

The Battle of Neighborhoods

Canadian Twin Cities?

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1. Introduction

This report seeks to compare two of Canada's most popular and desirable cities; Toronto and Vancouver. These two cities have been eternal 'rivals' among migrating city dwellers, professional expatriates, and international tourists .

The desirability and productivity of a city is the result of its economic growth and development, no less contributed by its land-use decisions. Through time, urban planners constantly monitor land use, so as to ensure the landscape not only retains their heritage and strategic advantage, but also its usage reaps the highest return.

There are plenty of websites and travel guides on these cities, with extensive write-ups on features such as city site, climate, history and culture. However, there is an absence of resources that allows stakeholders to have a simple direct comparison of neighborhoods' physical characteristics in terms of land use mix across these two cities. I will attempt to extend that comparison using FourSquare's location data.

2. Overview of the Cities

Brief abstract on Toronto

Toronto is the provincial capital of Ontario, is the most populous city in Canada. It is an important international trading centre, with the greatest economic ties to, and influence from, the United States. It is home to the headquarters of Canada's five largest banks and other multinationals, and host a dominant stock exchange. By the 1980s, shifted to service employment, making Toronto a prominent financial, insurance, administration and retailing centre.

Brief abstract on Vancouver

Vancouver is a coastal seaport city in region of British Columbia, and is Canada's major Pacific coast port, and is today home to the largest fine natural port in Canada, serving as a main hub for trade with Asia and Pacific Rim. It is no wonder that it has trade and transportation as basic components of its economy, together with forestry and mining. It is North America's most cosmopolitan place, with one of the most picturesque settings of any city in the world, making it a favorite tourist, as well as film and TV production destination.

3. Significance for Stakeholders

This study will be of interest to the following stakeholders:

- Prospective Internal and external immigrants, for reasons such as
 - to adopt a neighborhood with similar facilities (e.g. types of restaurants, supermarkets) to their current residents, so as to adapt quickly.
 - a preference to start new residences in neighborhoods that is either densely built (for vibrancy and convenience), or sparsely built (for better air quality or tranquility).

- City planners and officials, for reasons such as
 - to monitor the development and growth of specified neighborhoods, and if the landscape deviated from intended usage.
 - to compare, and differentiate, the land use of neighborhoods of their city from rival cities, perhaps to boost tourist visits.

- Companies and businesses, for reasons such as
 - preferences to set up franchises, outlets and branches in other cities at locations with neighborhood characteristics that are similar to successful sites in present city. Successful or prosperous office and shop locations could be due to intangible correlations with surrounding features (such as near transport facilities, or complementary business types), and business owners usually will pay attention to such details when establishing new sites in another city.

4. Neighborhoods for comparison

Comparison is conducted on metrics based on physical forms (characteristics) of neighborhoods within designated feature district of the city. I have selected three feature districts of the city for this task: waterfront/habour, financial district, airport.

Justification for neighborhood selection:

- Shipping trades contributed a significant role in the early development of both cities, where both had thrived from trades with neighboring countries. And picturesque waterfronts are popular destinations for both tourists and affluent residents. A comparison could be established for potential residents before making real estate investments, as well as city officials if the land use is reaping good returns in terms of tourist dollars.
 - Neighborhoods: Coal Harbour vs Downtown Toronto, Harbourfront

- The central business district is the engine of economic growth for any city. A comparison for city planners would enable them to observe how the land-use in own or rival neighborhood reaps the most profitable returns in terms of rentals. The built density would be an indicator of efficient land use.
 - Neighborhoods: Downtown Vancouver vs Downtown Toronto, Union Station
- The airport is the main aviation hub for any cities. A comparison of land-organization around the neighborhood would allow analysis of the traffic movements and vehicle speed, two crucial factors influencing any aviation hub stature.
 - Neighborhoods: Vancouver International Airport vs Pearson International Airport

5. Data Sources

Data will be extracted from the following sources,

- https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Vancouver
- <https://api.foursquare.com/v2/>
- <https://www.latlong.net>

The following underlies the sequence the data would be acquired:

1. Neighborhoods in cities: Neighborhoods would be scraped off wikipages
2. Location data: Geographical coordinates for neighborhoods would be inserted.
3. Neighborhood venues: Venues located within the neighborhoods would be found using FourSquare's API.

