

Do More Subdivisions in Wards Increase Turnout? An Analysis of the 2022 Toronto Municipal Election*

Inessa De Angelis

June 1, 2023

First sentence. Second sentence. Third sentence. Fourth sentence.

Table of contents

1	Introduction	1
2	Data	2
2.1	Election Voting Locations	2
2.2	Election Voter Statistics	3
3	Results	5
4	Discussion	6
5	Conclusion	6
	References	6

1 Introduction

As mandated by the Government of Ontario, residents of the City of Toronto went to the polls on October 24, 2022 to elect a mayor, councillors, and school board trustees. Then-sitting Mayor, John Tory sought re-election, along with a number of incumbent city councillors.

*Code and data from this analysis are available at: https://github.com/InessaDeAngelis/Toronto_Elections

Coming out of the height of the Covid-19 pandemic, the 2022 election largely upheld the status quo and did not feature ambitious policy platforms. Voter turnout across the city was 29.7% - the lowest in the city’s history since amalgamation in 1997, with turnout ranging on a ward-by-ward basis from 22.1% to 38.5% (Marshall 2023; Warren 2022).

Individual turnout by ward largely depended on local candidates and the accessibility of subdivisions to cast a ballot. The City of Toronto Elections (2023) defines a ward as “a geographical area represented by a member of Council.” Following Premier Doug Ford’s decision in the summer of 2018 to cut down the number of wards in the city to match federal and provincial riding boundaries, there are currently 25 wards in the City of Toronto (Lucas and McGregor 2021). Subdivisions are defined by the City of Toronto (Data 2023) as “... geographical area[s within a ward] designated by the City Clerk.” Previous studies concentrating on large cities in the United States, including Atlanta revealed that having polling locations in close proximity to a voter’s home bolsters turnout and even minor changes in placement of a polling location can have significant impact on a voter’s decision to cast a ballot (Haspel and Knotts 2005). There has been little research into the impact of polling location placement in relation to election turnout, especially in Canadian cities like Toronto and this paper will contribute to the investigation of this phenomenon.

To examine the impact of subdivision placement on voter turnout, this paper is organized into the following sections: Data, Results, Discussion, and Conclusion. In the Data section, I discuss the nature of the spreadsheets obtained through the City of Toronto’s OpenDataToronto Library (Gelfand 2022) and the steps I took to clean and analyze the data. The Results section highlights trends found during the analysis process, while the Discussion section further evaluates the trends and presents insight. Lastly, the Conclusion section summarizes the main findings from this paper.

2 Data

The data utilized throughout this paper was obtained through the City of Toronto’s OpenDataToronto Library (Gelfand 2022). The two different data sets used are: “Elections Voting Locations” (Data 2022) and “Elections - Voter Statistics” (Data 2023). Data was collected and analyzed using the statistical programming software R (R Core Team, 2022), with additional support from `tidyverse` (Wickham et al. 2019), `ggplot2` (Wickham 2016), `dplyr` (Wickham et al. 2023), `readr` (Wickham, Hester, and Bryan 2023), `tibble` (Müller and Wickham 2023), and `janitor` (Firke 2023). A further discussion of the data collection, cleaning, and analysis process can be found later on in this paper.

2.1 Election Voting Locations

This dataset, published by the City Clerk’s Office (Data 2022) highlights all polling locations and subdivisions, on a ward-by-ward basis from the 2022 municipal election. This data was

Table 1: Sample of Cleaned Voting Locations Data

Subdivision	Ward & Subdivision	Address
32	25032	5450 Lawrence Ave E
22	1022	10 Pittsboro Dr
23	1023	155 John Garland Blvd
35	1035	75 Pergola Rd
41	15041	10 William Morgan Dr

last refreshed on November 2, 2022 and captured for this paper on May 21, 2023. The polling locations account for Advance Vote, election day, and Mail In Voting. One subdivision in a ward is equivalent to one polling location, based on geography. In each ward, subdivision 97 accounts for Mail In Voting, while subdivisions 98 and 99 are designated Advance Vote locations. Voters can request a Mail In ballot, go to one of the two Advance Vote locations during the designated days, or vote at their assigned subdivision on election day (for example: Ward 11, Subdivision 11).

