Estimation of Voter Turnout by Age Group and Sex at the 2019 General Election

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Summary

Official turnout for the 43rd general election held on October 21, 2019, was 67.0%, 1.3 percentage points lower than the previous general election in 2015 (68.3%) and 8.2 points higher than the all-time low of 58.8% for the 2008 election.

Since 2004, Elections Canada has used a sample of administrative data compiled in the course of administering the election to estimate voter turnout by age group and, since 2008, by sex, at the national, provincial and territorial levels. These administrative data, combined with those from the National Register of Electors, offer a more accurate way of measuring and studying turnout than survey-based studies, which consistently overestimate participation.

Recent legislative amendments to the *Canada Elections Act* required Elections Canada to record electors who voted on polling day on digital supports as well as paper sheets. In previous elections, these data were recorded exclusively on paper sheets and archived at the headquarters of Elections Canada; previous voter turnout studies used sampling techniques to evaluate turnout, since retrieving all relevant data from storage would have been too time-consuming. The use of digital supports in this study resulted in a faster, more accurate estimate of voter turnout by age and sex.

For Canadian federal elections, official voter turnout is calculated as the number of votes cast divided by the number of registered electors. Since registration coverage may vary over time and between different groups of electors, this study uses the estimated number of Canadian citizens of voting age as the denominator instead of the number of registered electors. Using this method, the "adjusted" national turnout figure for 2019 is 67.0%—the highest rate since the 2004 election where these studies first started; it was 66.1% in 2015. All turnout estimates included in this report use the estimated size of the electoral population as the denominator.

In 2019, turnout gradually increased with age, from 53.9% for ages 18–24 to 79.1% for ages 65–74, and then declined to 68.6% for those aged 75 and over. This same general pattern has been seen in every general election since 2004, when these studies began. After seeing a surge up to 57.1% in 2015, participation of voters aged 18–24 decreased by 3.2 points to 53.9% in 2019. Electors eligible to vote for the first time in 2019[1] voted at a rate (53.6%) comparable with those who were eligible to vote for the first time in 2015[2] (54.2%).

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[1] Citizens born between October 20, 1997, and October 21, 2001, were eligible to vote for the first time in the 43rd general election in 2019.

[2] Citizens born between May 3, 1993, and October 19, 1997, were eligible to vote for the first time in the 42nd general election in 2015.

Compared with 2015, the "adjusted" turnout increased by 0.9 percentage points at the national level. This is the highest participation rate observed since Elections Canada began estimating turnout among eligible electors in 2004. This slight increase is basically attributable to an increase in participation of age groups 35–44 (+2.7), 45–54 (+1.5) and over age 75 (+1.2), but attenuated by the decrease in age group 18–24 (-3.2).

Looking at differences between men and women, for the 2019 general election, women participated at a higher rate (68.5%) than men (65.5%), and this was true across all age groups up to age 65, at which point men started participating equally or more than women. This is the same pattern seen in all general elections since 2008.

The pattern of turnout by age is the same as in 2015 in each province and territory, with turnout lowest among those aged 18–24 and then increasing gradually with age up to the 65–74 age group. In most jurisdictions, women voted more than men in all age cohorts except the 75+ cohort, where men voted more than women.

Acknowledgements

Introduction

This report presents estimates of voter turnout by various demographic groups defined by age and sex, at the national, provincial and territorial levels for the 43rd general election, held on October 21, 2019.

The official turnout for the 2019 election was 67.0%. Historically, electoral participation peaked in Canada at 79.4% for the 1958 general election. Throughout the 1960s, turnout remained relatively high, fluctuating between 75% and 79%. The next two decades saw it decline slightly but still ranging from 70% to 75%. In the 1990s, electoral participation began to decline to a historic low of 58.8% in the 2008 general election.

Differences in electoral participation among various demographic groups have been the subject of much academic research and analysis. Most of this research has been based on estimates from surveys, which overestimate voter turnout[3].

