

Introduction/Business Problem

A London based budget airline company is exploring the feasibility of adding Toronto as a new destination. The company has enjoyed tremendous success in the London – New York route. Its objective is to replicate this success adding a new destination similar to New York. The company has approached my consultancy company to do a feasibility study.

The success of the London- New York route can be attributed broadly to two main factors; demand from leisure travelers and demand from business travelers

Demand from leisure travelers:

Art and Culture – World class museums, theatres, plays, concerts, festivals

Shopping

Food and cafes

Bars and restaurants

Demand from business travelers:

Global/regional financial centers are locations with concentration of Banks, Insurance companies, Asset management companies. There should also be multi-functional infrastructure offering some of the best legal, medical, and entertainment facilities.

Problem:

The investment outlay of flying to a new destination is huge. Thus, it is critical that every new destination has to be studied carefully in terms of sustained demand in the medium term. Budget airline has to ensure that every flight is at least 80% full capacity to make the route profitable.

It is imperative that my study using the Foursquare location data is able to analyse whether Toronto has the appealing establishments, just like what New York has to offer, demanded by the travelers to make it a feasible route.

Audience:

My audience is the Board Committee of the budget airline which has commissioned me for this study. The presentation should be factual based but in simplified data technical details for ease of understanding.

Data

This includes identifying the necessary data content, formats and sources for initial data collection.

Content

Below is the broad statistics compiled using Foursquare location data for New York city. I will replicate this for Toronto and this will form the base content for my data.

Leisure Travelers		
	Average Rating	Average Number of Likes
Museums		
Shopping		
Restaurants		

Business Travelers		
	Average Rating	Average Number of Likes
Financial Institutions		

Sources

a) Foursquare Location Data

Using the location services in Foursquare, I could explore in detailed whether Toronto has what New York offers to these travelers. It could be further refined by taking into account the ratings of these establishments in my study.

The statistical compilation will be used for analysis.

Format

JSON

```
latitude = 43.6532
longitude = -79.3832
```

```
search_query = 'Categories'
radius = 10000
```

```
url = 'https://api.foursquare.com/v2/venues/search?client_id={}&client_secret={}&ll={},{}&v={} &query={} &radius={} &limit={}'.format(CLIENT_ID, CLIENT_SECRET, latitude, longitude, VERSION, search_query, radius, LIMIT)
```

The following is an example of a raw location data in JSON format

```
{
  'name': 'National September 11 Memorial & Museum (National September 11 Memorial)',
  'location': {
    'address': '180 Greenwich St',
    'crossStreet': 'btwn Liberty & Fulton St',
    'lat': 40.71145106322093,
    'lng': -74.0134334564209,
    'labeledLatLngs': [
      {
        'label': 'display',
        'lat': 40.71145106322093,
        'lng': -74.0134334564209
      },
      {
        'label': 'entrance',
        'lat': 40.711481,
        'lng': -74.012691
      }
    ],
    'distance': 644,
    'postalCode': '10006',
    'cc': 'US',
    'city': 'New York',
    'state': 'NY',
    'country': 'United States',
    'formattedAddress': [
      '180 Greenwich St (btwn Liberty & Fulton St)',
      'New York, NY 10006',
      'United States'
    ]
  },
  'categories': [
    {
      'id': '5642206c498e4bfca532186c',
      'name': 'Memorial Site',
      'pluralName': 'Memorial Sites',
      'shortName': 'Memorial Site',
      'icon': {
        'prefix': 'https://ss3.4sqi.net/img/categories_v2/arts_entertainment/historicsite',
        'suffix': '.png'
      },
      'primary': True
    }
  ],
  'referralId': 'v-1587458301',
  'hasPerk': False
}
```

b) Wikipedia

In addition, I will supplement my content by web scraping the following website

https://en.wikipedia.org/wiki/Tourism_in_Toronto

With the information garnered, I could establish whether Toronto could satisfy the demands required by the same travelers to New York. As such, based on this data analysis, I am able to confidently present to my client our recommendation on adding Toronto as a new destination.

Methodology

I will be using the Foursquare API to download the location data for categories of establishments and ratings to form the following compilation for both New York and Toronto:-

Leisure Travelers		
	Average Rating	Average Number of Likes
Museums		
Shopping		
Restaurants		

Business Travelers		
	Average Rating	Average Number of Likes
Financial Institutions		

This will be achieved targeting 10km radius from the standard central longitude and latitude of New York and Toronto. Below is an example of the code in Python for New York City.

```
search_query = 'museum'
```

```
latitude = 40.7128
```

```
longitude = -74.0060
```

```
radius = 10000
```

```
url =
```

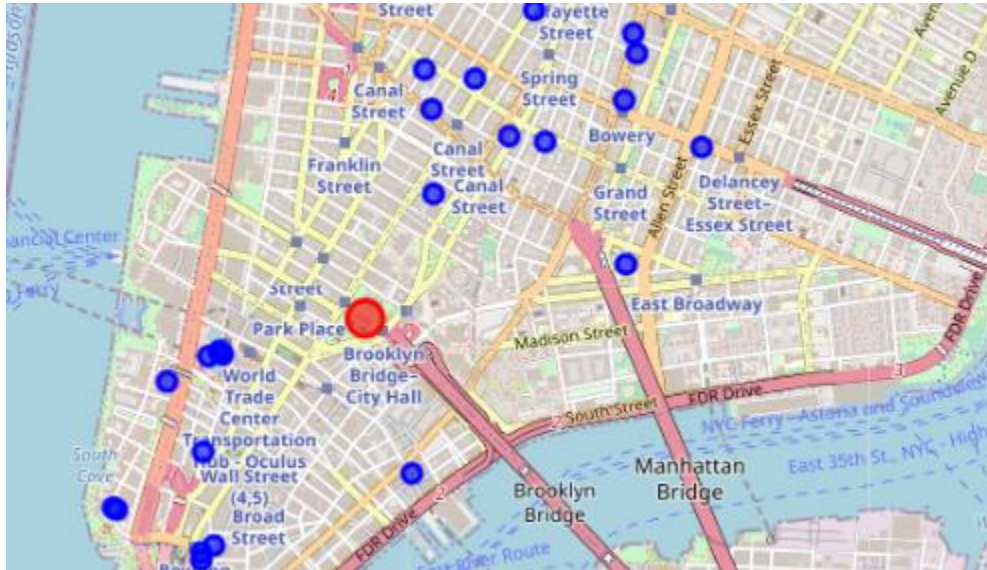
```
'https://api.foursquare.com/v2/venues/search?client_id={}&client_secret={}&ll={},{}&v={}&query={}&radius={}&limit={}'.format(CLIENT_ID, CLIENT_SECRET, latitude, longitude, VERSION, search_query, radius, LIMIT)
```

