

FINDING THE OPTIMAL LOCATION FOR A MEAT- FREE KEBAB SHOP IN BERLIN

Joshua
Stevenson-
Hoare

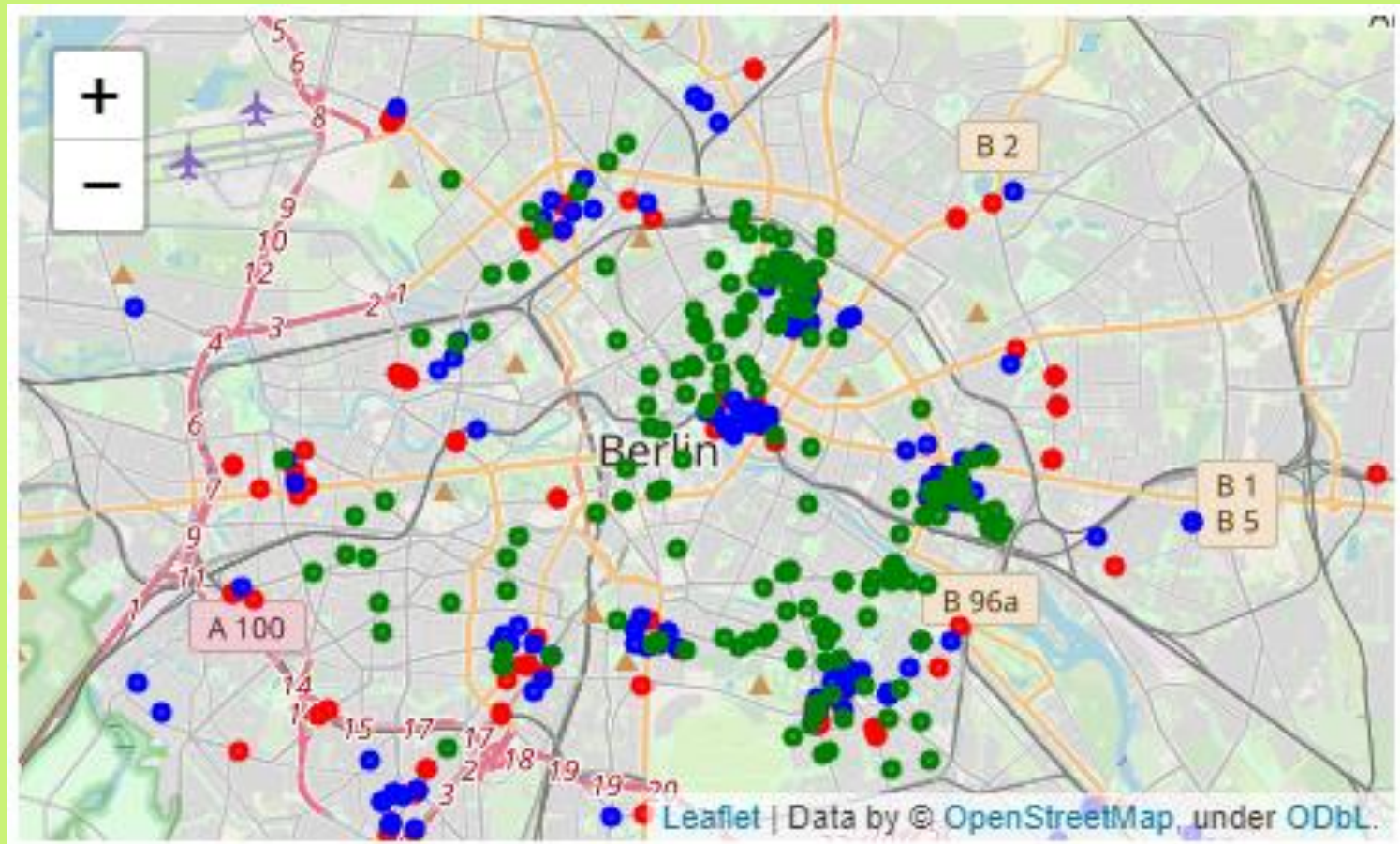
PLANT-BASED AND OPTIMAL LOCATION

- Getting the correct location to open up any business, especially a food service business, is vital for financial success and social popularity
- The meat-free and plant-based diet movement is a growing trend, with business exploring all venue types
- In Germany, in particular in Berlin, the Döner Kebab is a beloved national dish, but there have been few efforts to make plant-based fast food alternatives to this dish
- Most fast food kebab consumers are late night customers, making proximity to consumer-supplying venues (ie. bars) very important

