

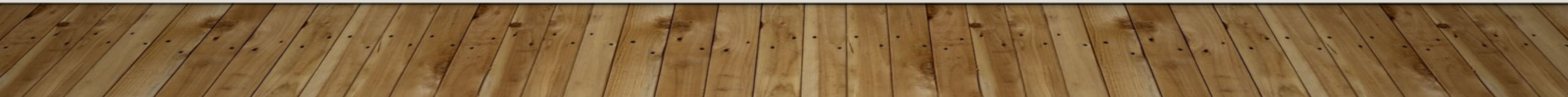
COURSERA CAPSTONE

IBM DATA SCIENCE PROFESSIONAL CERTIFICATE

WHERE CAN I OPEN A VEGAN RESTAURANT IN GREATER VANCOUVER AREA?

BY – SRINIVAS MURTHY

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BUSINESS PROBLEM

- Identify a suitable location in Greater Vancouver area for vegan restaurants
- Vegan restaurant provides healthy food options & options for people with certain allergies
- There is growing number of people opting for this type of food as they are both healthy & environmentally conscious.
- The main question we are trying to find answers for, is there enough market for more vegan restaurants in the Greater Vancouver area.
- Here are the major cities covered in the Greater Vancouver area:
 - Vancouver
 - Richmond
 - Burnaby
 - Surrey
 - Langley
 - South surrey/White Rock

DATA

- Following factors that will influence our decision are:
 - number of existing restaurants in each of the city (any type of restaurant)
 - Comparison of Non-vegan restaurants to Vegan ones
 - Restaurants data and location in every city will be obtained using Foursquare API
- One important assumption: I have not considered existing restaurants which also serve vegan options. I am looking for pure vegan restaurant. My data is heavily dependent on the foursquare data and it is assumed it is accurate.

METHODOLOGY

- Find out the restaurants data in each of the city, try radius of 5 KMs as Greater Vancouver area is tightly knitted to each other.
- So we will be able to find get most of the restaurants data within each of the city.
- Filter the data to get Non-vegan restaurants compare that with Vegan Restaurants.
- It should help us understand how much of vegan restaurants has share in the total number of restaurants.
- Plot graph to show the comparison

ANALYSIS

- To analyze the data we will use Clustering (K-Means) to understand in which cities the Vegan restaurants are more.
- It will show how restaurants are spread across these cities.
- Plot for Non-vegan restaurants and plot for Vegan restaurants.
- This will show us and give an understanding in which area Vegan restaurants are less and in which of these areas there are more.

RESULTS

- Our analysis shows that although there is a great number of restaurants in Vancouver area, there are lot of opportunities in the suburban cities in Greater vancouver area.
- Highest concentration of restaurants was detected in Vancouver city. With almost 30% of the restaurants found are Vegan, so we focused our attention to areas Burnaby, Langley, Surrey, White Rock and South Surrey.
- Even though these areas do not offer tourists spots, there is a increasing demand for vegan food in the residential areas. Vegan food offers variety of options for the people with alergies and people who want few healthy options.
- Here we reviewed the comparison between the Vegan restaurants to Non-Vegan restaurants and a bar graph has been plotted which shows the number of the restaurants in each of the city. It shows how many of them are Non-Vegan and compared to that how many of them are Vegan ones.

CONCLUSION

- Purpose of this project was to identify cities in the Greater Vancouver area where Vegan restaurants are low in number, in order to aid stakeholders in narrowing down the search for optimal location.
- Clustering of cities was then performed in order to create maps and find the cities where there are low to no restaurants. Using the map we can identify that other than Vancouver downtown and Vancouver city all other city centers have potential to have more vegan restaurants.
- Final decision on optimal restaurant location will be made by stakeholders based on specific characteristics of neighborhoods and locations.
- We can certainly expand more on this and build a model, taking into consideration additional factors like attractiveness of each location, proximity to major locations like malls, real estate availability, prices, social and economic background of every neighborhood in every city.