A Decade of Crime in Toronto: Trends, Challenges and Responses (2014-2024)*

Yanfei Huang

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This paper provides an overview of the crime reported in Toronto between years 2014 and 2024. Using data of reported crime collected by opendatatoronto, we analyze the crime type and crime target under different districts of Toronto between 2014 and 2024. Our finding reveals that the crime types shift around time, with a marked rise in property-related crimes within ten years. These insights can help shape a comprehensive understanding of crime dynamics in Toronto during the 2014-2024 period and contribute to discussions on improving public safety and crime prevention strategies.

1 Introduction

Toronto consistently ranks high in studies that examine the safety of cities. For instance, the Queen City was classified as the second safest city in the world in The Economist's Safe Cities Ranking 2021, with Copenhagen, Denmark, coming in first. With the index rating 60 of the world's major cities using 76 safety-related indicators, such as infrastructure, personal security, health, and digital, Toronto came in seventh place worldwide in personal safety. Undoubtedly, the crime rate in general has dropped since 2000, with the 2023 crime rate reaching 25% lower than peak levels in 2003. We may conclude that Toronto has made significant advancements in prioritizing public safety as a primary objective.

However, despite these rankings and numbers, crime rates in Toronto are increasing in 2023, according to major crime indicators statistics tracked by the Toronto Police Service. This increase could be an attribution to a combination of factors related to the covid-19, as the pandemic significantly impacted Toronto's economy, which in turn influenced crime rates.

This made us pose the question, under the big trend of decreasing compared to 2003, how does the crime rate change each year and what crime type has been most commit. What's more,

*Code and data are available at: .

under the big hit of COVID, how did our community safety change. Is our district still safe for living?

To explore this issue, this study leverage the database from City of Toronto's Open Data Portal, which is published by Toronto Police Services. This dataset contains all reported crime offences by reported date aggregated by division. Our analysis focus on the recent decade (2014-2024) and the crimes against property as well as the crime against the person. By dividing the time into first five years (2014-2019), COVID period (2020-2023) and after COVID/ present (2024), we would like to explore how the crime rate has changed during these three time period and what crime has been commit most under three different society situation.

The paper is structured as followed: Section 2 discusses the data and methodologies used in understanding, cleaning and simulating. Section 3 explores the result,followed by discussions of the relationship between the variables of interests. And section 4 explores the broader implications for the trend of Toronto crime.

2 Data

The raw data was sourced from the City of Toronto's Open Data Portal using the `opendatatoronto` (**openDataToronto?**) package. One data sets was downloaded: **Police Annual Statistical Report - Reported Crimes** (**crimedata2024?**). The data, provided in Excel and CSV formats, was cleaned and analyzed using R (R Core Team 2023) programming language. The `readxl` (**readxl?**) package was used for reading Excel files. Other R packages used include `tidyverse` (**tidyverse?**), `styler` (**styler?**), and `dplyr` (**dplyr?**) for creating tables. The `ggplot2` (**ggplot2?**) and `kableExtra` (**kableExtra?**) were used for data visualization and table formatting. The `patchwork` (**patchwork?**) package was used for combining multiple plots, and `sf` (**sf?**) for spatial data analysis.

The data consists of reported crimes that was received by the Toronto Police Service. The year of the report for each of the 16 Toronto divisions given in the DIVISION variable is included in the variable REPORT_YEAR. The SUBTYPE variable identifies the particular crimes committed, whereas the CATEGORY variable separates the reports into "Crimes Against Person" and "Crimes Against Property." The variables COUNT_, which shows the total number of crime reports, and COUNT_CLEARED, which shows the number of reports that have been cleared, are also included in this dataset.

in the cleaned data,

Table 1: Sample of Cleaned Toronto Crime Data

id	REPORT_YEAR	DIVISION	CATEGORY	CRIME_TYPE	COUNT_	COUNT_CLEARED	PERIOD
1	2022	D32	Crimes Against Property	Theft	79	0	COVID Period

id	REPORT_YEAR	DIVISION	CATEGORY	CRIME_TYPE	COUNT_	COUNT_CLEARED	PERIOD
2	2023	D12	Crimes Against Property	Break & Enter	1	0	COVID Period
3	2014	D13	Crimes Against Property	Theft	7	0	2014-2019
4	2021	NSA	Crimes Against the Person	Sexual Violation	1	0	COVID Period
5	2020	D53	Crimes Against Property	Break & Enter	2	0	COVID Period

We simulate data from the Talk more about it.

Talk way more about it.

3 Results

Our results are summarized in **?@tbl-modelresults**.

4 Discussion

4.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

4.2 Second discussion point

4.3 Third discussion point

4.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

References

R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.