

# Airbnb & Toronto Real Estate

COURSE: EECS 6414

DATA ANALYTICS AND VISUALIZATION

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MID TERM PROJECT PRESENTATION

# Motivation:

## What Airbnb Is Doing To Toronto ?

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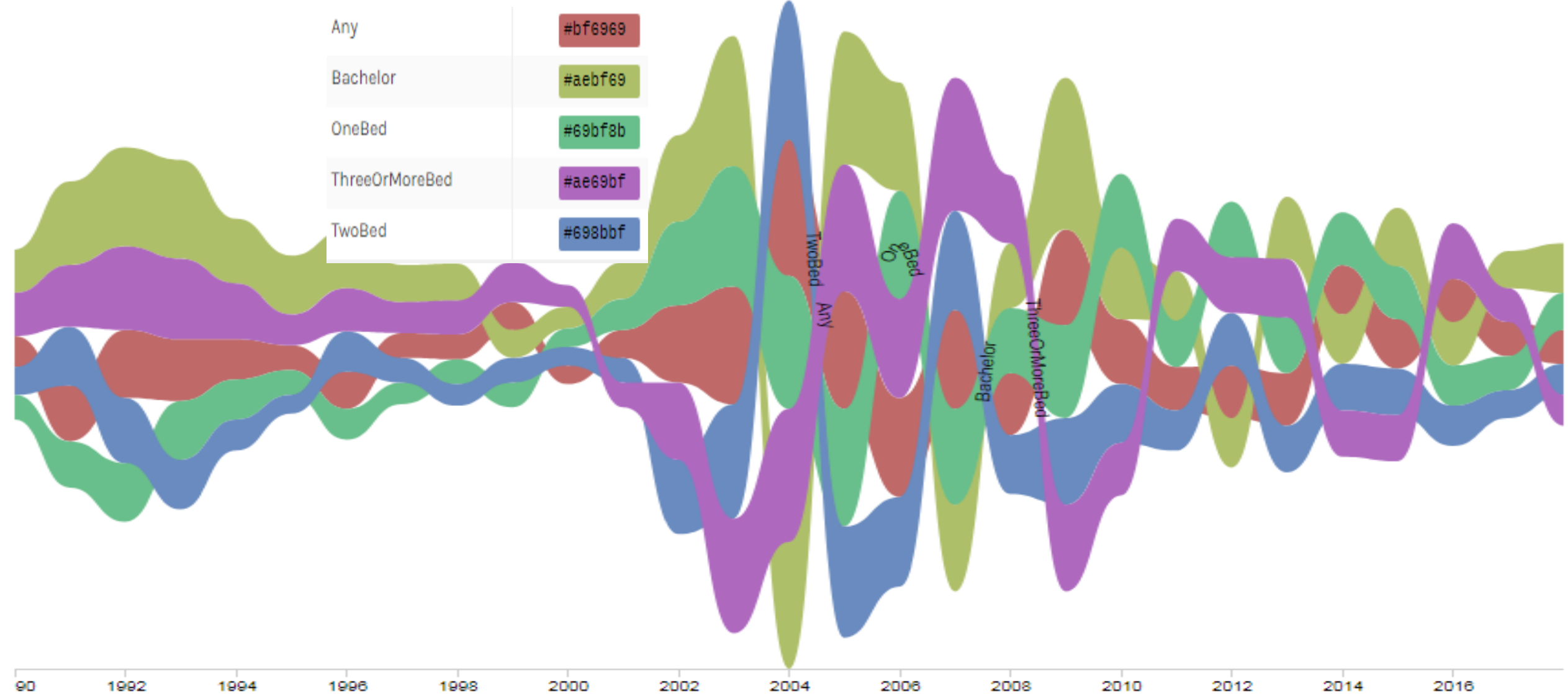
### Toronto

- Fairbnb group says returning 'even a fraction' to the market would help families seeking homes
- Toronto has **19,255** listing available for daily rent, while people are not getting vacant houses within budget for yearly or half yearly lease. **Should Toronto council regulate Airbnb** to compensate the housing crisis.

