IBM Data Science Capstone

Analysis of Indian Restaurants in and around Brick Lane, London

Introduction

- History of Brick Lane

  - NW of central London

  - Dates back >450 years

    - Jack the Ripper Murders
    - Truman Brewary

- Centre for authentic Indian Cuisine

- Close to hi-tech industry – Shoreditch

Target Audience

- Entrepreneurs interested in opening a new Indian restaurant close to Shoreditch

  - High Quality

  - Tap into affluent technology works

- Is Brick Lane a good location?

- Should other areas of London be considered?
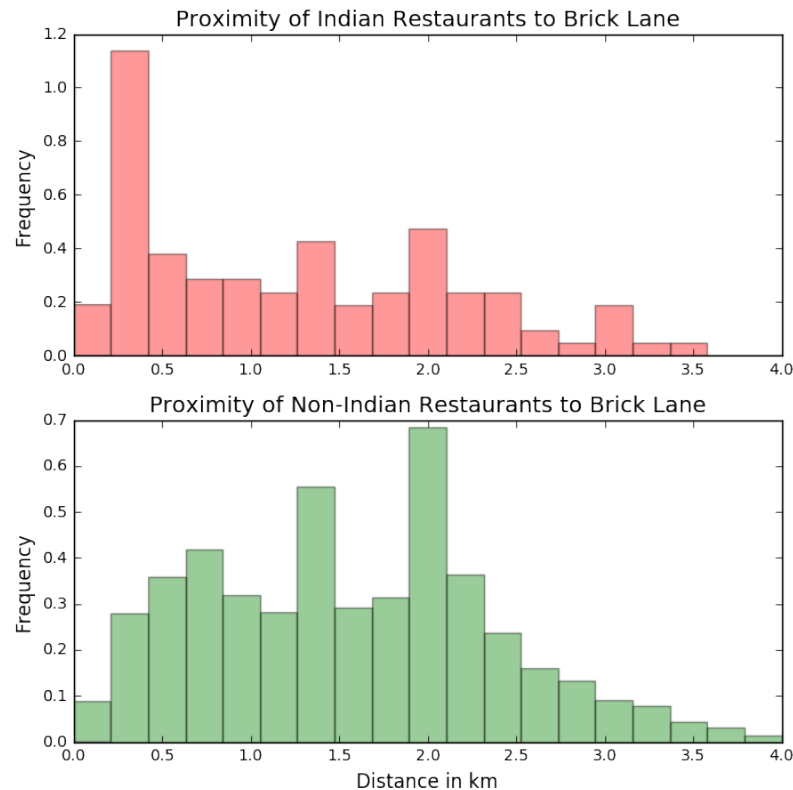
Data Collection and Cleaning

- Foursquare API used to investigate existing restaurants in this area and around Shoreditch

- Ratings

  - Limited access due to Foursquare API restriction of 50 premium queries per day
  - Results from multiple queries stored in a CSV file
  - Venues without ratings will be dropped

