

# Police Arrested and Associated Charges Over the Years in Toronto: Analysing and Connecting\*

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## Abstract

With rising rates of crime in Toronto, this paper looks at the trend from 2014 to 2022 of the number of arrests as well as where the arrests took place in the city of Toronto. The paper will also connect the trends seen with the current events of the said year and analyse its findings. In the end, this paper will highlight the ideas of increasing crime rate and the rates we see through out the paper. The results show that pandemic affected the number of arrests as well as which neighbourhood is safest.

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\*Code and data from this paper are available at:  
[https://github.com/NotSakura/Police\\_ArrestedAndCharged.git](https://github.com/NotSakura/Police_ArrestedAndCharged.git)

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## 1 Introduction

Toronto is a booming mega-city with a population of well over 3 million. In recent years there has been increased fear in the city about the rise in crime rates. Crimes ranging from homicide to public disturbance to illegal drug distribution has lead to increased arrests and charges being laid by the Toronto Police. According to major news outlets it seems that Torontonians feel crime rates are much higher than usual, making them feel unsafe in their own homes.

Fortunately, the city of Toronto compiles the data from 2014 to 2022 with the total number of arrests were made in each ward and what their charges were. A ward is a geographical regional division, a division created by the city of Toronto to partition the city into manageable districts that each have their own representative to represent them in city hall. There are 44 wards as of 2020. Now each ward has several police departments. When police officers are called to a criminal activity in their ward and they make

an arrest they are required to provide reason for that arrest. These are called charges. They can range from damage to person or property, theft, illegal drug abuse and more. As a reminder, arrest is very different from jailed. To be arrested means some one is detained from the scene by police while being jailed means perpetrator is kept in a confined cell. One can be arrested without being jailed. Other mega cities like Vancouver (Daffos (2023)) also seem to be suffering the same fate of increased crime rates.

To analyse if Toronto has really had an increase crime rates, this paper will be looking at arrest count from the years 2014 to 2022 and if the trends reflect any political or current events going on in the city. This paper is organised into Introduction, Data, Results, and Discussion/Conclusion. The data section will go through step by step the methods followed to organised and clean the data and the result section will output the same data for quantitative analysis such as looking at trends in terms of numbers. The Discussion section will cover the qualitative analysis of what is going with the data as well as connections for said data. Conclusions will be provided as well.

## **2 Data**

We will be examining in this section how the data was cleaned up in torder to display the desired results accurately.

First was loading the initial raw data from Open Data Portal provided by the city of Toronto(Gelfand 2022). This data set is titled “Toronto Police Report - Number of Arrested and Charged Person”. Data was cleaned and analysed in R(R Core Team 2021) by various helpful packages like, knitr(Xie 2014), janitor(Firke 2023), tidyverse(Wickham et al. 2019), readr(Wickham, Hester, and Bryan 2023), dplyr(Wickham et al. 2023).

## 2.1 Contents of Raw Data Set

The raw data consists of 10 columns: Year, Division, Hood, neighborhood, Sex, Age, Age Group, category, sub type and arrest count. year is the year the arrest was made. Division represents the ward and hood/neighborhood represents the neighborhood within each individual ward. Age and age group tell us the age and whether they are youth, adult or senior. Category is the charges they were arrested for and sub type tells us more specifically what the charges were for. For example if the category says “Crimes against Property” then the sub type will tell us if it is theft or vandalism or other. The arrest count is the column that this paper will focus on which represents the number of arrests made that year in a particular neighborhood for a specific crime. Future sections will cover what studies can be done with the rest of the data. Other datasets could have been used but they would not be more credible or complete as this dataset as this dataset shows the categories very thoroughly and this list was made by the city of Toronto from the reports that TPS(Toronto Police Service) provide.

## 2.2 Snippet of cleaned data

Through out the later sections, there will be more specific graphs that explicitly show the connection between each sub-category and number of arrests made such as year, neighbourhood, charges and sex. In this small sub-section is shown a small snippet (Table 1) of all the independent variables (year, neighborhood, charges, sex) together with the dependent variable (arrest count). In the discussion section we will take these results and show that arrest count in fact is a dependent variable.