### Vancouver

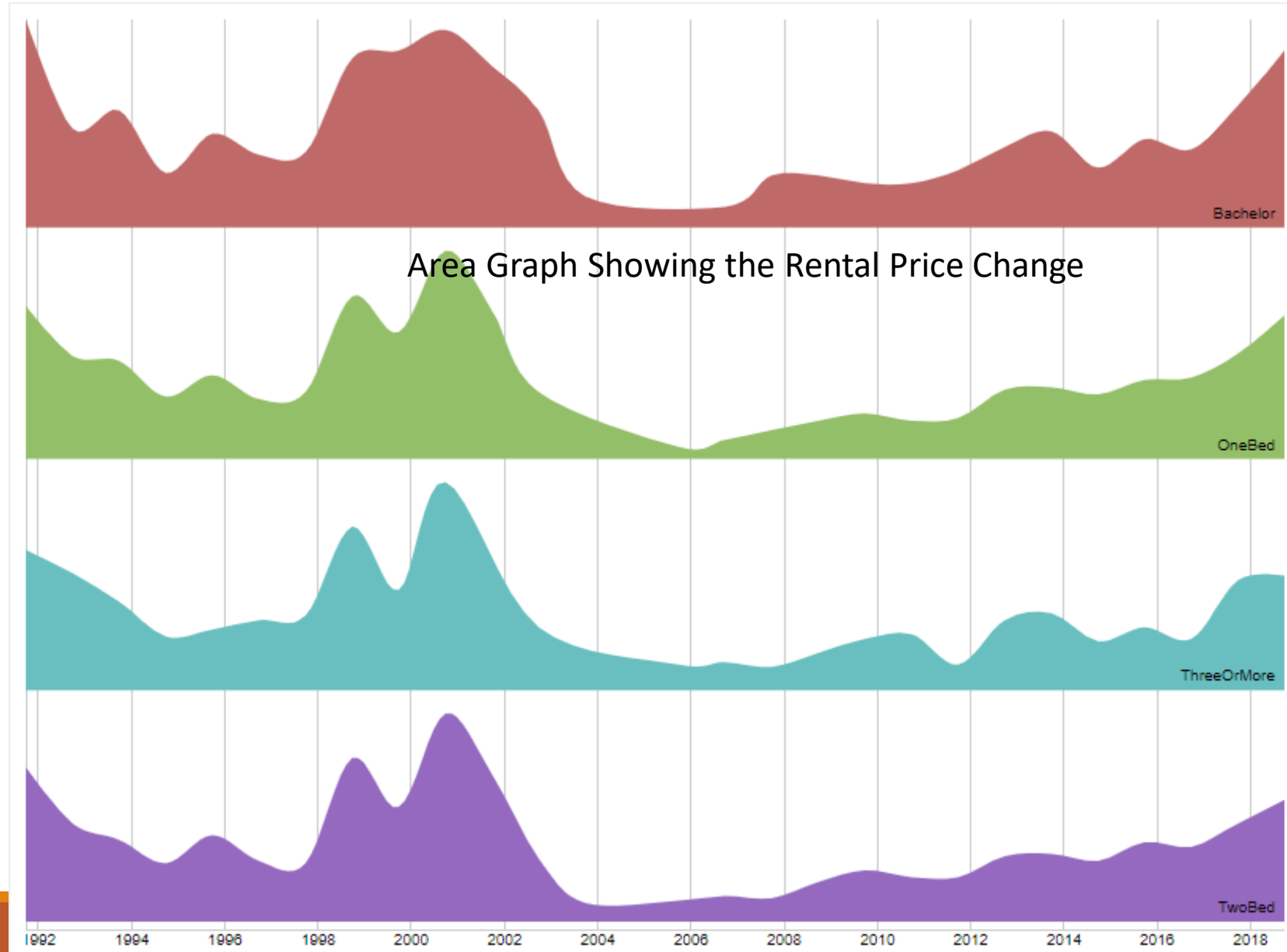
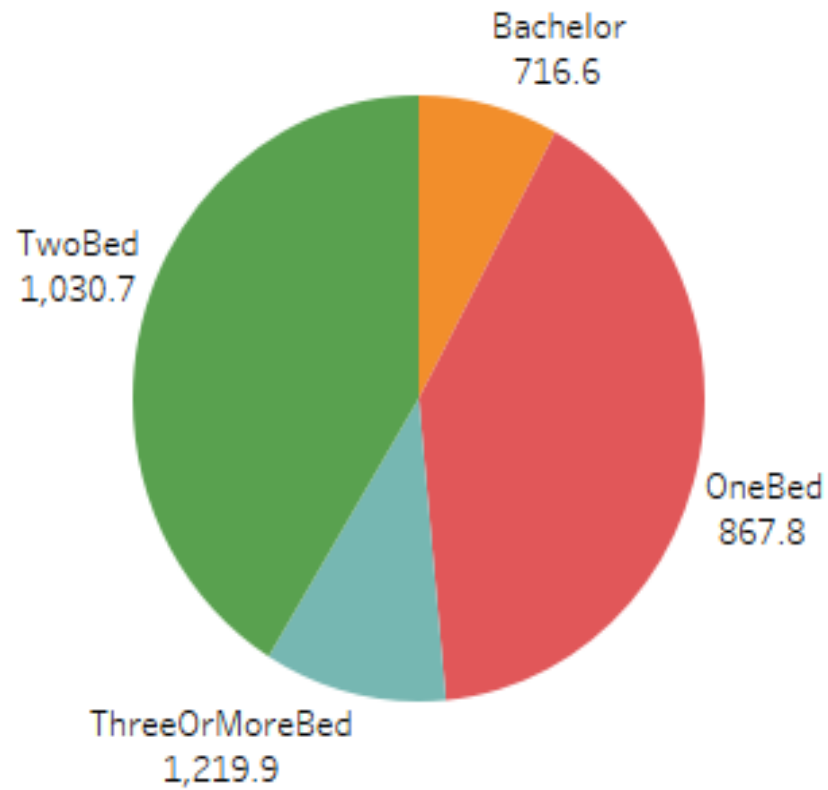
- Moving to ban all Airbnb and short-term rentals in secondary homes in the city.
- Expect about **1,000** rental units to get returned to the market.