According to section 18.1 of the *Canada Elections Act,* "[t]he Chief Electoral Officer may carry out studies on voting, including studies respecting alternative voting processes, and may devise and test an alternative voting process for future use in a general election or a by-election." Since 2004, after each general election, the Chief Electoral Officer has authorized the use of administrative data from the electoral process to produce turnout estimates by age group. This research is free from the social desirability and self-reporting biases that are common in voluntary survey-based studies. In 2008, breakdown by sex was added. Since the 2019 election, turnout estimates are based on electronic data capture of official records, which allows for an increased accuracy when compared to previous elections. Also, electors were given the opportunity to register as a third gender, "Gender X".

For Canadian federal elections, official voter turnout is calculated as the number of votes cast divided by the number of registered electors. Because registration rates vary over time, this measure can be misleading when comparing turnout from two different elections. That is, the differences observed in Figure 1 are partly due to changes in list coverage (the percentage of eligible electors on the list) over time. The list coverage can vary across different segments of the population (such as youth) as well and by region.

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[3] For the effects of social desirability in surveys and the gap between actual and self-reported turnout numbers, see:
Holbrook, Allyson L., and Jon A. Krosnick. "Social Desirability Bias in Voter Turnout Reports: Tests Using the Item Count Technique." *The Public Opinion Quarterly,* vol. 74, no. 1 (2010): 37–67. http://www.jstor.org/stable/40660537.
DeBell, Matthew, Jon A. Krosnick, Katie Gera, David S. Yeager, and Michael P. McDonald. "The Turnout Gap in Surveys: Explanations and Solutions."*Sociological Methods & Research,* vol. 49, no. 4 (November 2020): 1133–62. https://doi.org/10.1177/0049124118769085.

Figure 1: Official Turnout Rates in Canadian General Elections, 1949 to 2019*
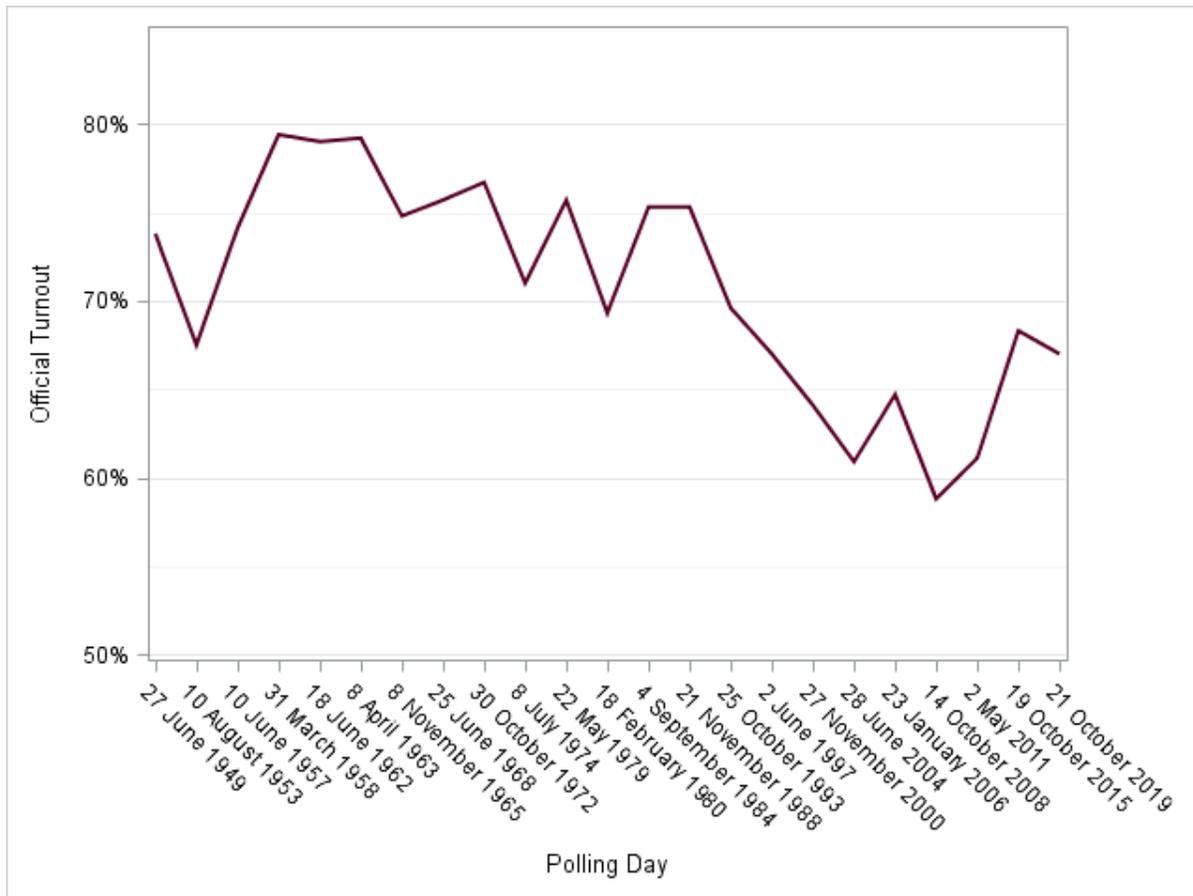
*Official turnout in Canada is based on the count of individuals on the final list of electors.