- Foursquare categorisation

  - Indian Restaurants
  - Other Restautants

Density Analysis

Histograms show density of Indian restaurants versus non-Indian restaurants in proximity to Brick Lane.
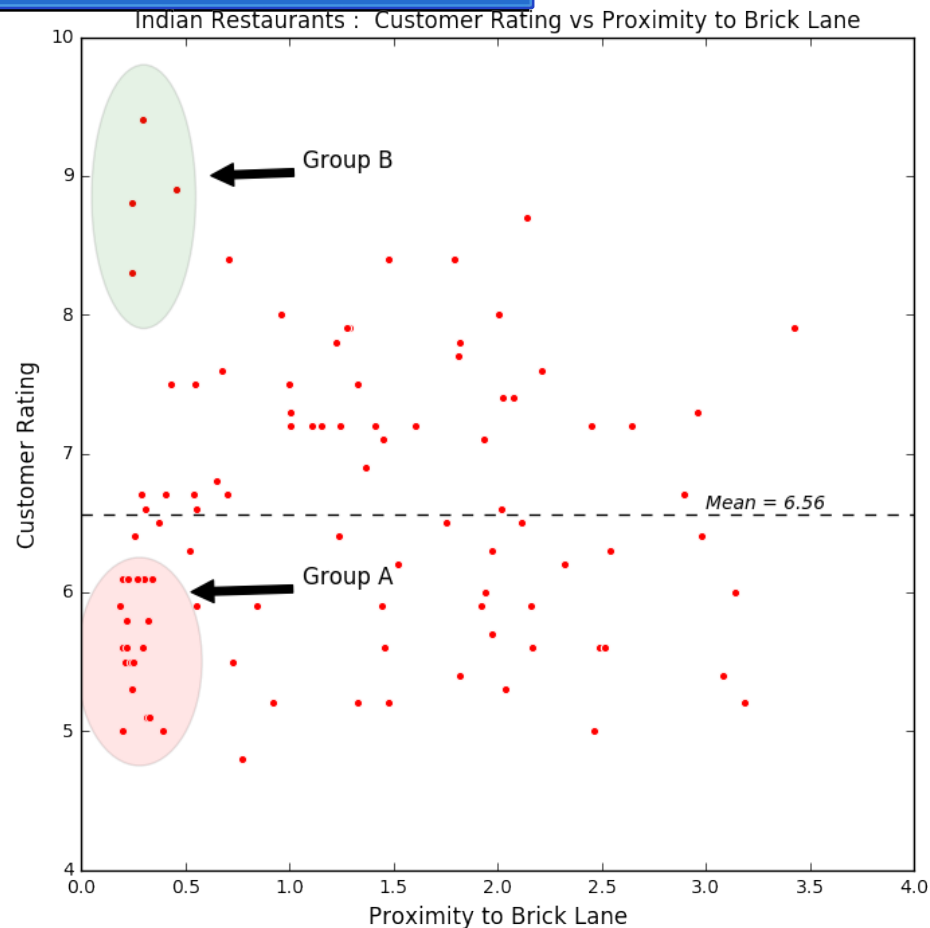
Clear peak in top histogram confirms Brick Lane is the centre of Indian Restaurants.

Histograms are normalized, showing density is comparative to all other restaurants combined in other areas of London.

Proximity of Indian Restaurants to Brick Lane

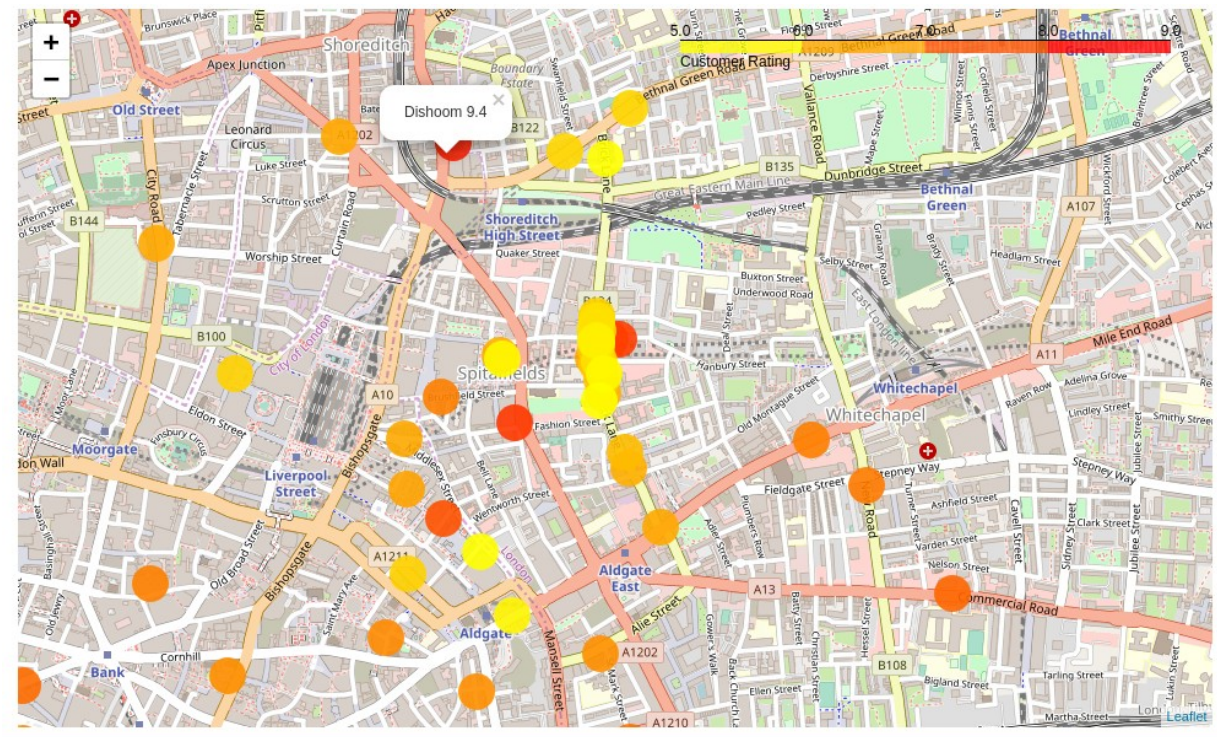Proximity of Non-Indian Restaurants to Brick Lane