# Chronological History of Long term Rental

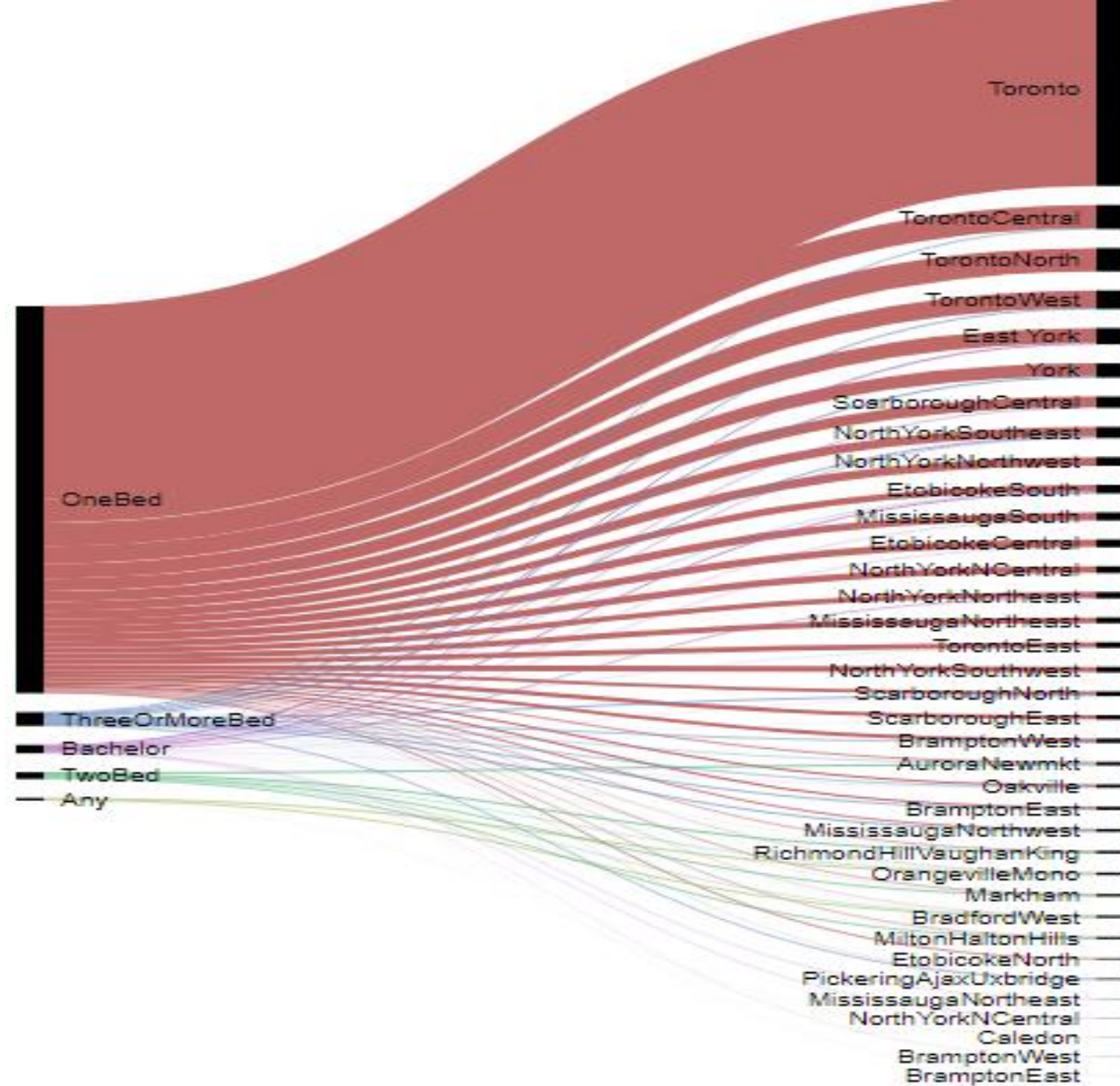


This bump chart shows the vacancy rate variation of long term rental. This is read like a bar chart.