Table 1: Total arrested in Toronto from 2014, 2022 divided by catagory

arrest_year	category	subtype	neighbourhood_158	arrest_count
2019	Other Criminal Code Violations	Other	Dufferin Grove (83)	1
2022	Crimes Against the Person	Assaults	Brookhaven-Amesbury (30)	2
2018	Other Criminal Code Violations	Other	Harbourfront-CityPlace (165)	1
2015	Controlled Drugs and Substances Act	Other	New Toronto (18)	3
2014	Other Criminal Code Violations	Other	Kensington-Chinatown (78)	46
2015	Crimes Against Property	Theft Under \$5000	Wellington Place (164)	2

### 2.3 Year vs Arrest Count

Table 2: Total arrested in Toronto from 2014, 2022 divided by catagory

Year	Arrest Count
2014	80859
2015	71480
2016	72035
2017	71136
2018	68846
2019	66388
2020	53180

Year	Arrest Count
2021	54532
2022	64243

## 2.4 Neighbourhood vs Arrest Count

Table 3: Total arrested in Toronto from 2014, 2022 divided by neighbourhood/ward

Ward	Arrest Count
Agincourt North (129)	2045
Agincourt South-Malvern West (128)	3390
Alderwood (20)	1283
Annex (95)	6322
Avondale (153)	1062
Banbury-Don Mills (42)	2783

## 2.5 Catagory and Subtype Vs Arrest Count

# 3 Result

## 3.1 Crime rates graphed

The aim of this paper is to analyse the arrest count from the year 2014 to 2022 which is why a bar graph was made with the values from the table seen above.

We notice from the graph above that there is a steady decline from 2019 to 2021 until 2022 when it starts to slowly increase again. Notice that in 2014 we start off with a very large arrest count, 80859 arrests made in

Table 4: catagory and Subtype Vs Arrest Count

(a) Category

Category	Arrest Count
Controlled Drugs and Substances Act	22700
Crimes Against Property	112786
Crimes Against the Person	119177
Criminal Code Traffic	10589
Other Criminal Code Violations	107395
Other Federal Statute Violations	28
Total Arrests	230024

(b) Subtype

Subtype	Arrest Count
Assaults	73771
Attempted Murder	497
Break and Enter	8746
Dangerous Driving	1386
Drive While Disqualified	939
Drive While Impaired / Over 80	5672
Fail to Remain	564
Firearm-Related	6785
Fraud	8256
Other	187761
Other Criminal Violations - Offensive Weapons	14612
Refuse Sample	1646
Robbery	8068
Sexual Violations	7146
Theft Over \$5000	1169
Theft Under \$5000	45657
Total Arrests	230024

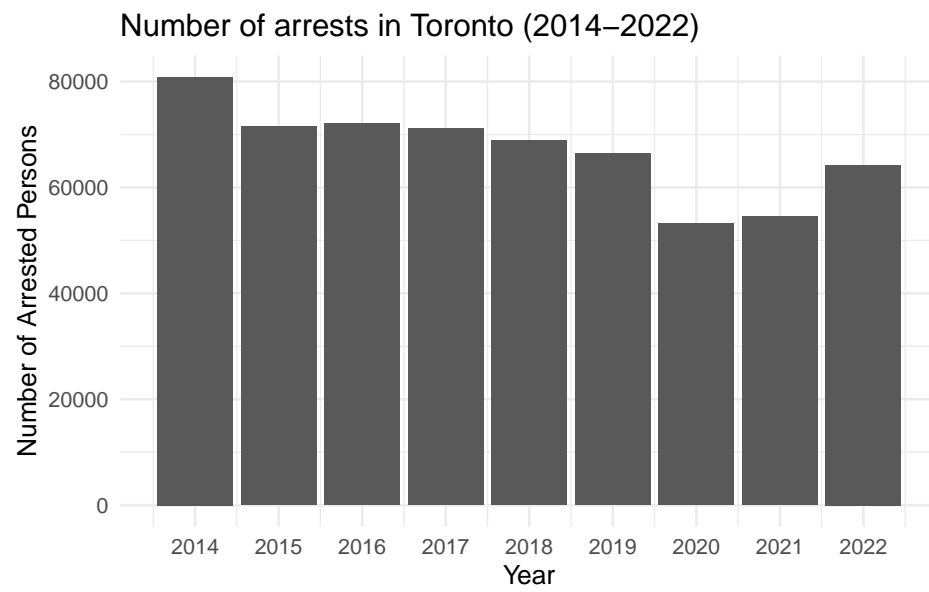


Figure 1: Realting arrest count with arrest



2014. However, the years after ward we decrease to 71480 people arrested and it stays constant for a 3 years until we end up in 2018 and 2019 where it decreases again to make the total number of arrests to approximately, 67000 people. In 2020, the graph shows a local minimum where 53180 people were arrested. After the 2020 mark we see gradual increase in 2021 and 2022 with 54532 and 64243 people being arrested per year respectively.

