NamasTea

Investigating the Opening of a new coffeeshop in Toronto

Stefania Oresta

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Summary

1. Introduction

1.1. NamasTea Essence

NamasTea corporation is a chain of coffeehouses that sells organic and biological products. NamasTea locations serve both cold and hot drinks (teas and herbal teas, coffee beverages, juices, smoothies, etc..), pastries, snacks and, at lunch time, they offer a selection of sandwiches, salads and other healthy meal options. Moreover, costumers have the possibility to buy organic products from the fair-trade market in each NamasTea location. NamasTea aims to invest in organic, eco-friendly and seasonal products and increase their clients' awareness towards fair-trade market and healthy lifestyle.

1.2. Business Problem

NamasTea is interested in opening a new location in Toronto and is asking the data scientist to understand which is the best neighbourhood considering the type of served products and the target audience.

1.3. Target audience

NamasTea believes that it's urgent to increase the sensibility of young adults towards fair-trade market, the respect of the environment and towards a healthy lifestyle. Its target audience includes:

- young adults that are sensitive to this cause and prefer an healthy option for a weekend breakfast, a snack in the afternoon, a coffee with a friend and a smoothie after the gym;
- young professionals that prefers an healthy but quick option for their lunches and need a place for to grab a coffee or a tea;
- university students that might need a comfortable and quite place to study while having a hot beverage and that are sensitive to the respect of the environment and pick an organic options for their breaks within classes.

2. Data & Methods

2.1. Creation of the Toronto Dataframe

The goal of the NamastTea project was to define the best neighbourhoods in Toronto to open a new location of the NamasTea coffeehouse chain considering its clientele and the products served. Based on this research question, different neighbourhoods in Toronto were compared based on the existing venues.

First of all, in order to create a dataframe with the details about Toronto neighbourhoods, information about the different postal codes related to both boroughs and neighbourhoods were extracted from Wikipedia (https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M); postal codes with no assigned boroughs and neighbourhoods were excluded from the sample. Having sampled all the boroughs and neighbourhoods in Toronto and their corresponding postal codes, geographical coordinates were extracted adding specifics about latitudes and longitudes to the main dataframe. Using latitude and longitude data, two maps of Toronto will be created to explore both boroughs and neighbourhoods.

2.2. Exploration of venues in boroughs and neighbourhoods of Toronto

Secondly, Foursquare data was used in order to explore the different venues in Toronto and select boroughs and neighbourhoods of interest to deepen our exploratory analysis. In particular, the presence of universities, colleges or other higher education facilities (e.g. art schools, institutes of technology, dormitories, libraries...) was used to filter all the neighbourhoods in Toronto and drop a list of the most interesting ones based on the aim of the investigation. Afterwards, the presence of the following range of facilities was investigated:

- presence of offices;
- presence of sport centers such as gyms, pilates centres, yoga centers, dance schools, boxing schools, etc... as measure of interest in a healthy lifestyle;
- presence of other bars or coffeehouses to understand the most appreciated facilities.
- presence of markets (e.g. food markets, flea markets, fish markets) as a measure of the interest in organic and eco-friendly general attitude in the neighbourhood.

A list of the top 5 locations for each neighbourhood and of the top 10 most common locations for each neighbourhood in the area of interest was calculated as it was seen as a valid representation of the general customer behaviour.

2.3. Cluster analysis

Moreover, a cluster analysis was computed in order to identify different groups of neighbourhoods and focus our attention on those who better represent the vibe and the clientele NamasTea is interested in.

3. Results

3.1. Downtown Toronto borough: area of interest

The exploratory analyses run in this project aimed to select the most interesting neighbourhoods were NamasTea could open a new coffeehouse. The investigation of the presence of universities, colleges or other higher education facilities showed that the majority of the student amenities are located in the Downtown Toronto borough (*figure 1; Table 1)* that was, as a consequence, selected as area of interest to further explore Toronto neighbourhoods.