To overcome these limitations, this study defines turnout as the number of votes cast divided by the estimated number of eligible voters, regardless of their registration status. Because these estimates are generally larger than the number of registered electors, the resulting turnout estimates are typically lower than official turnout figures. Therefore, comparisons over time and between demographic groups reflect only changes in participation, net of any variations in registration rates.

For the purposes of this study, the number of eligible voters was estimated using data from the 2016 Census of the Population and annual demographic changes provided by Statistics Canada. More details on how turnout is defined, the methodology used to determine the size of the electoral population, and the estimation methodology are presented in the Appendix.

Figure 2: Voter Turnout Based on Registered Electors and Eligible Electors in the Population, General Elections 2004 to 2019
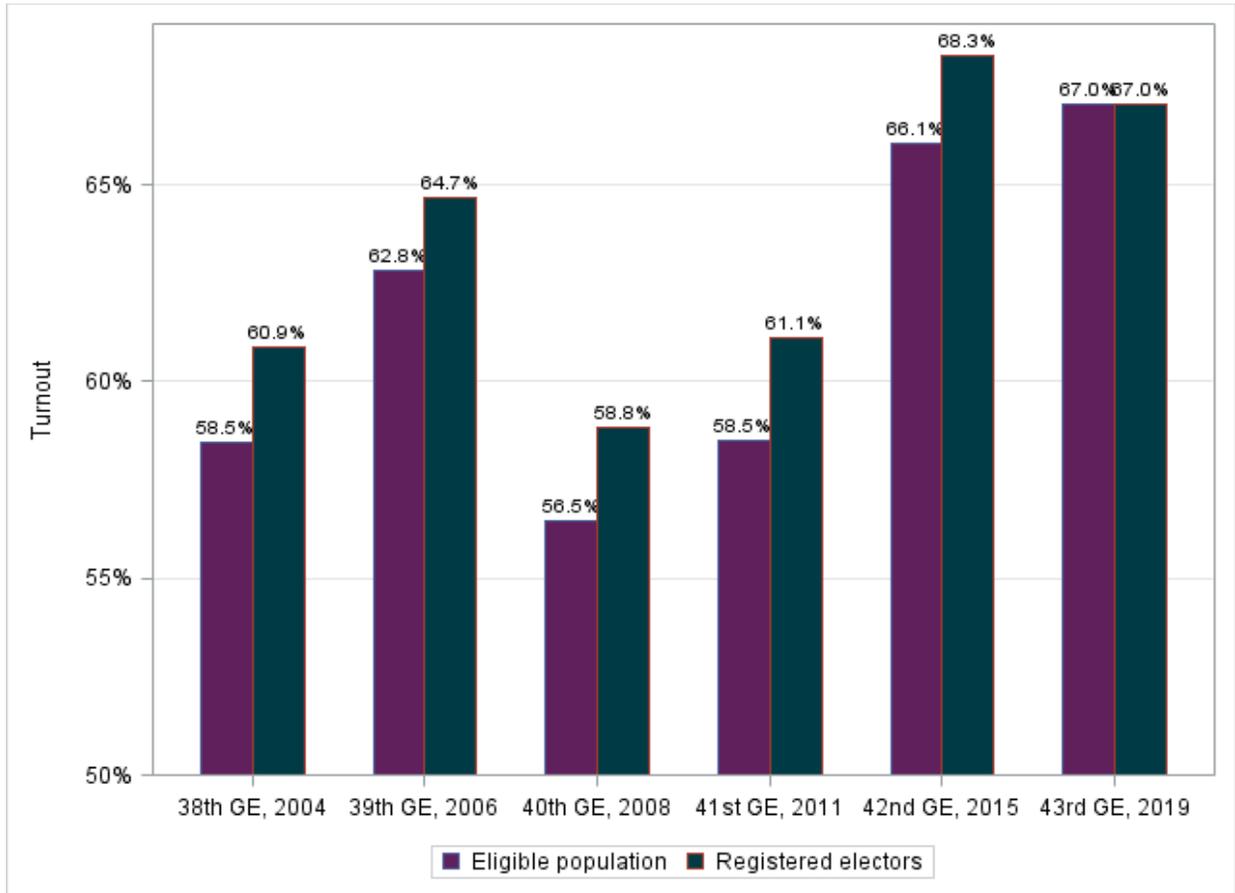
Replacing the number of registered electors with an estimate of the size of the electoral population in the denominator of the turnout measure does not change the observed trend in turnout since 2004, as shown in Figure 2. Using this alternative measure, participation still reached an all-time low in 2008, when 56.5% of the voting population voted. The 2019 election had the highest participation rate among eligible electors (67.0%) observed since 2004 (58.5%), surpassing the 2015 election (66.1%).

It must be noted that in 2019 the official turnout rate and the estimated turnout rate were very close. This is due in part to a higher list coverage, which reached a historical high of 96.9% in 2019, up from 94.5% in 2015.