# Average Rent By Property Type As Portion of Available Units



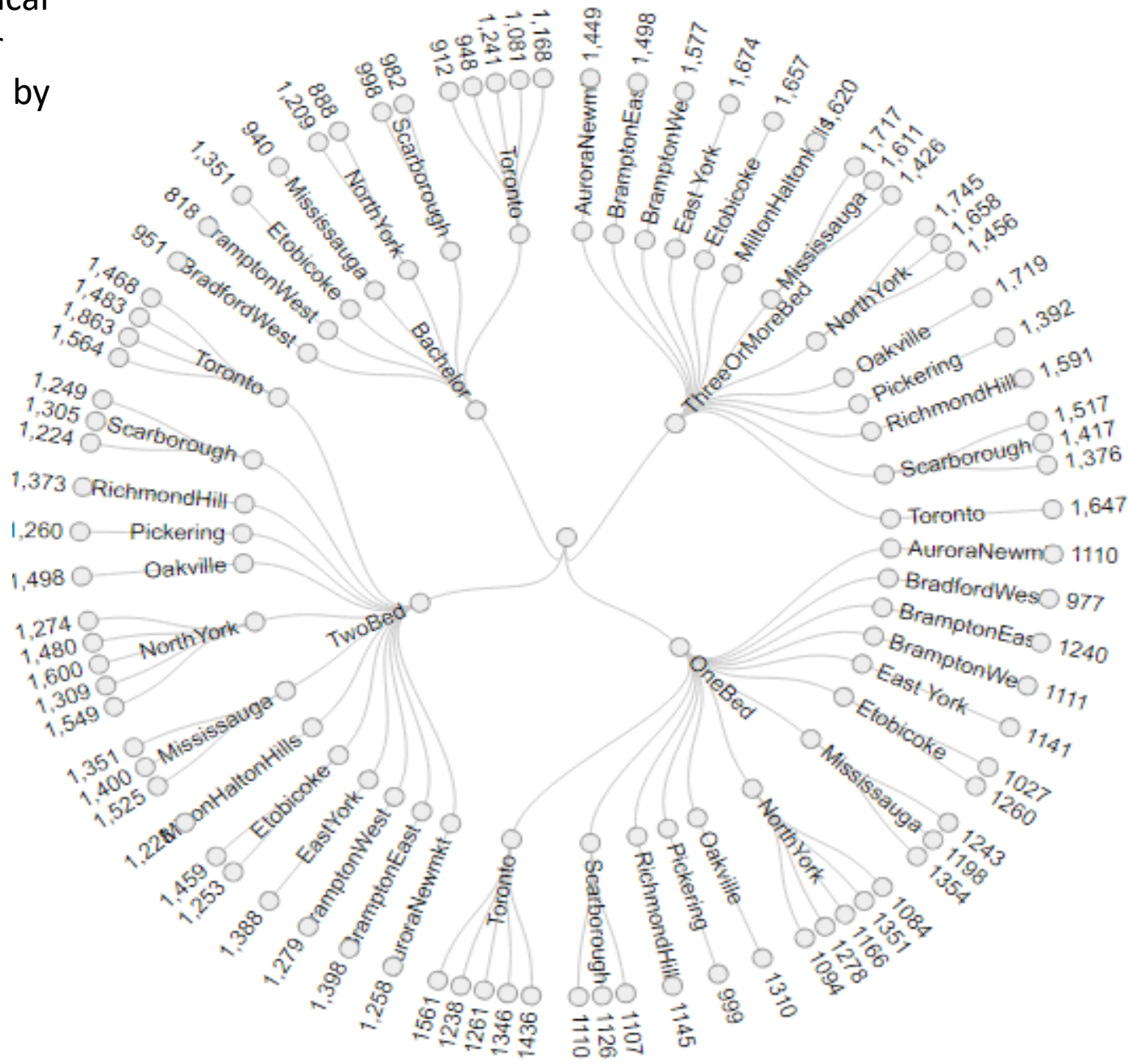
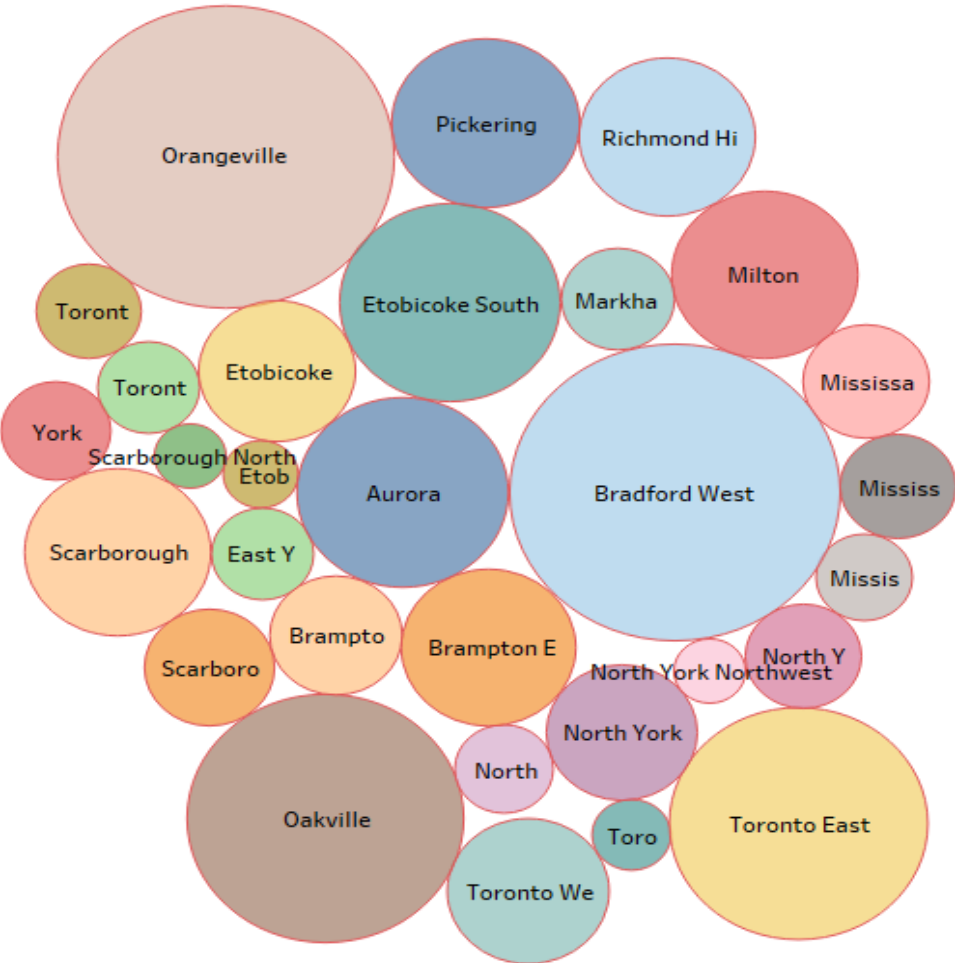
This Alluvial diagrams represents the correlations between the total number of houses available for long term rent in different areas of Toronto by property type. It is useful to see the evolution of property cluster that Toronto contains mostly one bed apartments. Three or more bed apartments are second highest numbers in different areas.





This circular dendrogram is representing the hierarchical distribution of average rent of different areas by their property type. The different depth levels represented by each node are visualized on the horizontal axes.