Postal Code	Borough	Neighborhood	Latitude	Longitude
M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government	43.662301	-79.389494
M5B	Downtown Toronto	Garden District, Ryerson	43.657162	-79.378937
M5C	Downtown Toronto	St. James Town	43.651494	-79.375418
M5E	Downtown Toronto	Berczy Park	43.644771	-79.373306
M5G	Downtown Toronto	Central Bay Street	43.657952	-79.387383
M6G	Downtown Toronto	Christie	43.669542	-79.422564
M5H	Downtown Toronto	Richmond, Adelaide, King	43.650571	-79.384568
M5J	Downtown Toronto	Harbourfront East, Union Station, Toronto Islands	43.640816	-79.381752
M5K	Downtown Toronto	Toronto Dominion Centre, Design Exchange	43.647177	-79.381576
M5L	Downtown Toronto	Commerce Court, Victoria Hotel	43.648198	-79.379817
M5S	Downtown Toronto	University of Toronto, Harbord	43.662696	-79.400049
M5T	Downtown Toronto	Kensington Market, Chinatown, Grange Park	43.653206	-79.400049
M5V	Downtown Toronto	CN Tower, King and Spadina, Railway Lands, Har...	43.628947	-79.394420
M4W	Downtown Toronto	Rosedale	43.679563	-79.377529
M5W	Downtown Toronto	Stn A PO Boxes	43.646435	-79.374846
M4X	Downtown Toronto	St. James Town, Cabbagetown	43.667967	-79.367675

Postal Code	Borough	Neighborhood	Latitude	Longitude
M5X	Downtown Toronto	First Canadian Place, Underground city	43.648429	-79.382280
M4Y	Downtown Toronto	Church and Wellesley	43.665860	-79.383160

TABLE 1. TABLE OF ALL COLLEGE RELATED FACILITIES IN TORONTO WITH CORRESPONDING POSTAL CODE, BOROUGH AND COORDINATES.
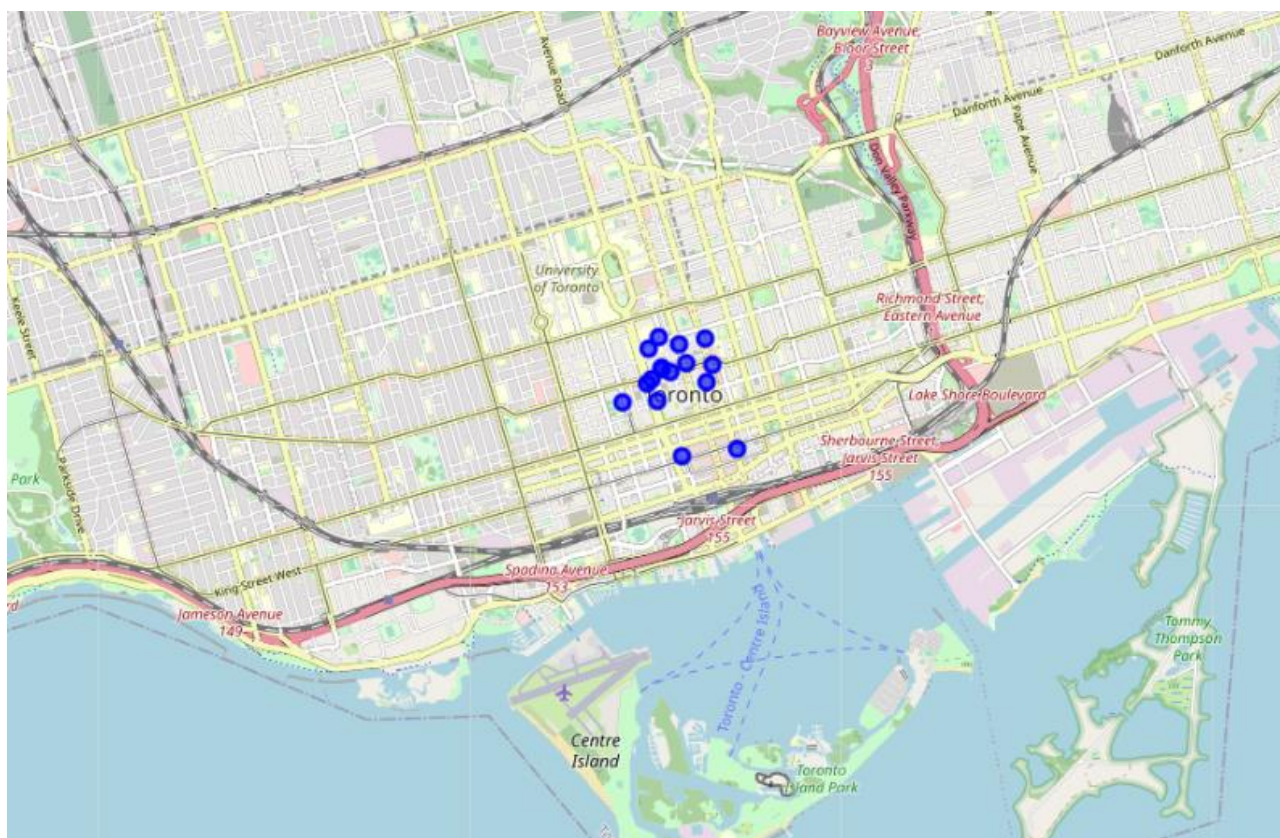

FIGURE 1. VISUAL REPRESENTATION OF COLLEGE RELATED FACILITIES IN TORONTO.

