Toronto's red light cameras annal change*

Trend of change

Pengyu Sui

January 23, 2024

The number of red light cameras is generally increasing by year, the number of cameras on certain road sections has increased significantly, the number of cameras on some road sections has not changed much.

1 Introduction

The behavior of vehicles running red lights is very common in Toronto, so I counted the changes in the number of red light cameras on various road sections in Toronto over the past 10 years. I wanted to find out the trend of changes, which road sections have a significant increase in cameras and which road sections are not obvious. Therefore, I downloaded data from the Gelfand (2022) and use R (R Core Team 2022) to analyze the data.

Section 2 imports data about Toronto's red light cameras from the opendatatoronto database. And use kable() to create a table. Section 3 uses ggplot2 (Wickham 2016) to create a line chart to analyze the trend of changes in the number of cameras on different roads. Section 2….

2 Data

I summarized the number of red light cameras for three different roads in different years and ues 'kable()' from 'knitr' (Xie 2023) to create Table 1

```
Attaching package: 'kableExtra'
```

*Code and data are available at: https://github.com/simon0202sui/Toronto–red-light-cameras-change.git.

Table 1: red light cameras numbers in toronto

Year	Street	Max Number
2007	Lake Shore Blvd W	0205
2007	Richmond St E	0223
2007	Steeles Ave W	1564
2008	Lake Shore Blvd W	0229
2008	Steeles Ave W	1208
2009	Lake Shore Blvd W	0241
2017	Lake Shore Blvd W	0230
2017	Steeles Ave W	1289
2018	Steeles Ave W	0619
2019	Steeles Ave W	1232
2021	Lake Shore Blvd W	1747
2021	Steeles Ave W	1486
2023	Steeles Ave W	1209

```
The following object is masked from 'package:dplyr':

    group_rows
```

```
# A tibble: 13 x 3
   Year  LINEAR_NAME_FULL_1 Max_Number
   <chr> <chr>              <chr>
 1 2007  Lake Shore Blvd W  0205
 2 2007  Richmond St E      0223
 3 2007  Steeles Ave W      1564
 4 2008  Lake Shore Blvd W  0229
 5 2008  Steeles Ave W      1208
 6 2009  Lake Shore Blvd W  0241
 7 2017  Lake Shore Blvd W  0230
 8 2017  Steeles Ave W      1289
 9 2018  Steeles Ave W      0619
10 2019  Steeles Ave W      1232
11 2021  Lake Shore Blvd W  1747
12 2021  Steeles Ave W      1486
13 2023  Steeles Ave W      1209
```

Refer to (Figure 1) use ggplot2 (Wickham 2016) to create a line graph.

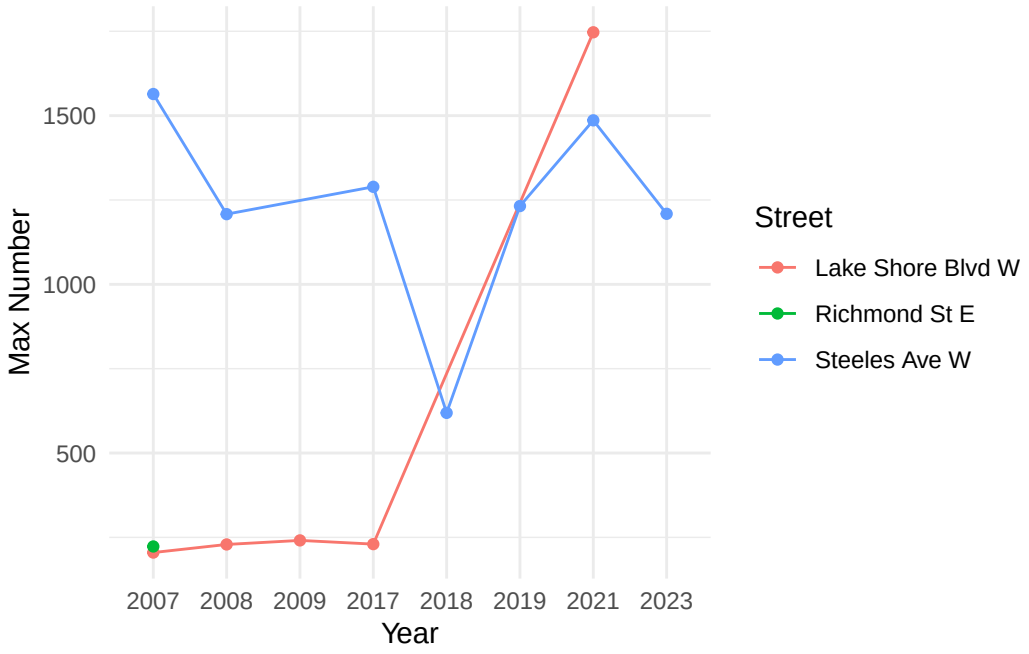

Figure 1: red light cameras annal change

3 Appendix

The process of organizing and simplifying data

References

Gelfand, Sharla. 2022. *Opendatatoronto: Access the City of Toronto Open Data Portal*. https://sharlagelfand.github.io/opendatatoronto/.

R Core Team. 2022. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org.

Xie, Yihui. 2023. *Knitr: A General-Purpose Package for Dynamic Report Generation in r*. https://yihui.org/knitr/.