Figure 3: Counts of Registered Electors and Eligible Electors in the Population, General Elections 2004 to 2019
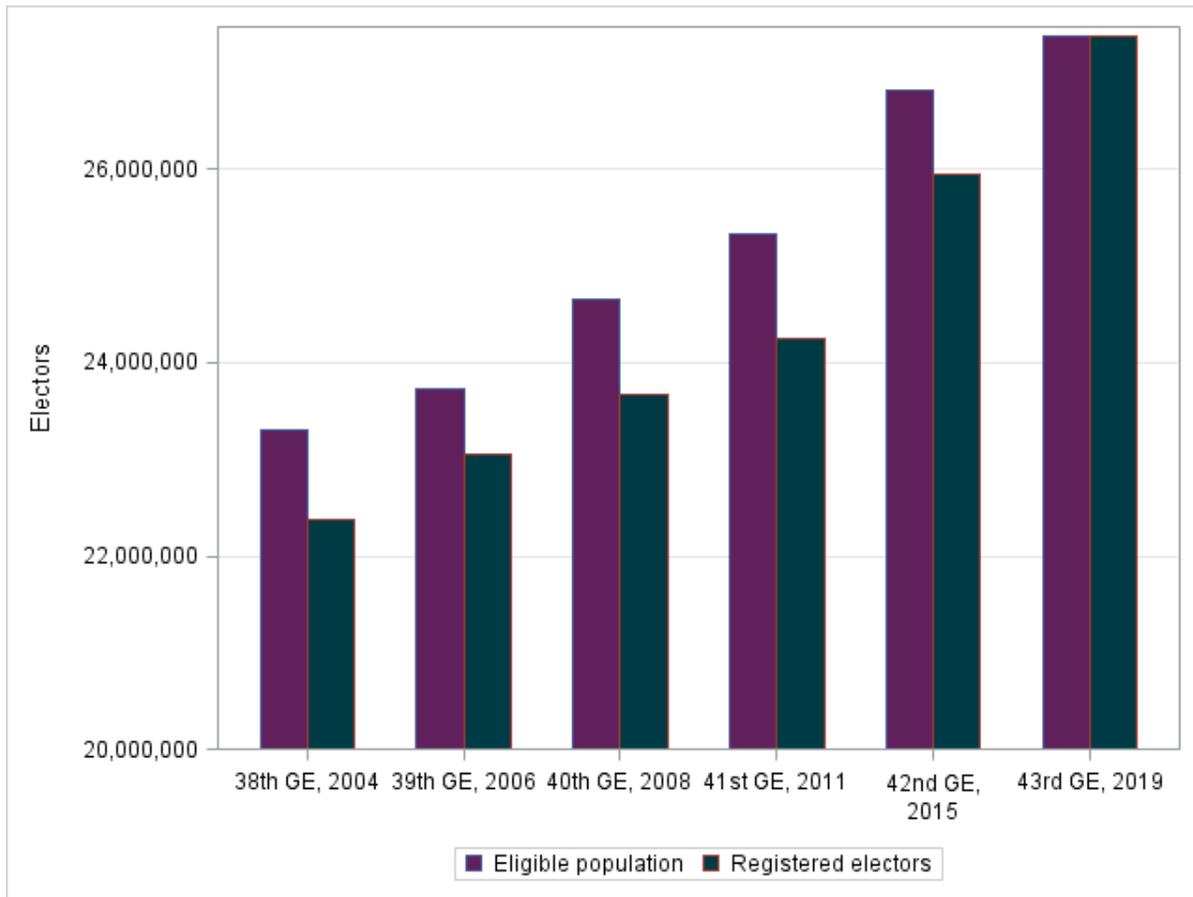
Figure 3 shows the counts of registered and eligible electors for all general elections since 2004. In 2019, the two numbers are very close, again due to a higher coverage achieved by the National Register of Electors.