The raw JSON data will be tabulated in dataframes via Python Pandas for analysis.

	name	categories	id	state
0	National September 11 Memorial & Museum (Natio...	Memorial Site	4b6b5abff964a520fb022ce3	NY
1	Museum of Jewish Heritage	History Museum	49d4bb1bf964a5204b5c1fe3	NY
2	Museum Of Ice Cream NYC	Museum	5df18d37db204c00076d525a	NY
3	South Street Seaport Museum	History Museum	4ab67030f964a520187720e3	NY
4	Whitney Museum of American Art	Art Museum	421a7600f964a5209d1f1fe3	NY

To create better visual impact, Python Folium will be employed to mark out the places of interest in the maps of the two cities.

Here is an example of the museums in New York City



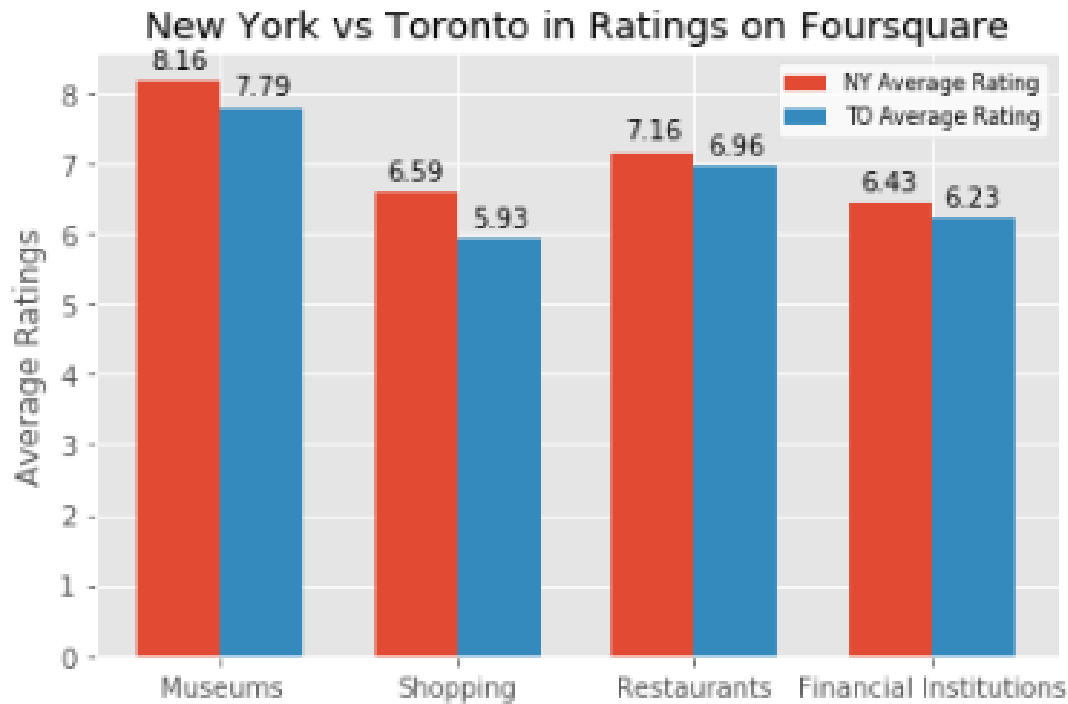
Results

New York

<u>Leisure Travelers</u>		
	Average Rating	Average Number of Likes
Museums	8.16	1,852
Shopping	6.59	205
Restaurants	7.16	155
<u>Business Travelers</u>		
	Average Rating	Average Number of Likes
Financial Institutions	6.43	10

Toronto

<u>Leisure Travelers</u>		
	Average Rating	Average Number of Likes
Museums	7.79	128
Shopping	5.93	492
Restaurants	6.96	68
<u>Business Travelers</u>		
	Average Rating	Average Number of Likes
Financial Institutions	6.23	5



Discussion and Conclusion

According to Wikipedia, Toronto is the leading tourist destination. In 2017, the city received 43.7 million tourists where the tourist spending totally \$8.84billion. The number of visiting is set to rise largely because of factors including its world-class air access, surging tech, entertainment and recreation industries and its reputation for diversity and inclusiveness.

This is largely reflected in the comparable Ratings to a world class city New York, in terms of Museums, Shopping, Restaurants and Financial Institutions categories. As analysed earlier, these categories are the main factors driving visitor-ship from Leisure and Business travelers to a destination. With the momentum in this fast growing tourism industry and the city investment in tourism infrastructure as it is reliant on this industry to boost its economy, it is evident that the demand from traveler to this city will surge. As such, I will recommend that Toronto be added as a new destination for your company.