Ratings vs Proximity

- Scatter plot shows no strong relationship between proximity to Brick Lane and customer rating.
  - Points left most are close to Brick Lane
- Grouping suggests some very highly rated restaurants near Brick Lane (Group B) as well as many scoring well below average(Group A)
- The higher scoring venues (Group B) are amongst the highest scoring in the dataset.

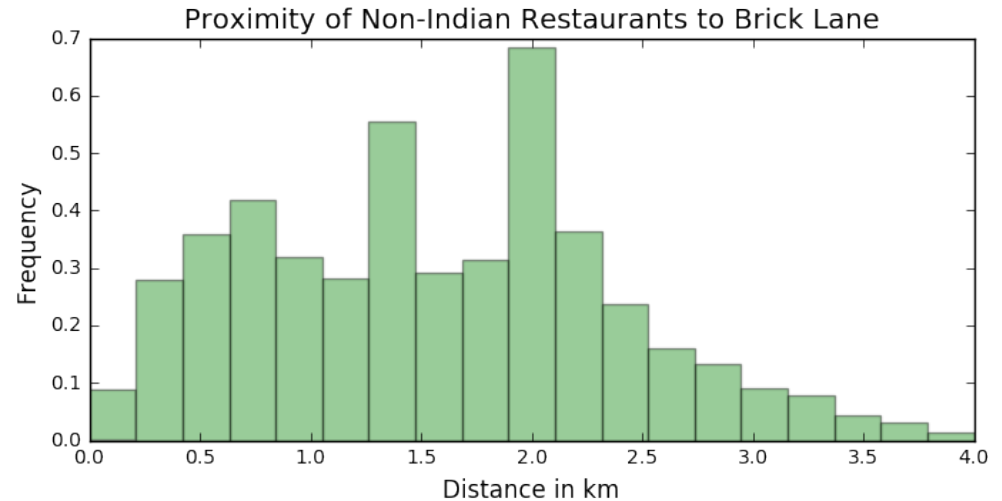Indian Restaurants : Customer Rating vs Proximity to Brick Lane

Ratings vs Proximity as Map

- Map centred on Brick Lane shows location of Indian Restaurants.

- Markers colour-coded by customer rating.