Variation of Long Term Vacancy Rate in Toronto

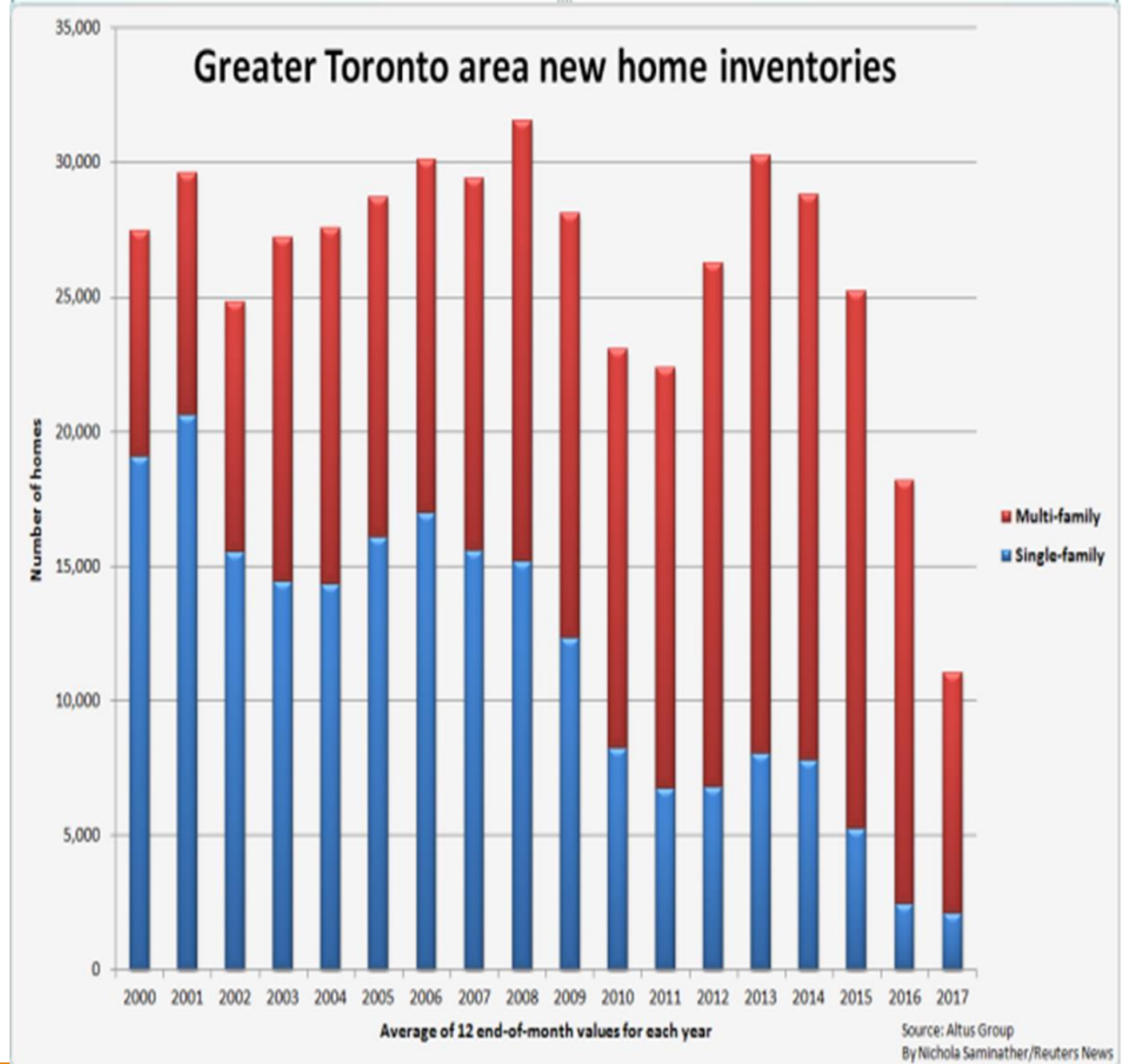
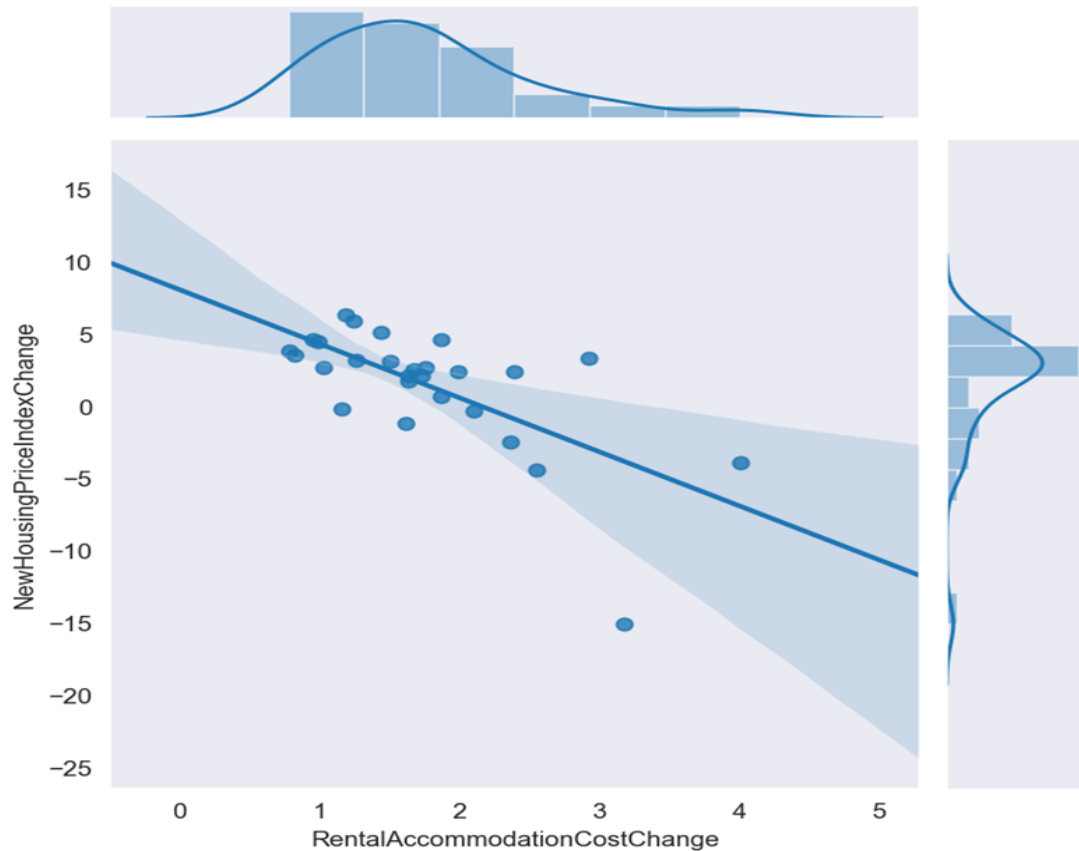


City. Size shows standard deviation of Vacancy Rate. The marks are labeled by City. The view is filtered on City

# Investment Trend Analysis

Trend Reasons:

1. Airbnb New Rental Supply
2. Job Market Instability
3. Higher Rent Change
4. Affordability=43.1%
5. Income gap%=44.86%





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**6MILLION +** Airbnb listings worldwide

