

# Similarities of the neighborhood structure of Capital Cities

## 1. The Problem

Due to the more and more growing Population in this world combined with the rural exodus, cities are growing faster than ever before. Managing such big cities is not an easy task. To achieve a high standard of living for the inhabitants it is necessary to provide a lot of public infrastructure for instance continuous electricity, tap water and sewage as well as public transportation. So, let's focus on public transportation, because it is the most flexible one and therefore easiest to improve. Public transportation providers are facing different issues. In some cities this is working fine, in others it is not. So, there is the question, if there are similarities between the neighborhoods of big cities. If there are any similarities, good working solutions for public transportation of some cities can be applied to other ones. The same principle might be practical for other infrastructure like water and electricity. Thus, the target audience of this analysis might be public transportation provider as well as the city administration. While the city administration might improve their processes and the living standards for the inhabitants, the public transportation provider might increase their revenue with optimized offers.

## 2. The Data

Based on the neighborhood data as well as the venues in the neighborhoods both cities Toronto and New York City will be compared. With the coordinates of each neighborhood the venues will be retrieved from the Foursquare API. This Data will be clustered and drawn out on a map to show similarities or dissimilarities between the countries.

The used Dataset looks like this with 12248 entries:

	City	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	NewYork	Wakefield	40.894705	-73.847201	Lollipops Gelato	40.894123	-73.845892	Dessert Shop
1	NewYork	Wakefield	40.894705	-73.847201	Rite Aid	40.896649	-73.844846	Pharmacy
2	NewYork	Wakefield	40.894705	-73.847201	Carvel Ice Cream	40.890487	-73.848568	Ice Cream Shop
3	NewYork	Wakefield	40.894705	-73.847201	Walgreens	40.896528	-73.844700	Pharmacy
4	NewYork	Wakefield	40.894705	-73.847201	Dunkin'	40.890459	-73.849089	Donut Shop