DATA ACQUISITION AND WRANGLING

- Berlin regional data were acquired from a list of localities on Wikipedia, and collated with coordinate data from their respective pages
 - Some alterations were made to locality names to ensure the correct wikipedia page was accessed
- Bar and Kebab venue data was collected using the FourSquare API
- Vegan/Vegetarian venue data was collected via using of the HappyCow database
- Data were formed into a dataframe of all venues, their respective category, and the locality within which they reside.

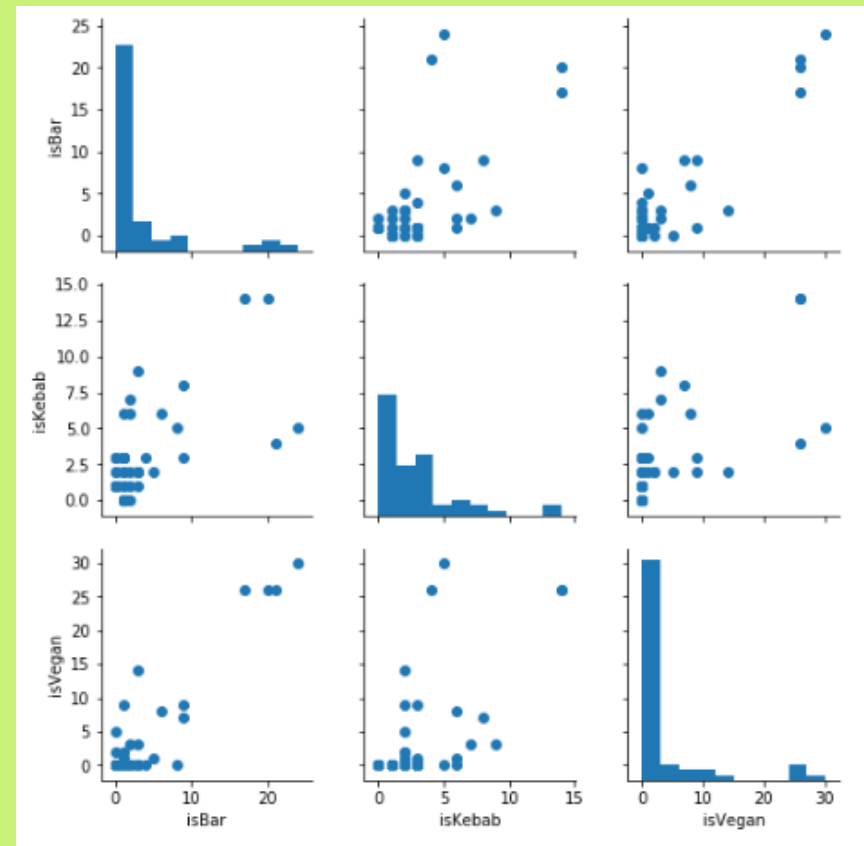
VISUALISATION OF VENUES



All venue locations overlaid on a map of Berlin. Blue dots are bar venues, red dots are kebab venues, and green dots are vegan/vegetarian venues.

CORRELATION OF VENUE CATEGORIES

- Correlations were performed between the number of each venue category within each locality
- All venues positively correlated with each other, which indicates venue density overall
- All correlations were statistically significant ($p < 0.001$)



CLUSTERING WITH K-MEANS

- K-Mean clustering was used to categories localities
- 3 clusters were generated
- Descriptions were based on mean num of each category