**81K** cities with Airbnb listings

**191+** countries with Airbnb listings

**400M** Airbnb guest arrivals all-time

**2M+** average number of people staying on Airbnb/night

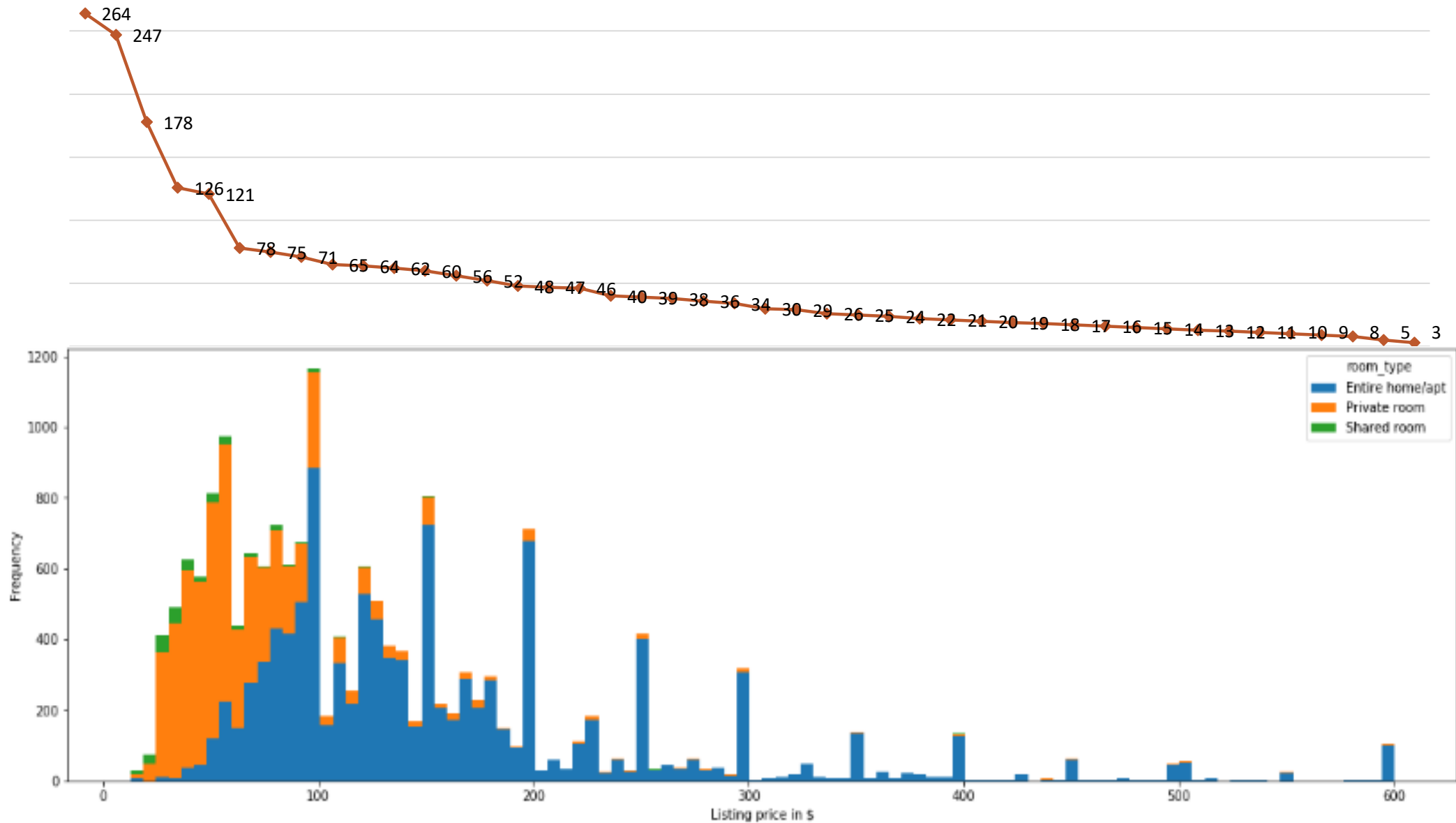
**1,000+** cities with Airbnb Experiences



# Airbnb Rental and Real Estate

	Number of Hosts	Full House	Private Room	Shared Room
Toronto	19,255 (100%) out of 19,255 listings	12,374 (64.3%)	6,526 (33.9%)	355 (1.8%)
Vancouver	4,273 (100%) out of 4,273 listings	2,907 (68%)	1,338 (31.3%)	28 (0.7%)
Montreal	19,495 (100%) out of 19,495 listings	13,713(70.3%)	5,606 (28.8%)	176 (0.9%)
Toronto real estate	Apartment: 3,20,898	1,66,258(51.81%)	14,8230(46.19%)	6410(2%)