Figure 4: Age and Sex Structure of the Eligible Electoral Population in 2019
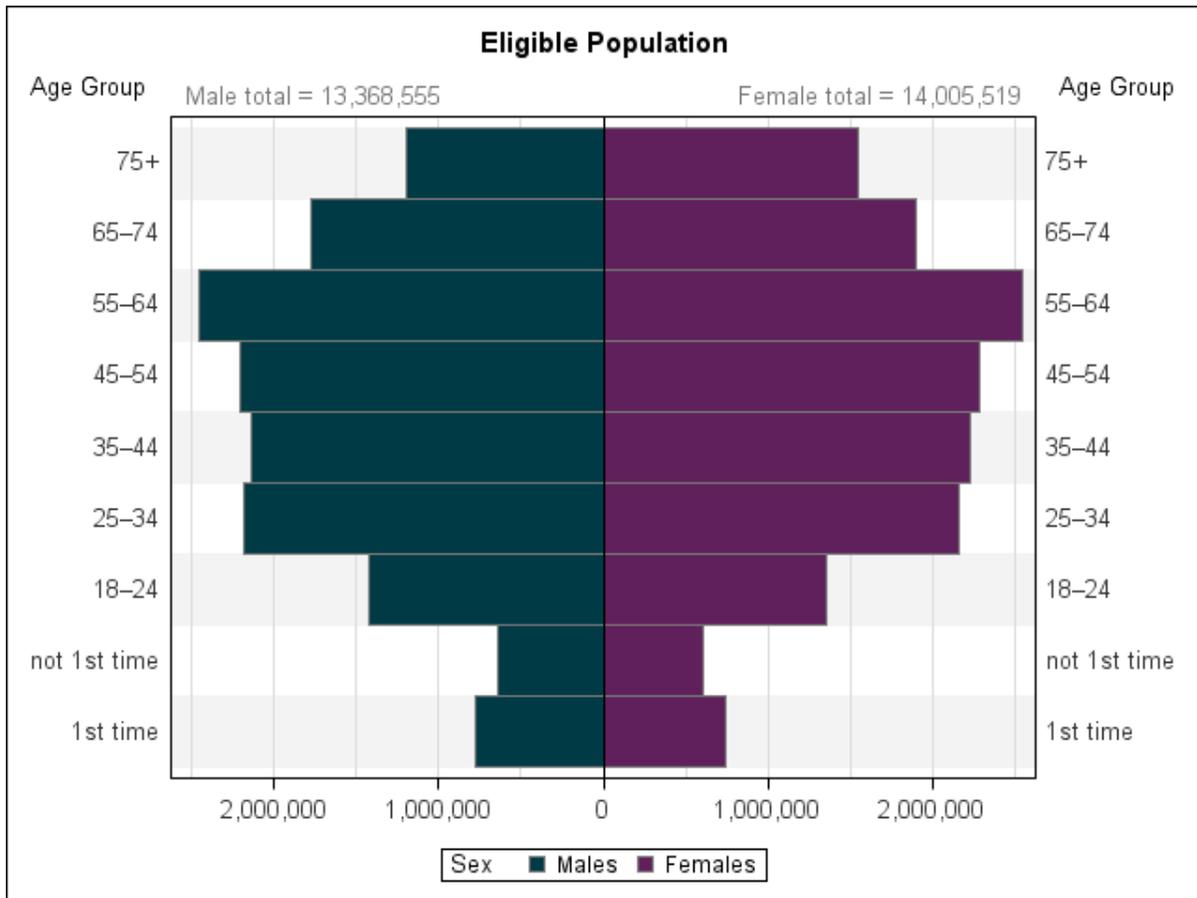
Figure 4 shows the age and sex structure of the eligible electoral population in 2019. The most populous age cohorts for both genders are in the range 55–64. About two thirds of the eligible population is between the ages of 25 and 64; the corresponding age cohorts have the largest impact on the overall national turnout.

Youth turnout slightly decreased after seeing a surge in 2015 and women still voted at higher rates than men

For the 2019 general election, the breakdown of participation by age group is shown in Figure 5.

Turnout gradually increases with age from 53.9% for ages 18–24 to 79.1% for ages 65–74, and then declines to 68.6% for those 75 and older. This same general pattern has been seen in every general election since 2004.