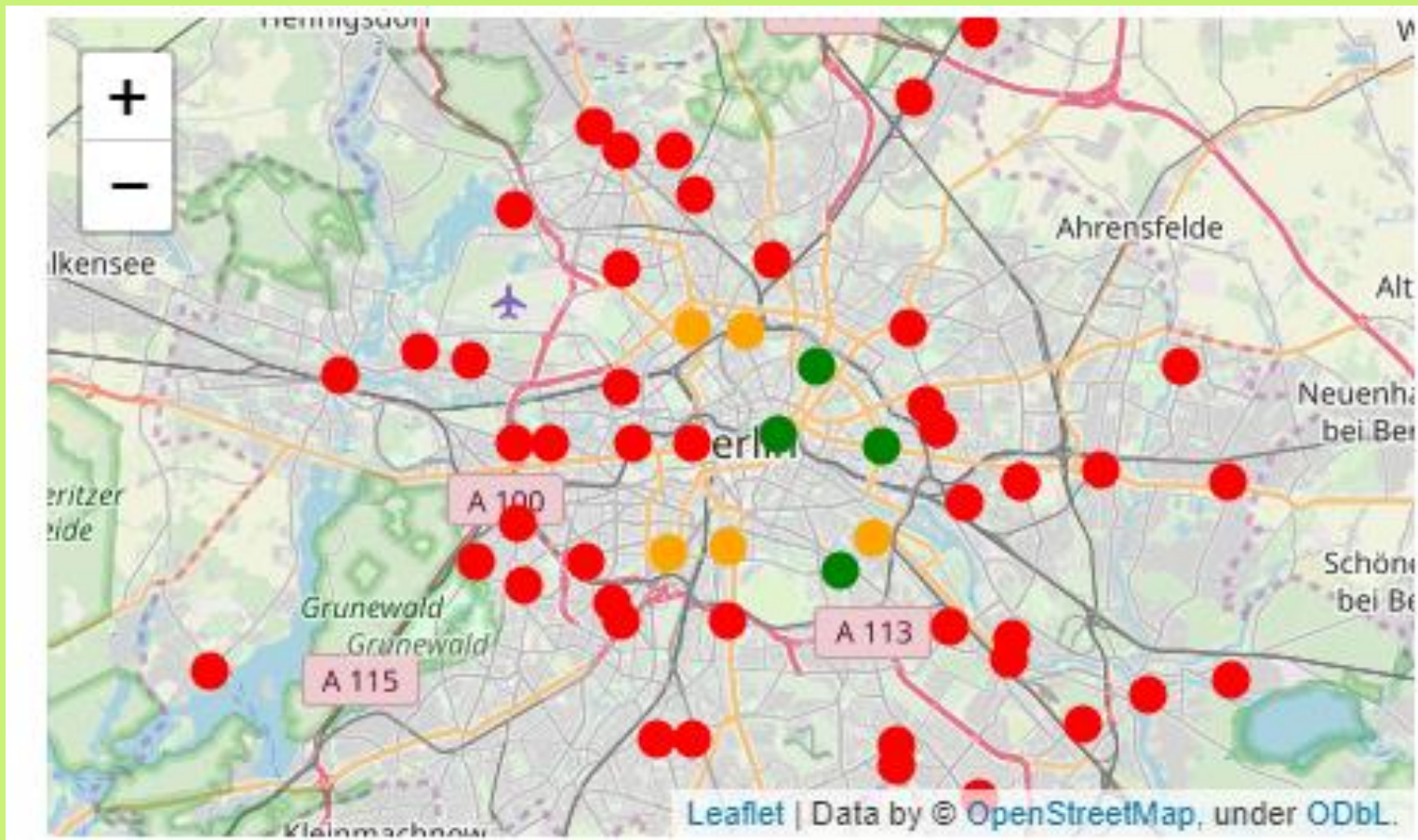
Cluster #	Mean # Bars	Mean # Kebabs	Mean # Vegan
0	1.2	2.0	0.4
1	20.5	9.3	27.0
2	5.6	4.2	9.4

0) Low number of all venues

1) Many bars and vegan, some kebabs

2) Moderate number of all venues

CLUSTER VISUALISATION



Clusters visualised on a map of Berlin. Red dots are cluster 0, green dots are cluster 1, and orange dots are cluster 2.

CONCLUSIONS

- The optimal locations to open a meat-free kebab shop in Berlin are these localities [cluster 1]
 - Prenzlauer Berg, Mitte, Friedrichshain, and Neukölln
- Localities in cluster 1 are optimal
 - High number of bars, providing a large potential customer base
 - High number of vegan venues, showing customer interest in plant-based alternatives
 - Moderate number of traditional kebab shops, indicating high footfall for the late-night fast food consumer
- The model /method used here could be applied to any city and/or popular dish, so is very useful for prospective business owners everywhere