

Applied Data Science Capstone Project

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Introduction

Success for any business is, performing proper ground work before start the business. Know the market (area) is a key for restaurant business, especially if we intend to open an ethnic restaurant in foreign country. By this project, identifying the best place to open an Indian Restaurant in London region.

Business Problem:

To identify the best area to open an Indian Restaurant in London region, based on analyzing Indian population and number of Indian restaurants already in that London region.

Target Audience:

Entrepreneur planning to open a restaurant

Stakeholders:

Entrepreneurs and Investors.

Data description

Data set detail and its source

Dataset1 from UK government:

UK ethnic group population ward and borough detail. (Link :

<https://data.london.gov.uk/download/ethnic-group-ward-2001/884e5228-107c-4d91-812b-ccd2ae778e31/ethnic-group-ward-2001.csv>)

Dataset 2 from FourSquare:

Indian restaurant detail from FourSquare location data API. This project will use this API to fetch data for a location based on Latitude, Longitude and search criteria “Indian Restaurant”.

Methodology

Exploratory Data Analysis:

Uk resident’s dataset contains ward wise data for various ethnic people. Based on exploratory data analysis, utilized only Indian data.

ward code	Borough	Ward	All people	White	Mixed	Asian	Black	Chinese/Other	White British	...	% Mixed Other Mixed	% Asian or Asian British Indian	% Asian or Asian British Pakistani	% Asian or Asian British Bangladeshi	% Asian or Asian British Other Asian	% Black or Black British Caribbean	% Black or Black British African	% Black or Black British Other Black	% Chinese or other ethnic group Chinese	% Chinese or other ethnic group Other Ethnic Group	
1AA	City of London	City of London	7177	6075	161	488	182		271	4909	...	0.8	2.2	0.3	3.8	0.4	0.7	1.6	0.2	2.0	1.7
BK1	Barking	Barking	10000	5500	300	2000	1400		3400	4700	...	0.8	0.8	1.5	1.7	0.1	0.3	0.3	0.7	1.4	

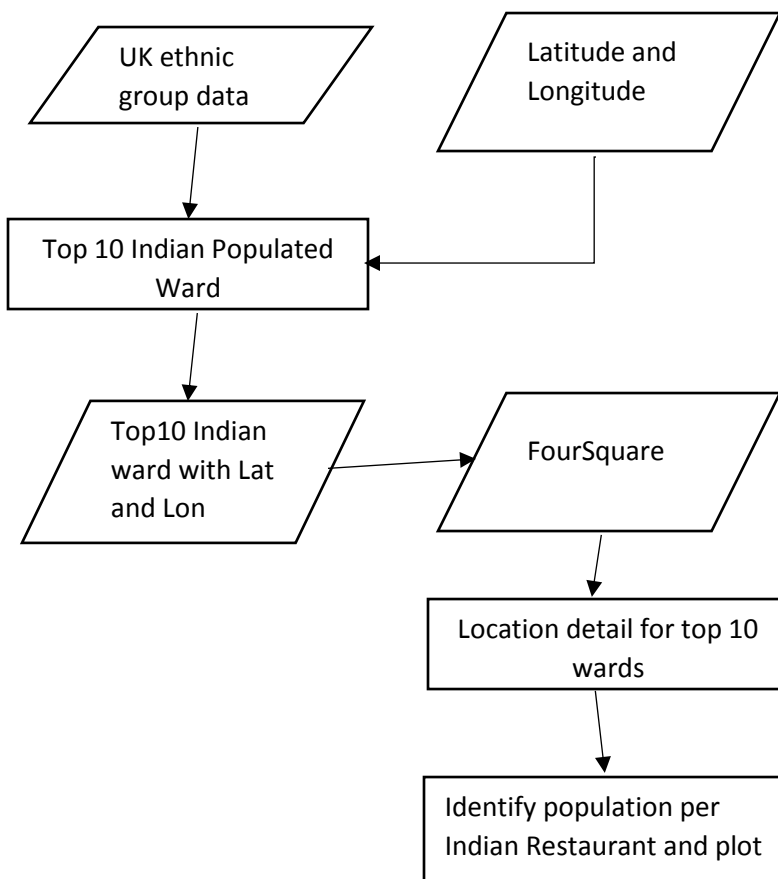
And FourSquare data results were analyzed to get only Indian Restaurant detail within 2500 sq. mtr. Average ward area was calculated based on 265 wards in London total 1594 sq. mtr.

FourSquare result will have all information related to Indian and other restaurant, like Indian consulate, Indian Yoga center, Chinese restaurants etc, because API is designed to split the search string “Indian Restaurant” like “Indian”, “Restaurant”, “Indian Restaurant” and “Indian Restaurants” and perform the search. So, analyzing the result and extract correct the information is vital to this project.

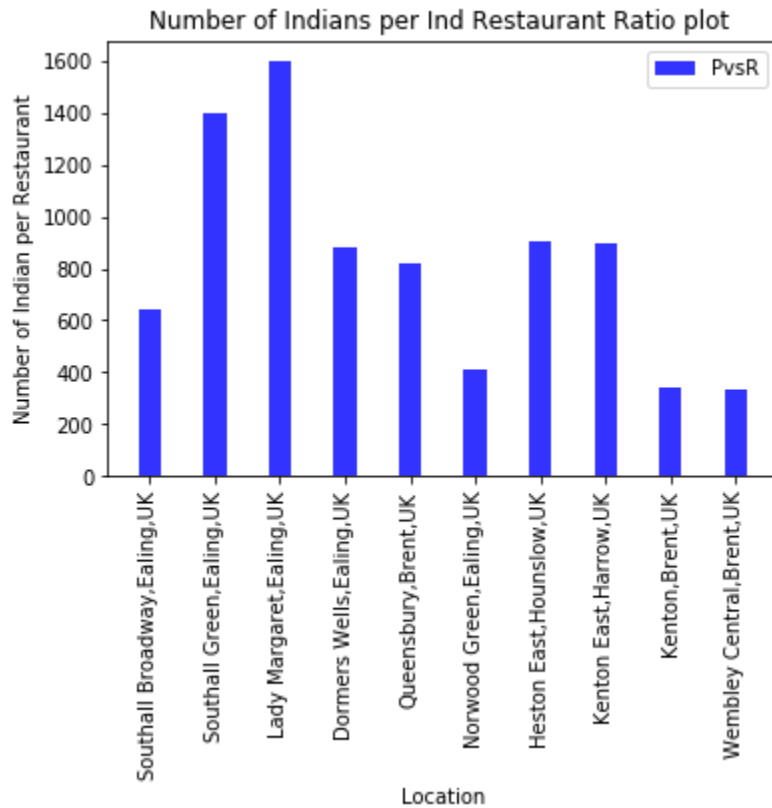
And search area is important to this analysis, to avoid overlapping of information which will mislead the results. So, utilized different data (ward area information from UK gov site) to calculate average ward area. Total 625 wards are in London (including inner and outer London region) with total 1594 sq. meter – which make search limit average to 2500 sq. meter.

Because of some generic location name used in both USA and UK, google API returned US coordinates, so concatenated the Ward, Borough and country to make unique location and fetched correct and accurate coordinates from google API.

Workflow:



Results:



Conclusion:

Based on results, Ward which has a greater number of people per restaurant is the ideal place to open a new restaurant. Recommend to open a restaurant in ward Lady Margaret, Ealing, London, UK.

Further to add, this project can be reused to perform for any other ethnic group and restaurant or any other ethnic dependent business or investments.