3.2. Exploration of venues

The exploration of the venues in Downtown Toronto confirmed it to be in line with the NamasTea target as the analyses of the 5 most common venues in each neighbourhood revealed high interest for coffeeshops, cafés, grocery stores, gyms, bars and restaurant. This tendency was confirmed when looking at the top 10 most common venues in general in Downtown Toronto (*figure 2*). However, neighbourhoods such as CN Tower, King and Spadina, Railway Lands, Harbourfront West, Bathurst Quay, South Niagara and Island airport are influenced by the presence of the airport and, as a consequence, should not be considered as in target for our project.
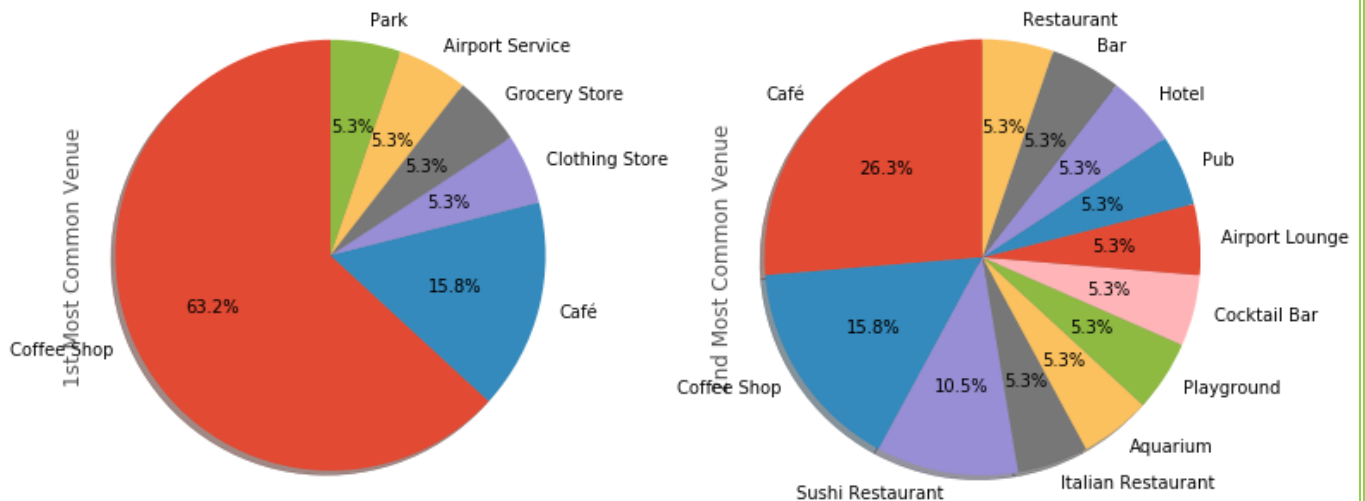
FIGURE 2. PIE CHARTS REPRESENTING THE 1ST (LEFT) AND 2ND (RIGHT) MOST COMMON VENUES IN DOWNTOWN TORONTO IN PERCENTAGE.

