**Topic: Recommendation System of Locations for Opening a New Italian Restaurant**

**Business Problem:**

In the world of business, it is observed that running a restaurant is much beneficial and lasts for decades. But about 90% of the restaurant setups fail to gather required number of customers to remain in business. There are many factors which are needed to be stressed before opening a new restaurant. One of them is the “right location” for new installation which still have too many things to focus on in itself. Selection of a new location for such a business in an unfamiliar city is totally a risk, which needs too much efforts, time, expenses, collaborations, information, and decision making.

For instance, a foreign investor/businessman to the city, who want to open a new Italian restaurant, can avoid these problems by approaching a data analysis organization which work on all these factors and have a system to recommend the most likely places according to requirements.

**Goal:**

Locating the potential neighbourhood for opening a new Italian restaurant.

**Objective:**

Prescribe more than one location of priority, in neigbhourhoods of Toronto for opening a new Italian restaurant.

**Stakeholders:**

Following could be the stakeholders for this system:

1. Foreign investor/businessman
2. Local businessman
3. Local chain owner
4. Entrepreneur
5. Researchers

**Data Description:**

Different types of factors affect in selecting a location for restaurant. In this problem, best possible three locations are required to be prescribed consisted on the following data:

1. Population & Density

For a restaurant to run successfully, population factor plays and important role. More the population of an area, more will be the likelihood of customers coming to restaurant. It is in fact directly proportional to the success of a restaurant.

Type of population also plays a vital role in running a themed business, in this case, Italian food is the theme of restaurant. Though, this theme is not very specific instead liked worldwide giving it a generalized level but in the premises of Italian population there is more likelihood of success.

1. Average Income of Neighbourhood

More the income more will be the probability of people having food from outside for taste and ease. There could be more events in that specific area needing a good restaurant for food. So average income of neigbhourhoods may be a good factor to put stress on.

1. Crime Rate

Safety is another component for any business to run. Therefore, the crime rate of boroughs/neigbhourhoods is essential to be considered.

1. Recreation Places in Neighbourhood

Neighbourhood with shopping mall, university/college, or other entertainment facilities increases the chances of people to use those facilities through walk, cycling or by car/train. This increases the activity in the city especially, the foot or car traffic specifically in that neighbourhood.

1. Employment in Neighbourhood

Employment in a neighbourhood gives an insight of the likelihood of number of people that can get benefited from a restaurant. There could be a very wealthy neighbourhood but wealth could be in hands of certain people instead of general public, decreasing the probability of a successful restaurant business.

1. Commuting on any Transport

Commuting percentage on any transport is a good description of activity in the neighbourhood which in turn let the restaurant to run smoothly with good profits. Though this doesn’t include pedestrian but is a very important feature for crowd in restaurant.

1. Percentage of Relevant Population (Italian in this case)

Relevant population play an important role for any restaurant but the Italian food is world-wide acceptable so this feature can’t be considered the critical one.

1. Postal codes of Neighbourhood with Boroughs

Postal codes, neighbourhood names with boroughs are required for accessing the latitude and longitude data and detailed information. A vital feature for joining different datasets.

1. Latitude and Longitude of Neighbourhood

Latitude and longitude of neighbourhood for accessing the corresponding available data within certain radius.

Datasets:

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| --- | --- | --- |
| **Sr. No.** | **Feature** | **Dataset Link** |
|  | Population & Density | https://en.wikipedia.org/wiki/Demographics\_of\_Toronto\_neighbourhoods |
|  | Average Income of Neighbourhood | https://en.wikipedia.org/wiki/Demographics\_of\_Toronto\_neighbourhoods |
|  | Crime Rate | http://data.torontopolice.on.ca/datasets/neighbourhood-crime-rates- |
|  | Recreation Places in Neighbourhood | Foursquare.com |
|  | Employment in Neighbourhood | http://map.toronto.ca/wellbeing |
|  | Commuting on any Transport | https://en.wikipedia.org/wiki/Demographics\_of\_Toronto\_neighbourhoods |
|  | Percentage of Relevant Population | https://en.wikipedia.org/wiki/Demographics\_of\_Toronto\_neighbourhoods |
|  | Postcode, Latitude & Longitude | http://cocl.us/Geospatial\_data |
|  | Postcode, Boroughs & Neighbourhood | https://en.wikipedia.org/wiki/List\_of\_postal\_codes\_of\_Canada:\_M |
|  | | |
|  | **Total Distinct Dataset Links** | **6** |