

Comparing House Prices in Different Neighborhoods of Toronto, Canada

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1 Introduction

1.1 Background

Toronto will experience a rapid population growth over the next 20 years. Even worse, this growth is accelerating, and is expected to double by the year 2041 [1]. This rapid increase in the population number significantly affects the real estate in Toronto, leaving the low-income households most vulnerable to inadequate housings or to a lack of any at all.

This challenge requires that the real estate industry adaptates to the economic conditions of every social class in Toronto. Otherwise, it will not provide profitable and comprehensive service to meet this challenge. The first to do this is to understand the current real estate conditions in Toronto. Therefore, in this project, we will compare the house prices in neighborhoods of Toronto.

As this challenge will surely affect various areas - urban planning, environment, finance, etc. - the findings are intended to multiple stakeholders. These stakeholders who will benefit from these findings are the urban planning office of the Canadian government, the Ministry of environment, and also the real estate companies operating in the country.

1.2 Problem Statement

How does the price of houses vary between different neighborhoods of Toronto?

1.3 Data

This project requires first the housing price data. We have obtained house sales data of the Province Ontario [2]. This dataset contains 6 columns: address, areaName (the name of the area where the house is located), the price, the latitude and longitude of the location. Furthermore, there is no missing entry

	AreaName	Price (\$)	lat	lng
0	Richview	999888	43.679882	-79.544266
1	Chedoke Park B	399900	43.250000	-79.904396
2	Ainslie Wood East	479000	43.251690	-79.919357

Figure 1: House Sales in the Ontario Province

in the dataset. Figure 1 shows an example of the house sales data.

Secondly, we obtain venues data of each neighborhood from Foursquare using the postal codes obtained from the wikipedia page: "List of all Postal Codes in Canada M". From the Foursquare venues data, we will extract the neighborhood, the neighborhood latitude, the neighborhood longitude, the name of the venue, and the coordinates of the the venue (latitude and longitude) Venue and the category of the venue. We will combine these informations with the the house sales data to compare how the price varies between neighborhoods of different characteristics. Figure 2 shows an example of the venues data from Foursquare.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Regent Park, Harbourfront	43.6555	-79.3626	Roselle Desserts	43.653447	-79.362017	Bakery
1	Regent Park, Harbourfront	43.6555	-79.3626	Tandem Coffee	43.653559	-79.361809	Coffee Shop
2	Regent Park, Harbourfront	43.6555	-79.3626	Figs Breakfast & Lunch	43.655675	-79.364503	Breakfast Spot
3	Regent Park, Harbourfront	43.6555	-79.3626	Morning Glory Cafe	43.653947	-79.361149	Breakfast Spot
4	Regent Park, Harbourfront	43.6555	-79.3626	The Yoga Lounge	43.655515	-79.364955	Yoga Studio

Figure 2: Venues data in Toronto

References

- [1] Canadian Urban Institute Canadian Center for Economic Analysis. Toronto housing market analysis. jan 2019. This report is published by the Canadian Center for Economic Analysis and the Canadian Urban Institute.
- [2] Mahdy Nabaee. House sales in ontario. jan. This is a dataset available in Kaggle.