  - High count of yellow markers near centre

  - Red markers indicate higher rating are further out.
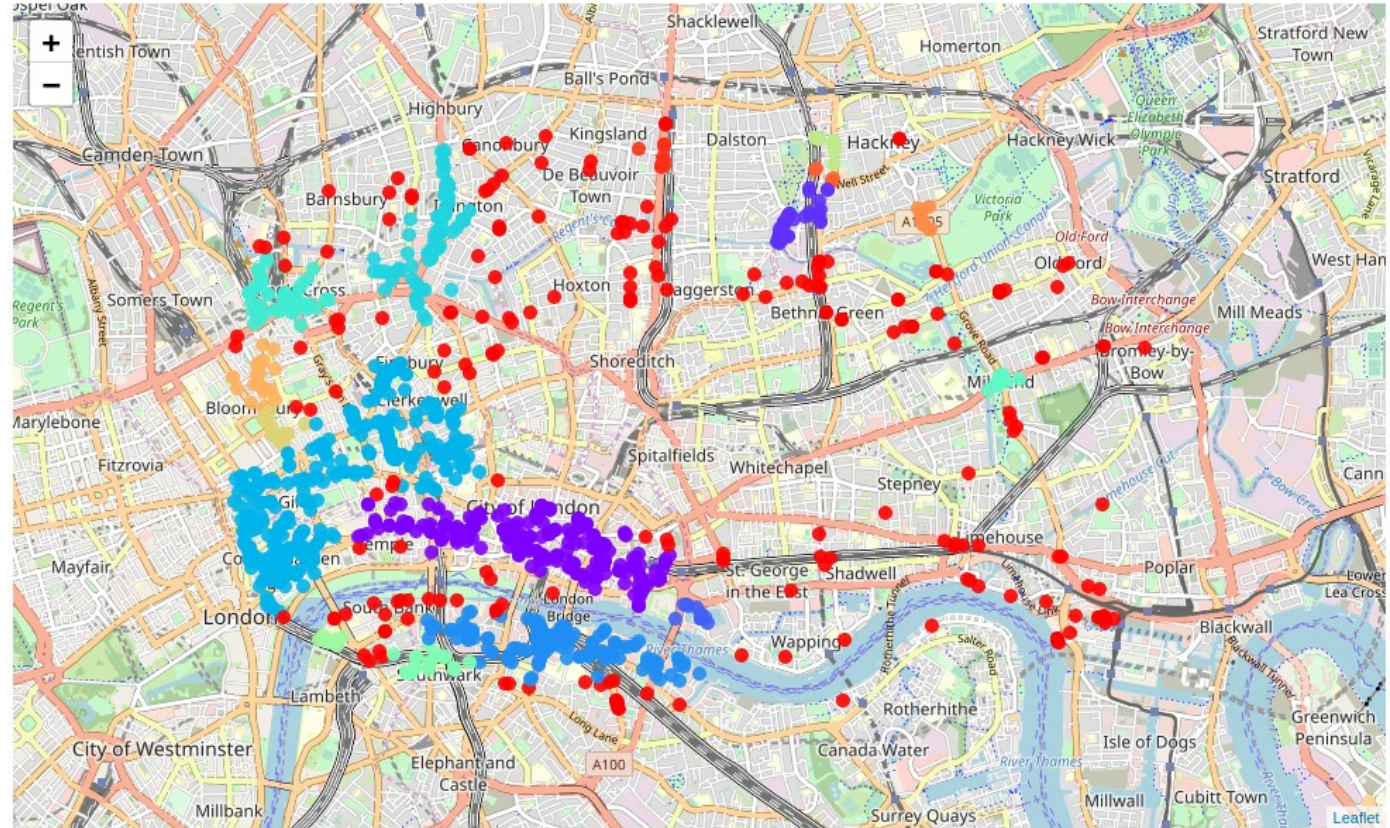
  - Example highlighted : Dishoom

Geographic Clustering of Non-Indian Restaurants

- Earlier histogram showing density of non-Indian restaurants suggested there may be other regions of London worth consideration.

  - Two or three clear peaks in the histogram

  - DBSCAN Clustering algorithm applied to dataset and plotted onto map (overleaf)

  - DBSCAN chosen as no knowledge of how many clusters there are, and able to deal with "noise", ie many venues not clustered

Proximity of Non-Indian Restaurants to Brick Lane

Geographic Clustering of Non-Indian Restaurants

- Parameter experimentation
  - Epsilon / radius
- Highlighted areas
- Theatre District
- Financial District
- South Bank
- Nr King's Cross Railway
-

Discussion of Results

- Geographic data confirms that there is a particularly high incidence of Indian Restaurants in the vicinity of Brick Lane.

- Other types of restaurant have been found to cluster in other regions of London.
  - Relative density of Indian restaurants in Brick Lane is very high

- No strong relationship between customer rating and proximity to Brick Lane was found
  - Many Brick Lane restaurants score well below the average rating

- However the highest rated Indian restaurants were in Brick Lane suggesting region can support high quality establishments

Conclusions

- Brick Lane is confirmed as a centre of Indian cuisine in London and therefore a good site for a potential new restaurant

  – Location should be towards the NW end, in the direction of Shoreditch.

- Brick Lane restaurants are not the highest rated but nevertheless this is a good location

  – Density will attract foot fall from Shoreditch and other regions

  – Highly rated restaurants do exist in this region although in a minority