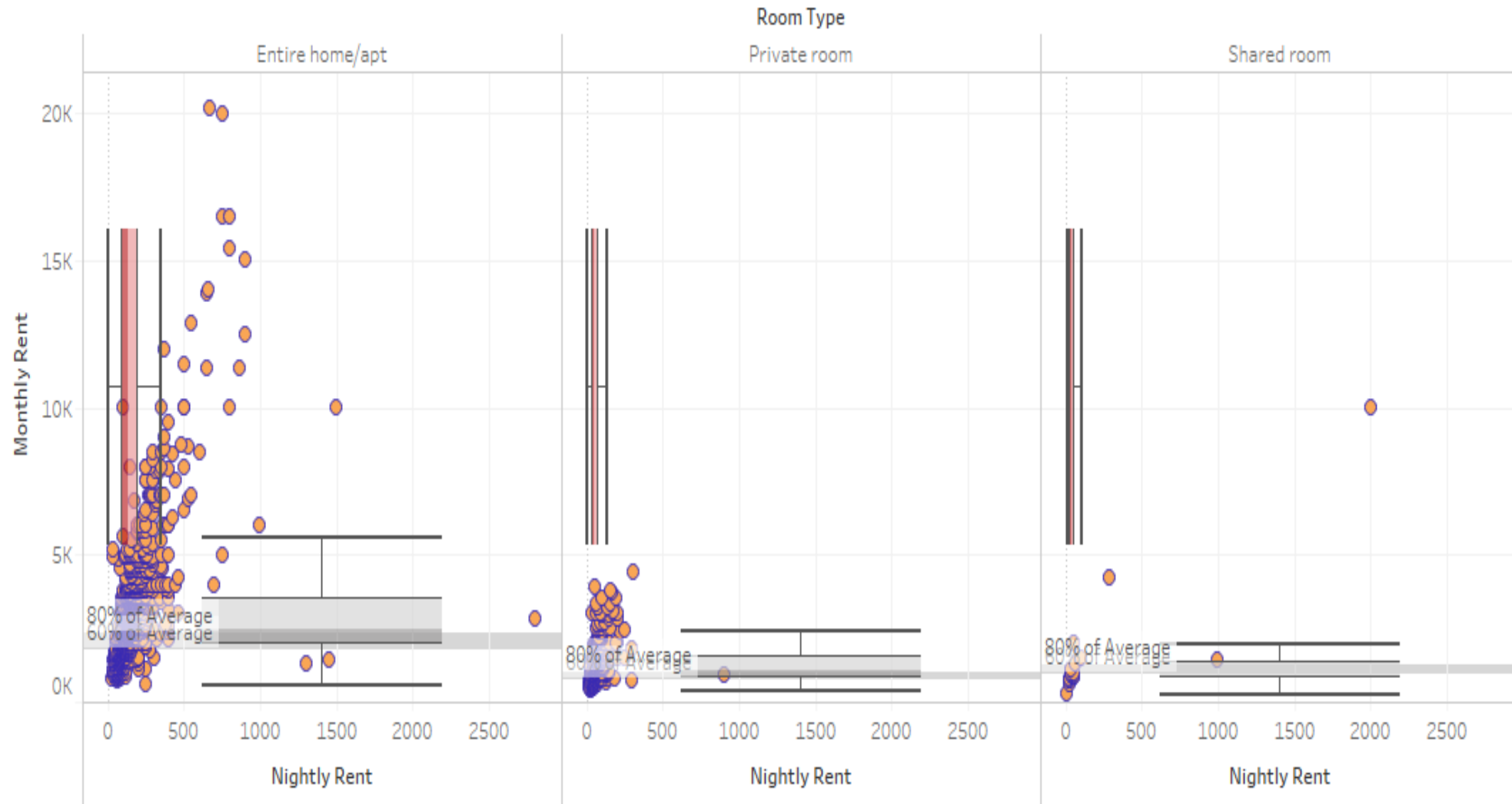
# LISTING COUNT PER HOST IN TORONTO



## Monthly and Per night Rent

**5 Bed 4.5 bath House**  
**ENTIRE HOME/APT**

**Per Night:** \$675  
**Monthly Rent:** \$20150  
**Security Deposit:** \$3000  
**Cleaning Fee:** \$175

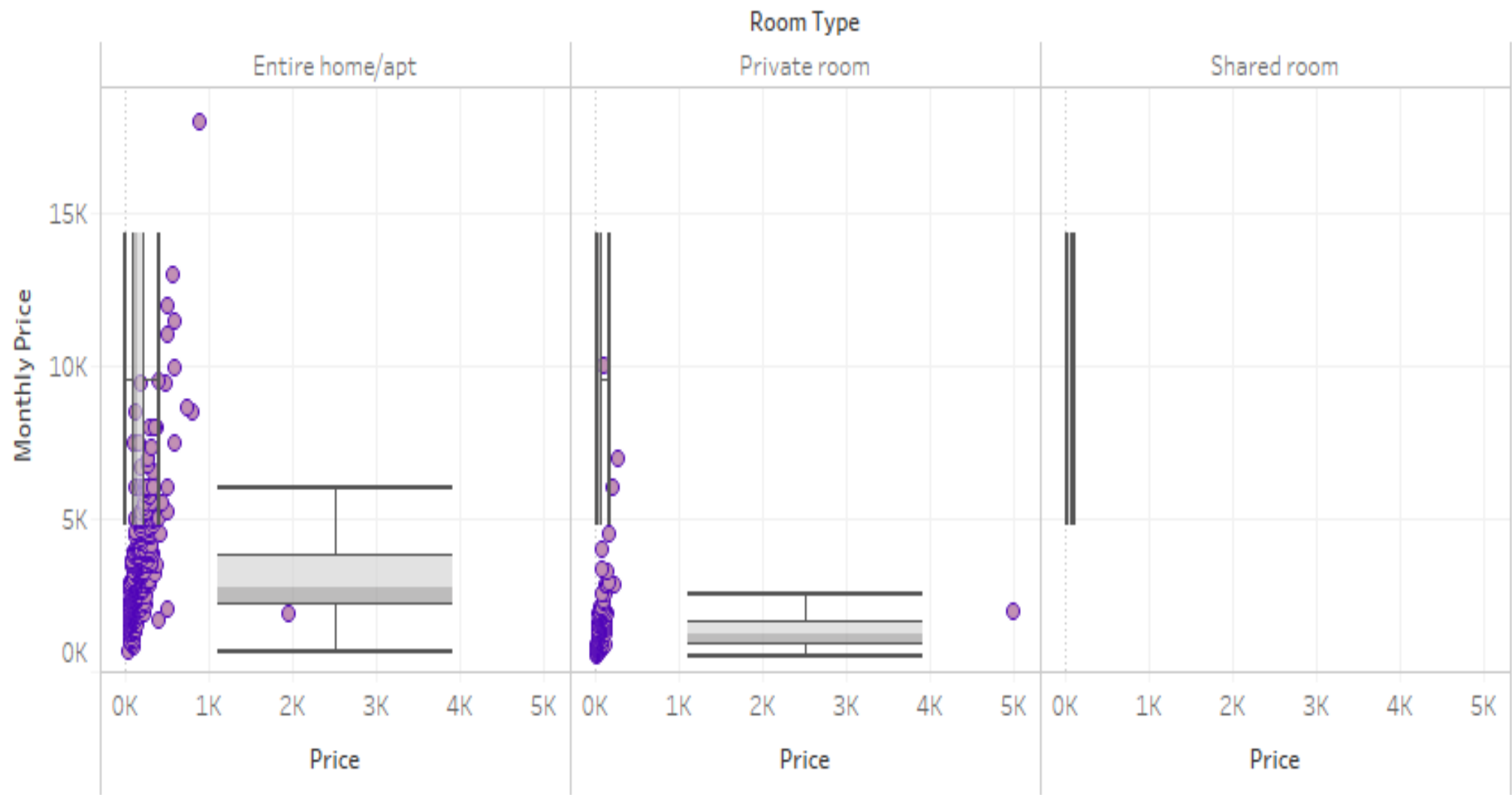


Nightly Rent vs. Monthly Rent broken down by Room Type.