6. Strategies for comparison

Analysis on the comparison for each categories of neighborhood is performed for 3 rings of buffer zones from the location's centre; 1km, 3 km, 5km. For each buffer zone, the top 10 most common venue categories is presented, and analyzed between cities. This allows us to compare and quantify the extent of land use mixture between cities. In addition, the average distance of the venues in each buffer zone from the location, as well as inter-buffer average venue distance, is calculated to determine the density of each neighborhoods

7. Analyzing Land Mix Use

Observation within 1km zone radius:

- Harbour: Cafe appears among top 3 venue for both. But Coal Harbour has a higher proportion of wide restaurants choices in the top 10, probably due to Coal Harbour having more scenic view than Harbourfront. In fact, all top 10 venues for Coal Harbour are of dining categories. On the contrary, Harfront has a park and theater, indicating more mix use of land.
- Financial centre: Again, dining and food spots dominate for Downtown Vancouver, with 9/10 venues are of restaurants and cafe types. For Union station, more mix use is observed, with a park, theater and scenic lookouts.
- Airports: Not much difference observed between land use for both, where the majority of joints are of food outlets and restaurants.

Observation within 3km zone:

- Harbour: Coal Harbour still does not exhibit much change in the land-mix usage, where a high proportion (90%) of venue categories in the top 10 are still dining and food outlets. On the contrary, Harfront has a park, theater and a farmers market on a wider zoning.
- Financial centre: Again, dining and food spots dominate for Downtown Vancouver, with 9/10 venues are of restaurants and cafe types. However, there is a Concert Hall in a outer zone, suggesting cultural sites is allocated. Union Station also has land for cultural usage in a theater. And there is wider mix use, incorporating hotels, tourist facilities and gyms (lifestyle).
- Airports: Food and dining still dominates for both, with arrival facilities such as car rentals and hotels. Vancouver airport has more land to accommodate 'land-consuming' facilities such as park and golf course.

Observation within 5km zone radius:

- Harbour: Coal Harbour retains its characteristics of having high proportion of dining and food outlets in its land use even at a 5km radius. On the contrary, Harfront has a park, theater and a farmers market on a wider zoning.
- Financial centre: Again, dining and food spots dominate for Downtown Vancouver, with 9/10 venues are of restaurants and cafe types. However, there is a Concert Hall in a outer zone, suggesting cultural sites is allocated. A surprise inclusion is a 'trail' in Downtown Vancouver on a wider zoning. Union Station also has land for cultural usage in a theater. And there is wider mix use, incorporating hotels, tourist facilities and gyms (lifestyle), with a new inclusion of parks for lifestyle well-being.

- Airports: Food and dining still dominates for both, with arrival facilities such as car rentals and hotels. Vancouver airport has more land to accommodate 'land-consuming' facilities such as park and golf course.

8. Analyzing Land Density

- Harbour: Within a small zonal area of 1km, Coal Harbour appears to be more dense than Harbourfront, with average distance from neighbourhood center at 476m. With the radius increment of 200% and 160% respectively, Harbourfront has an average distance increment of 95% and 34% respectively. Whereas Coal Harbour has only 55% and 27% increment. Hence, it seems Coal Harbour Vancouver has a much more densely crowded harbour district compared to Toronto's Harbourfront.
- Financial centre: The same observation can be made regarding the financial districts of both cities, where Vancouver's financial centre is more densely built than Toronto's. There is a almost 200% and 120% increment for Toronto's downtown average distance, quite proportional increase relative to the increase in zonal radius. But for Vancouver's, a 227% and 25% average increase disproportionately. This suggest there is a limit to expanded built area outside of the city centre area.
- Airports: The average distance of venues from the airport center is greater for Toronto's Pearson airport than Vancouver's airport, but by not much as the zonal radius increases. This suggest that for both cities, there are sufficient outer zonal lands outside the airports for venues to be located further apart.

9. Conclusions

In regards to land-mix organization, Toronto's Harbourfront district has a more varied land-mix usage compared to Vancouver's Coal Harbour. This characteristics remains with an increase in zonal radius. For downtown financial districts, again Toronto's Union Station neighborhoods has more varied land usage than Vancouver's Downtown. However, there seems more activity venues available in the further zones for Vancouver's Downtown compared to its Coal Harbour. Not much difference in terms of airport zone's land usage, almost similar for both cities, except Vancouver has a larger outer airport zone to pair with parks and golf courses. On average, Vancouver is a much denser built city than Toronto, with venues more closely located to each other.

Therefore, I can conclude that both cities are not exactly alike in the waterfront and city center, with Toronto's having more varied landscape, and Toronto being the bigger cousin than Vancouver, definitely has more spacious landscapes.