the number of venues returned reached the limit of the Foursquare API, so we can expect much more venues in these districts.

3.3. Finding the Best Districts for Business

The next step was to find which districts already have a vegetarian / vegan restaurant. We don't want to open closer to them, since we want this type of places to thrive, so we'll try to stay away from them.
And from 522 initial districts, 488 doesn't have a vegetarian / vegan restaurant. That's a vast sea for business. But since we don't want to open a restaurant that is far from movement of people, let's check which of these 488 districts are intersecting with our list of top 20 districts with most venues. Table 9 brings the list of districts that fits our criteria.

Table 9: Districts to open a Vegetarian / Vegan Restaurant	
District	**# of Venues**
Aldwych	100
Brompton	100
Canary Wharf	100
Chinatown	100
Clerkenwell	100
Covent Garden	100
Ealing	100
Fitzrovia	100
Nag's Head	100
Richmond	100
Shepherd's Bush	100
Shoreditch	100
South Kensington	100
St. Giles	100
St James's	100

4. Results

From our initial 527 districts of London that were evaluated, we were able to retrieve 15 where one can find lots of venues (and lots of people), but do not have an option for plant-based food. They are represented as blue dots in Figure 2.

And just for better visualisation, let's plot these districts in a map to see where they are, together with the existing vegetarian / vegan restaurants.
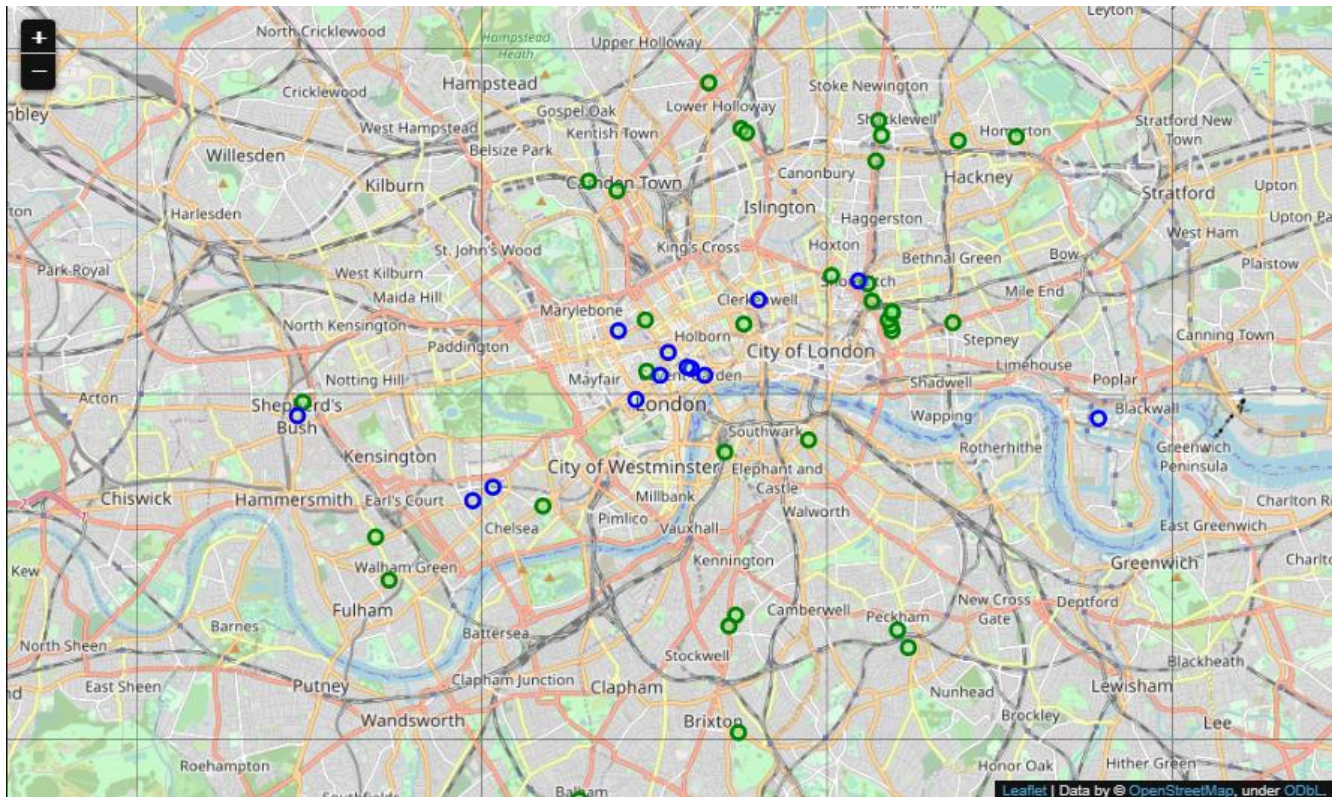

Figure 2 - Selected districts (blue) and Vegan Restaurants (green)

We can see that Covent Garden, Brompton and South Kensington for example are three of the districts that could be the first on the list to be explored. This opens the door to more detail investigation each of these districts considering several other things when deciding to open a restaurant (or any business), like rent, availability of property, safety, etc.

5. Conclusion

This simple analysis reveals the power of data analysis to help businesses achieve their goals. We started looking at the whole city of London, and finished looking to 14 districts that seem more promising, and even getting the first three on where to start using visualisation tools.

There is room for a more detailed analysis, which requires more work, and we can even get to the best streets where to open our restaurant. But I need to keep working, so this will be for another time.

6. References

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