2.2 Election Voter Statistics

This dataset, published by the City Clerk’s Office (Data 2023) comprises the number of eligible voters and corrections/additions to the Voter’s List for the 2022 municipal election. The dataset is broken down by ward and voting subdivision, including voting for school board trustees. This data set was last refreshed on February 7, 2023 and captured for this paper on May 21, 2023. This data set outlines the total number of eligible electors in Toronto, by ward, subdivision, and the entire city.

Upon analysis, it was discovered that this data set included columns and data beyond the scope of this paper. I conducted basic cleaning of the data set to simplify column names and eliminate additional information (see Table 2).

For the purpose of this paper, I did not include the Advance Vote and Mail In Voting subdivisions when counting the total number of subdivisions per ward. Firstly, there are only two Advance Vote locations distributed across every ward, meaning residents have to be motivated to travel farther away from their home to cast their ballot. Secondly, Mail In Voting requires applying online through Toronto Elections and then returning the completed Mail In Voting package by dropping it in a Canada Post mailbox or hand delivering it to one of the Toronto Elections drop boxes at select locations. Voters need to be more organized and motivated to vote in advance of election day.

Table 2: Sample of Cleaned Voter Statistics Data

Ward	Sub	Total Eligible Electors	Number Voted	Percent Voted
1	1	1567	275	18%
1	2	1656	355	21%
1	3	1266	232	18%
1	5	2669	284	11%
1	6	1837	268	15%

3 Results

Ward	Sub
1	1
1	2
1	3
1	5
1	6
1	7
1	8
1	9
1	10
1	11
1	12
1	13
1	14
1	15
1	16
1	17
1	18
1	19
1	21
1	22
1	23
1	24
1	25
1	26
1	27
1	28
1	29
1	30
1	31
1	32
1	33
1	34
1	35
1	36
1	37
1	38
1	39
1	40
1	41
1	42
1	47
1	48
1	49
1	51
1	52
1	53

```
total  n
1      60 51
```

4 Discussion

5 Conclusion

References

- Data, Toronto Open. 2022. “Elections Voting Locations, 2022.” <https://open.toronto.ca/dataset/elections-voting-locations/>.
- . 2023. “Elections - Voter Statistics, 2022.” <https://open.toronto.ca/dataset/elections-voter-statistics/>.
- Elections, Toronto. 2023. “Election Dictionary.” <https://www.toronto.ca/city-government/elections/city-elections/education-resources/election-dictionary/>.
- Firke, Sam. 2023. *Janitor: Simple Tools for Examining and Cleaning Dirty Data*. <https://CRAN.R-project.org/package=janitor>.
- Gelfand, Sharla. 2022. *Opendatatoronto: Access the City of Toronto Open Data Portal*. <https://CRAN.R-project.org/package=opendatatoronto>.
- Haspel, Moshe, and H Gibbs Knotts. 2005. “Location, Location, Location: Precinct Placement and the Costs of Voting.” *The Journal of Politics* 67 (2): 560–73.
- Lucas, Jack, and R Michael McGregor. 2021. *Big City Elections in Canada*. University of Toronto Press.
- Marshall, Sean. 2023. “Election: Voter Turnout 2022.” <http://spacing.ca/toronto/2023/03/07/election-voter-turnout-in-2022/>.
- Müller, Kirill, and Hadley Wickham. 2023. *Tibble: Simple Data Frames*. <https://CRAN.R-project.org/package=tibble>.
- Warren, May. 2022. “Toronto 2022 Municipal Election Brings Dismal Voter Turnout.” <https://www.thestar.com/news/gta/2022/10/24/toronto-2022-municipal-election-brings-dismal-voter-turnout.html>.
- Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. <https://ggplot2.tidyverse.org>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Wickham, Hadley, Romain François, Lionel Henry, and Kirill Müller. 2023. *Dplyr: A Grammar of Data Manipulation*. <https://CRAN.R-project.org/package=dplyr>.
- Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2023. *Readr: Read Rectangular Text Data*. <https://CRAN.R-project.org/package=readr>.