3.3. Cluster analysis

At last, the cluster analyses showed the presence of 5 different clusters of which the first revealed to be the most representative for the NamasTea project (*Figure 3*). As a matter of fact, when looking at the top venues in between the different clusters (*Figure 4*), it is immediately perceivable that in cluster 1 (*Table 2*) there is a higher concentration of university facilities, coffeeshops, bars and facilities typically targeted by students and young professionals, which coincide with NamasTea target audience.
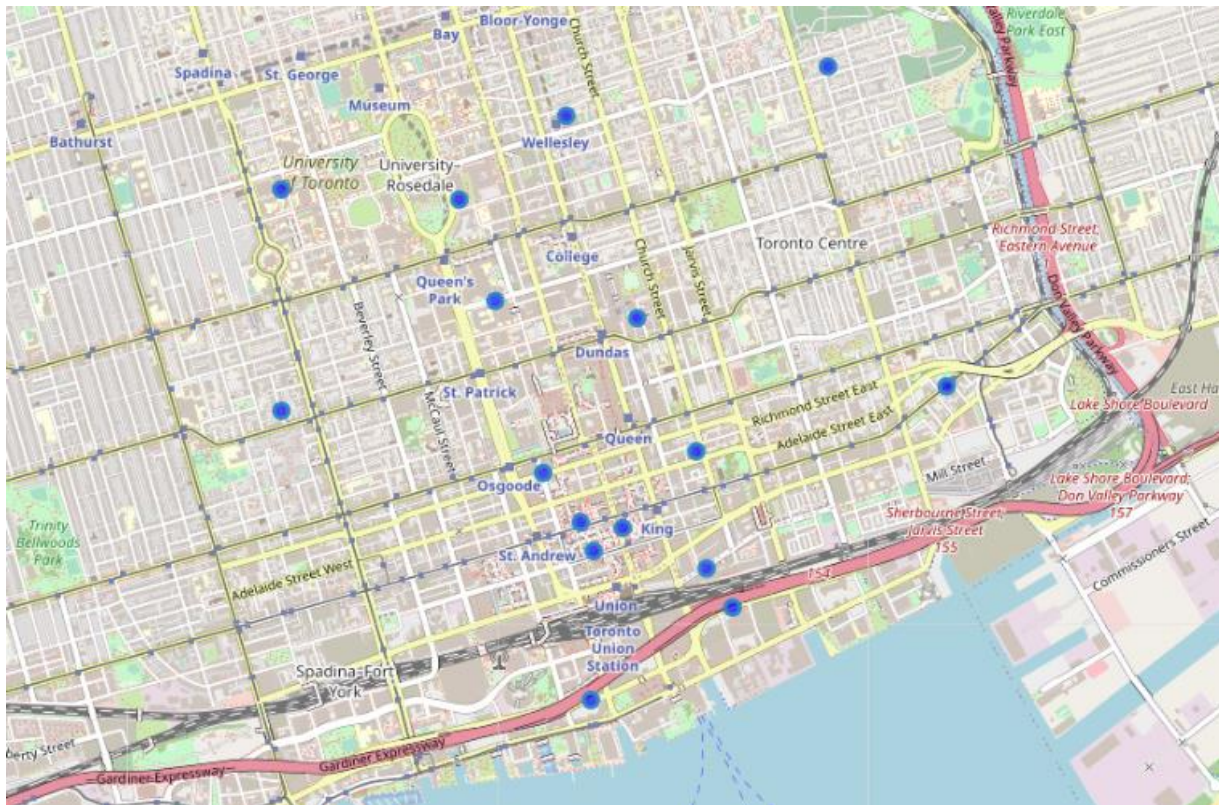
FIGURE 3 . VISUAL REPRESENTATION OF THE NEIGHBOURHOODS IN CLUSTER 1

Neighbor hood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Garden District, Ryerson	Clothi ng Store	Coffee Shop	Italian Restau rant	Café	Bubble Tea Shop	Japane se Restau rant	Middle Easter n Restau rant	Cosmet ics Shop	Tea Room	Ramen Restau rant
St. James Town	Café	Coffee Shop	Restau rant	Cockta il Bar	Americ an Restaur ant	Gastro pub	Lingeri e Store	Depart ment Store	Moroccan Restaura nt	Creperi e
Berczy Park	Coffe e Shop	Cockta il Bar	Café	Restau rant	Beer Bar	Seafoo d Restau rant	Bakery	Cheese Shop	Park	Irish Pub
Richmon d,	Coffe e Shop	Café	Restau rant	Gym	Clothin g Store	Deli / Bodeg a	Hotel	Thai Restaur ant	American Restaura nt	Concer t Hall