# Vancouver Rent Analysis

**5 Bed 3 bath House**  
**ENTIRE HOME/APT**

**Per Night:** \$900  
**Monthly Rent:** \$1800  
**Security Deposit:** \$600  
**Cleaning Fee:** \$200



Price vs. Monthly Price broken down by Room Type.

# Methods And The Type Of Analysis

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# *Type I Analysis: Exploratory Data Analysis*

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- Rent Analysis (Airbnb Listing's and Real Estate Market)
- Number of Listings (Airbnb)
- Number of houses (Real Estate Market)
- Monthly rent comparison (Airbnb Listing' and Real Estate Market)



# *Type II Analysis*

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## *Prediction Model:*

- Next favorite destination of visitor in Canada
- Predict the nightly, weekly and monthly rent for listings
- Predicting the Listing Price/rent of Airbnb and Long Term Rental
- Prediction of User ratings
- Word frequency and cloud computation
- Content based Recommendation for the user

# *Type II Analysis*

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- A Density map clustering would be to plot the pricing data in terms of density and expensiveness on the map of Toronto. The variable will be used :
  - Rent per night
  - City
  - Longitude & Latitude
  - Joining Date( month and year)
  - Number of bedrooms
  - Property description
  - Property title
  - Property URL

## ***Type III Analysis:***

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**H<sub>0</sub>:** Airbnb has no effect on Toronto real estate market.

**H<sub>1</sub>:** Airbnb has effect on Toronto real estate market

# Data Sources

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## ☐ Inside Airbnb

- Listing.csv
- Calendar.csv
- Reviews.csv

☐ Toronto Real Estate Board

☐ Canada Mortgage and housing Corporation

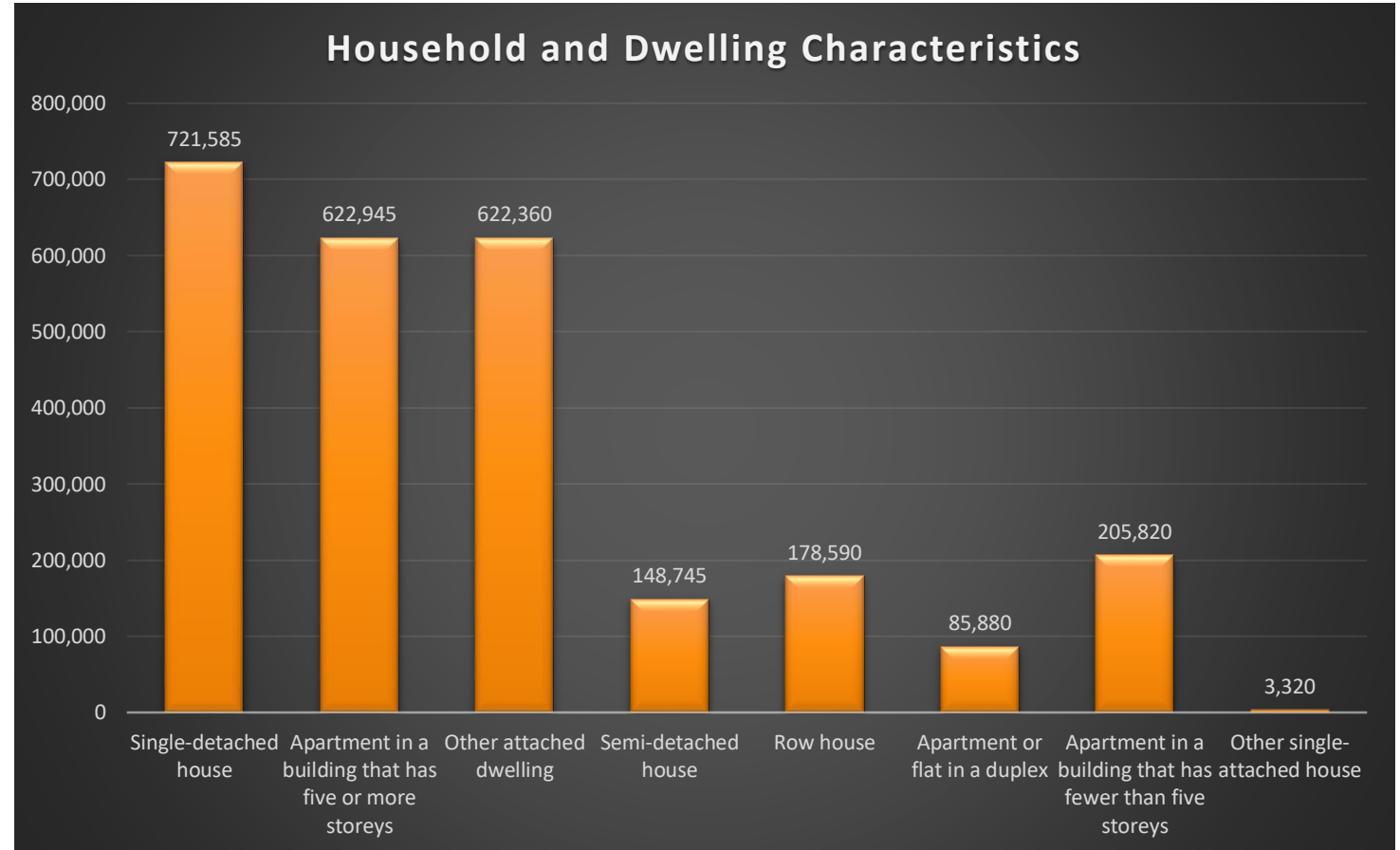
☐ Canada Real Estate Association

☐ <https://www12.statcan.gc.ca/>

# Concluding Remarks

1. Affordability
2. House Prices

Toronto Population 2016	5,429,524
Total Household	2,589,245
Difference	2,840,279



Number of Household and Population