

Predicting a neighborhood to open a 'specialty' store

1. Introduction

Background

I am an Indian who has been living outside India for over 15 years. Over the years, I have found out that there is strong demand of Indian commodities specially spices. The market segment is comprised of both Indian diaspora as well as other nationals attracted to Indian cuisine.

There have been innumerable instances I have observed in an Indian restaurant where connoisseurs of Indian food have enquired with the staff about the recipe, ingredients and spices used. I have heard from many of my friends and work colleagues about experimenting with cooking Indian dishes at home specially the very famous ones like chicken curry, saag paneer, biryani etc. A very important common ingredient in all the Indian cooking which gives it the unique flavor is the variety of spices. It is not very easy to source these spices outside India.

This led to an idea of opening up a store in Toronto which would specialize in stocking Indian spices besides other commodities and artifacts (mainly Indian theme). A very important decision here is to choose the location of the store where the footfall of the potential buyers will be high. One way of deciding that is a neighborhood where there is a high proportion of Indian restaurants. The people who come to eat in these restaurants are likely to be Indian food lovers of all nationalities and many of them may be interested in sourcing the Indian spices and additionally other Indian items.

After narrowing down on the neighborhood, one can plan to advertise in all the Indian restaurants of the area. This may serve a dual purpose (1) Store can be the bulk supplier to these restaurants itself at a wholesale price (2) These restaurants can be a good point of reference to the people who dine and visit there and the store can cater to need for Indian commodities. For the Indian origin clients, the store can also be the outlet for their regular grocery (and spices) shopping with the store's loyalty card.

Who would be interested in the project

An entrepreneur who wants to open a speciality store with an ethnical touch can re-use this project. This can be easily extended to Japanese store, Chinese store, Korean store, German store etc based on the same concept.

With cross border migration and international immigrant population in many countries, the demand for 'home' products in a foreign land is ever increasing and this project can be an enabler to that demand.

2. Description of the data and how it will be used to solve the problem

The main data I would be using is neighbourhood, postal codes & geographical co-ordinates of a sample of Toronto neighborhoods. Methodology used for using the data is explained in the next section of the report.

The main decision required here is to identify the neighbourhood of the store where the footfall of the potential buyers will be high. My main criteria for that is a location where there is a high proportion of Indian restaurants. The people who come to eat in these restaurants are likely to be Indian food lovers of all nationalities and many of them may be interested in sourcing the Indian spices and additionally other Indian items. If I have my store too far from the neighborhood which has high density of Indian restaurants, the visitors to the Indian restaurants might not bother to travel far if they are interested to get the Indian spices and other stuff; hence it is important for my store to be in the same neighborhood.

3. Methodology and exploratory data analysis

Decision on neighborhood will be based on the criteria where there are high proportion of Indian restaurants. The methodology using sample data is as follows:

- (1) List of sample postal codes of Toronto available in Wikipedia
 - https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M_.
 Since the data available on this wiki page was a table, I scraped the data using BeautifulSoup and performed cleanup operations to transform into a useable dataframe.
- (2) Once I had the postal codes of each neighborhood along with the name in python dataframes, I needed the latitude and the longitude coordinates of each neighborhood so that I could use the FourSquare location data.
 The data for the geographical coordinates of each postal code was available as a csv file at: http://cocl.us/Geospatial_data
- (3) I then used the FourSquare to get data on nearby venues for the neighbourhoods (using their latitudes and longitudes for each of them).
 FourSquare returns the data as json (javascript object notation) on name, categories etc of the venues within a radius specified by the user (I uses 500m radius by default).

Once I gathered the above data in a panda dataframe, I proceeded to analyse all the selected neighborhoods for the kind of venues around for frequency of Indian Restaurants.

Then I grouped the venue data by neighbourhood and sorted in descending order for mean frequency of 'Indian Restaurant'.

The top ones would be ideal for me to open up the store which will specialize in stocking Indian spices besides other mostly Indian commodities and artifacts. This neighborhood is likely to be visited by people of all nationalities interested in Indian spices and commodities. As mentioned earlier, I would also like to get Indian restaurants as my clientele for supplying regular stock of Indian spices as well as use them as locations for advertising for my store.

4. Results

On performing the above detailed analysis on the sample Toronto postcodes using the python code, I got the following output:

<u>Neighborhood</u>	<u>Indian Restaurant</u>
Dorset Park, Scarborough Town Centre, Wexford...	0.285714
Woburn	0.250000
Thornccliffe Park	0.125000
Bedford Park, Lawrence Manor East	0.045455
The Annex, North Midtown, Yorkville	0.038462
Davisville	0.028571
Central Bay Street	0.023810
The Danforth West, Riverdale	0.022727
Cabbagetown, St. James Town	0.021739
Church and Wellesley	0.011111
Adelaide, King, Richmond	0.010000
Harbourfront East, Toronto Islands, Union Sta...	0.010000

The second column shows the mean frequency for venue category 'Indian Restaurants' as per the repository of Foursquare grouped by each neighborhood.

5. Conclusion

If I have my store too far from the neighborhood which has high concentration of Indian restaurants, the visitors to the Indian restaurants might not bother to travel far if they are interested to get the Indian spices and other stuff; hence it is important for my store to be in the same neighbourhood. Given the above results, I would focus and narrow down on the top two neighborhoods:

- Dorset Park, Scarborough Town Centre, Wexford Heights
- Woburn

Both of them have a mean frequency of more than 25% and are good candidates to open an Indian Store. Now I can start browsing these two neighborhoods and look at other criteria like available commercial space, competition, transportation etc.

Thanks for your time in reading my report.