Business venture to maximize revenue

Abstract:

In an over-crowded city like Bengaluru in India, coming up with a food venture is like a double-edged sword. On one hand we see a high number of restaurants and eateries which would mean a high competition and on the other hand an increasing population in the IT capital of India would mean an opportunity to venture into a profitable business.

Introduction:

As one seeks to venture into a profitable food business, the success and failure of the venture would depend on the present competition in the area, type of the venue, footfall in the neighborhood. A person / client who would like to venture into a food business would like to know details which give them an upper hand before start of any business. Data Science with ML will help uncover / segment a city (like Bengaluru) to answer and identify areas which are similar in nature and the opportunity cost to venture into a specific type of food business is low and the returns are high.

Data Acquisition:

The data used will be obtained by scraping through a publicly available Wikipedia page which lists all the regions in a city of Bengaluru and neighborhoods within each region. Using geopy, co-ordinates of the neighborhoods would be identified. Neighborhoods whose co-ordinates are unidentified will be cleaned from the data. Moreover, there are cases when the co-ordinates differ from the actual co-ordinates due to multiple regions with the same name. Such neighborhoods are identified, and the co-ordinates are updated manually. This clean data will include details like **Neighborhood, Region, Latitude, Longitudes**.

This data will be used for further processing with Fairsquare API to identify the nearby venues in each of the neighborhood. The data will now contain details like **Neighborhood, Region, Latitude, Longitudes, <Venue categories>.** The data will be segmented / clustered, and the resulting data can be examined to identify similar areas and number of venues in each of these areas in a cluster. Top 3 venue categories in the areas within a cluster can be identified and the area which lacks such venue categories can be a right opportunity in terms of location / category to venture into.

A brief view of a clean data would be as follows:

	Neighbourhood	Region	latitude	longitude
0	Cantonment area	Central	13.0196	77.5096
1	Domlur	Central	12.9625	77.6382
2	Indiranagar	Central	12.9733	77.6405
3	Malleswaram	Central	13.0163	77.5587
4	Rajajinagar	Central	12.9882	77.5549

Post obtaining the data with the help of Foursquare API and merging with the initial data we should be able to identify the co-ordinates of the venue and the venue categories

	Neighbourhood	Region	latitude	longitude	venue_name	venue_longitude	venue_latitude	venue_category
0	Cantonment area	Central	13.019567	77.509589	Maruthi Theatre	13.018795	77.505283	Indie Movie Theater
1	Cantonment area	Central	13.019567	77.509589	bhat canteen	13.016796	77.504154	Fast Food Restaurant
2	Domlur	Central	12.962467	77.638196	Lavonne	12.963909	77.638579	Café
3	Domlur	Central	12.962467	77.638196	Barbeque Nation	12.962684	77.641599	BBQ Joint
4	Domlur	Central	12.962467	77.638196	Smoke House Deli	12.965584	77.641498	Deli / Bodega

More than 150 unique categories can be identified with the help of Fairquare API.