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| Adelaide, King									
Harbourfront East, Union Station, Toronto Islands	Coffee Shop	Aquarium	Café	Hotel	Restaurant	Fried Chicken Joint	Scenic Lookout	Italian Restaurant	Brewery	Sporting Goods Shop
Toronto Dominion Centre, Design Exchange	Coffee Shop	Hotel	Café	Restaurant	American Restaurant	Seafood Restaurant	Deli / Bodega	Salad Place	Italian Restaurant	Japanese Restaurant
Commerce Court, Victoria Hotel	Coffee Shop	Café	Restaurant	Hotel	Gym	American Restaurant	Deli / Bodega	Japanese Restaurant	Italian Restaurant	Seafood Restaurant
University of Toronto, Harbord	Café	Bar	Italian Restaurant	Japanese Restaurant	Bookstore	Bakery	Restaurant	Yoga Studio	Sandwich Place	Beer Bar
Kensington Market, Chinatown, Grange Park	Café	Coffee Shop	Bakery	Dessert Shop	Vietnamese Restaurant	Mexican Restaurant	Vegetarian / Vegan Restaurant	Grocery Store	Gaming Cafe	Bar
Stn A PO Boxes	Coffee Shop	Café	Restaurant	Beer Bar	Seafood Restaurant	Cocktail Bar	Japanese Restaurant	Italian Restaurant	Cheese Shop	Hotel
St. James Town, Cabbagetown	Coffee Shop	Restaurant	Pub	Café	Italian Restaurant	Bakery	Pizza Place	Chinese Restaurant	Sandwich Place	Butcher
First Canadian Place, Underground city	Coffee Shop	Café	Restaurant	Gym	Hotel	Japanese Restaurant	Salad Place	Deli / Bodega	Seafood Restaurant	American Restaurant
Church and Wellesley	Coffee Shop	Sushi Restaurant	Japanese Restaurant	Restaurant	Gay Bar	Yoga Studio	Café	Men's Store	Mediterranean Restaurant	Hotel
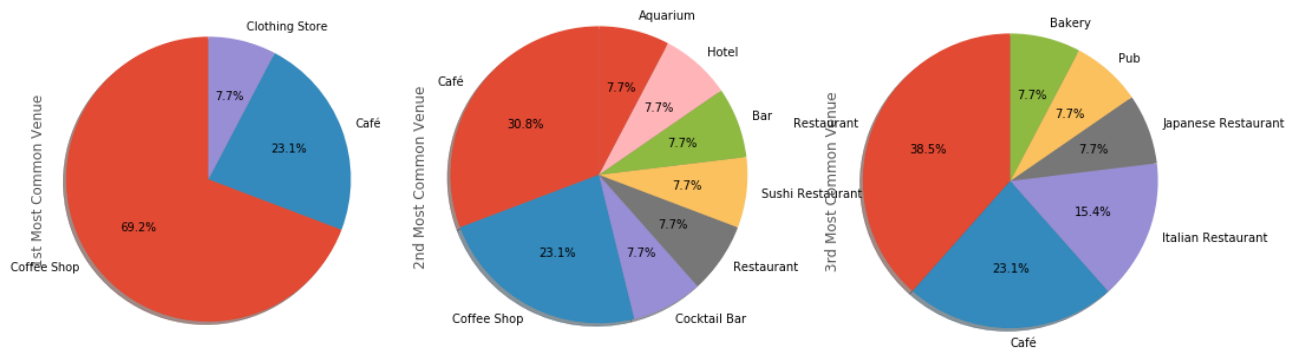
FIGURE 4. PIE CHARTS REPRESENTING THE 1ST (LEFT), 2ND (CENTRE) AND 3RD MOST COMMON VENUES IN CLUSTER 1 NEIGHBOURHOODS IN PERCENTAGE.

4. Discussion & Conclusion

The goal of this project was to define the best neighbourhoods in Toronto where NamasTea could open a new location based on their target clientele: young adults sensible towards fair-trade market, respect of the environment and towards a healthy lifestyle. Our exploratory analyses suggest Downtown Toronto as target borough due to the high concentration of educational facilities. Moreover, within the neighbourhoods in Downtown Toronto, the computed cluster analyses suggest to focus on those neighbourhoods lying in cluster 1 due to the higher presences of the following venues:

- presence of bars or coffeehouses;
- Presence of college related facilities
- presence of sport centers;
- presence of markets.

As a matter of fact, we believe that such venues are representative of a neighbour with young sustainable and healthy vibe.

As a consequence, we suggest the following neighbourhoods as target for the opening of the new NamasTea coffeeshop in Toronto:

- Garden District, Ryerson
- St. James Town
- Berczy Park
- Richmond, Adelaide, King
- Harbourfront East, Union Station, Toronto Islands
- Toronto Dominion Centre, Design Exchange
- Commerce Court, Victoria Hotel

- University of Toronto, Harbord
- Kensington Market, Chinatown, Grange Park
- Stn A PO Boxes
- St. James Town, Cabbagetown
- First Canadian Place, Underground city
- Church and Wellesley.