### 3.2 Quantitative Analysis

We will be taking the average rate of change to calculate the rate of change of crime rates for each year. The units are number of crimes/per year

$$\text{Average Rate of Change} = \frac{(\text{number of arrests in year 2}) - (\text{number of arrests in year 1})}{(\text{year 2}) - (\text{year 1})}$$

With this operation we get the following table:

year	aroc
2014~2015	-9379
2015~2016	555
2016~2017	-899
2017~2018	-2290
2018~2019	-2458
2019~2020	-13208
2020~2021	1352
2021~2022	9711

year	percentage
2014~2015	-11.60
2015~2016	0.78

year	percentage
2016~2017	-1.25
2017~2018	-3.22
2018~2019	-3.57
2019~2020	-19.90
2020~2021	2.54
2021~2022	17.81

We see that the rate of change shows the trend described in previous section. Where the we have a decrease in the number of arrests made in years 2015, 2017, 2018, 2019, 2020. While we have a positive rate of chnage in other years showing that arrest count has increased in those years. We see that there is an 11% decrease in crime form 2014 to 2015 and almost 20% decrease from 2019-2020. The highest increase in crime that is shown is in the years 2021-2022 with a 17.81% increase.

## 4 Discussion/Conclusion

### 4.1 Discussion

First we will analyse the graph. From the graph and table above it can be seen that the number of arrest count starts of very high in 2014. This it relatively stays the same until 2019 and more evidently in 2020 with #. This data reveals that the decrease was coincidentally during covid 19 pandemic. This was time where lock down and staying home was mandatory or strongly advised. This pandemic striked a fear in Torontonians hence people could not leave home. This can be a reason as to why the number was so low. From the rate of change table above we see that the highest rate of change is during the years 2019-2020 where we have a decrease of 13208 arrests that year.

One may also say that the increase in 911 emergency response time may contribute to the statistic above. According to CTV news, Torontonians are not getting the emergency services like security from the Toronto police department in time (Wilson 2023). It is unclear from this data set whether the rise in crime rates influence the response time or if the slow response time results in a higher crime rate as police assistance is not there to deescalate a situation leading to larger charges and more arrests.

Errors and oversights in this test however is that many of the charges were grouped together meaning that the arrest count represents the total number of arrests across all charges. This means subject small charges such as theft and vandalism gets grouped with subjectively bigger crimes such as homicide or illegal drug distribution. Another error is that this data doesn't show whether the charges are true or not. This means at the scene a person could have been charged and arrested but later in trial they see that it was a misunderstanding and the person is innocent (Ontario (2024)). The police still report the arrest but it doesn't increase the crime rate as crime has not been committed in this case. Many of the data sets have theft or property damage as a charge so, this data being inaccurate representation of crime rates in Toronto.

## **4.2 Conclusion**

In conclusion, this data set after cleaned up shows the number of arrests made by police in Toronto from year 2014 to 2022. As arrests are made due to charges being brought on person at a scene of crime, this data set contributes to the analysis of the crime rates in Toronto, if not represent it. They effectively show that current events do infact affect the arrest rates in Toronto however events such as budget increases in 2020 to 2022 did not reduce the rate of crime but increase it(Police (2024)). This was unexpected as the budget presentation highlighted the fact that they had requested more money to hire more officers to keep the city of Toronto

safe. For a future study one that focuses more on district and the different assault charges may be beneficial. The results from said study will help see which neighborhood is relatively safer than the other and what they are doing differently in order to ensure the safety of Torontonians. With continuous increasing population our only solution from this study that effectively worked has been a lock down; neither ideal nor welcome again. This means that budgeting is not the only solution but this problem requires more community-municipality cooperation and involvement.

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