Figure 5: Voter Turnout by Age Group, 2019 General Election
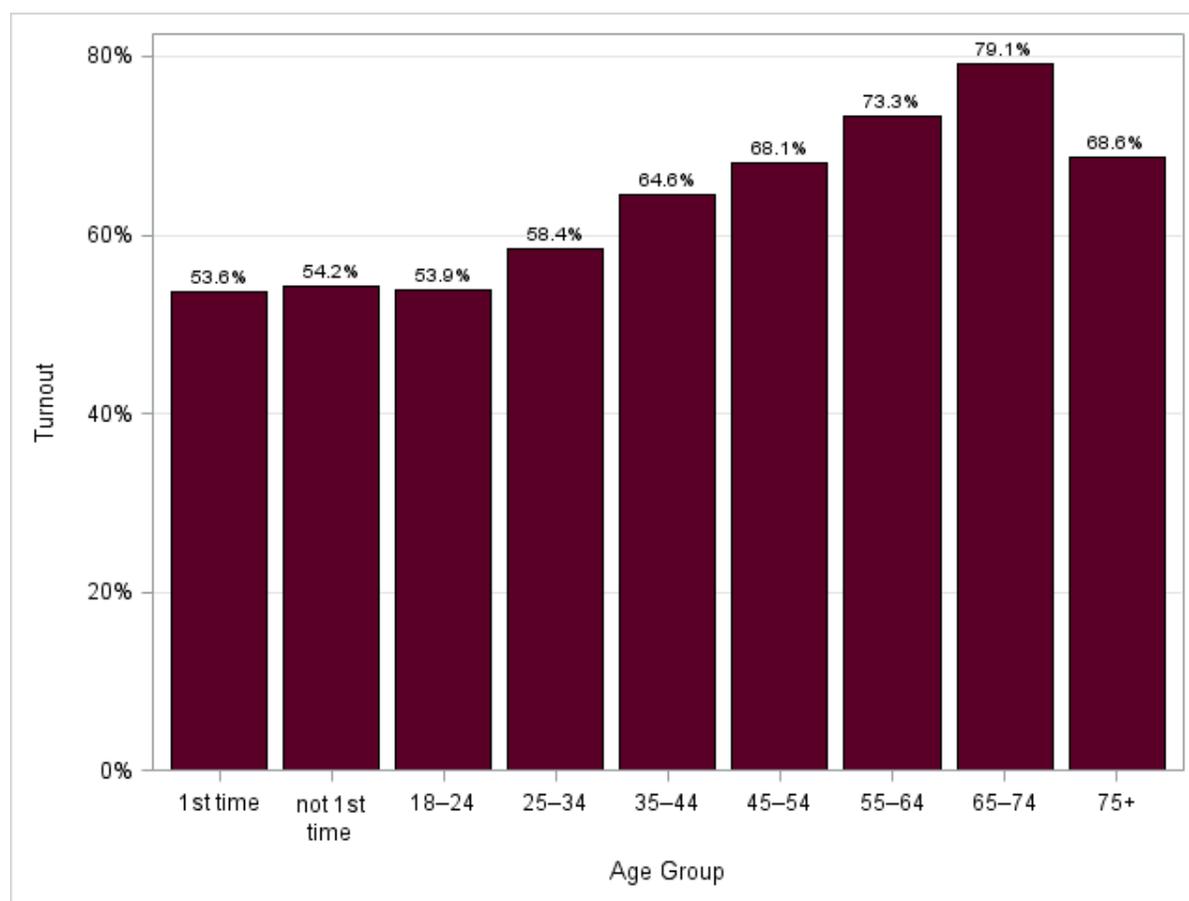
Participation of voters aged 18–24 decreased by 3.2 points to 53.9% after seeing a surge (57.1%) in 2015. In contrast with 2015, among the 18–24 age group, those electors eligible to vote for the first time federally, i.e. those born between October 20, 1997, and October 21, 2001, voted at a comparable rate (53.6%) as those who were previously eligible to vote (54.2%). Voters between the ages of 35 to 44 saw the highest increase in turnout, with an increase of 2.7 points to 64.6% (from 61.9% in 2015), while voters aged 65–74 had the highest overall participation, with a slight increase in turnout to 79.1% (from 78.8% in 2015).

*The figures are not shown here due to space limitations, but can be found on Elections Canada's [website.]

Figure 6 shows how turnout by age group in 2019 compares with the range of turnout rates for all elections since 2004. The grey line indicates the average turnout of elections from 2004 to 2019 (both extremes included). The upward pointing triangle indicates the highest turnout rate for a given age group in the same timeframe; whereas the downward pointing triangle indicates the lowest turnout rate for a given age group. The circle and the numeric label indicate the results for the 43rd general election; when the circle overlaps with a triangle, the result reached a high or low point in the 2004–2019 period.

We can observe that the turnout for the 43rd general election is near the high end of the spectrum for all age groups, reaching the historical maximum for age groups 25–34, 35–44, 65–74 and 75+.

Figure 6: Voter Turnout by Age Group, General Elections 2004 to 2019
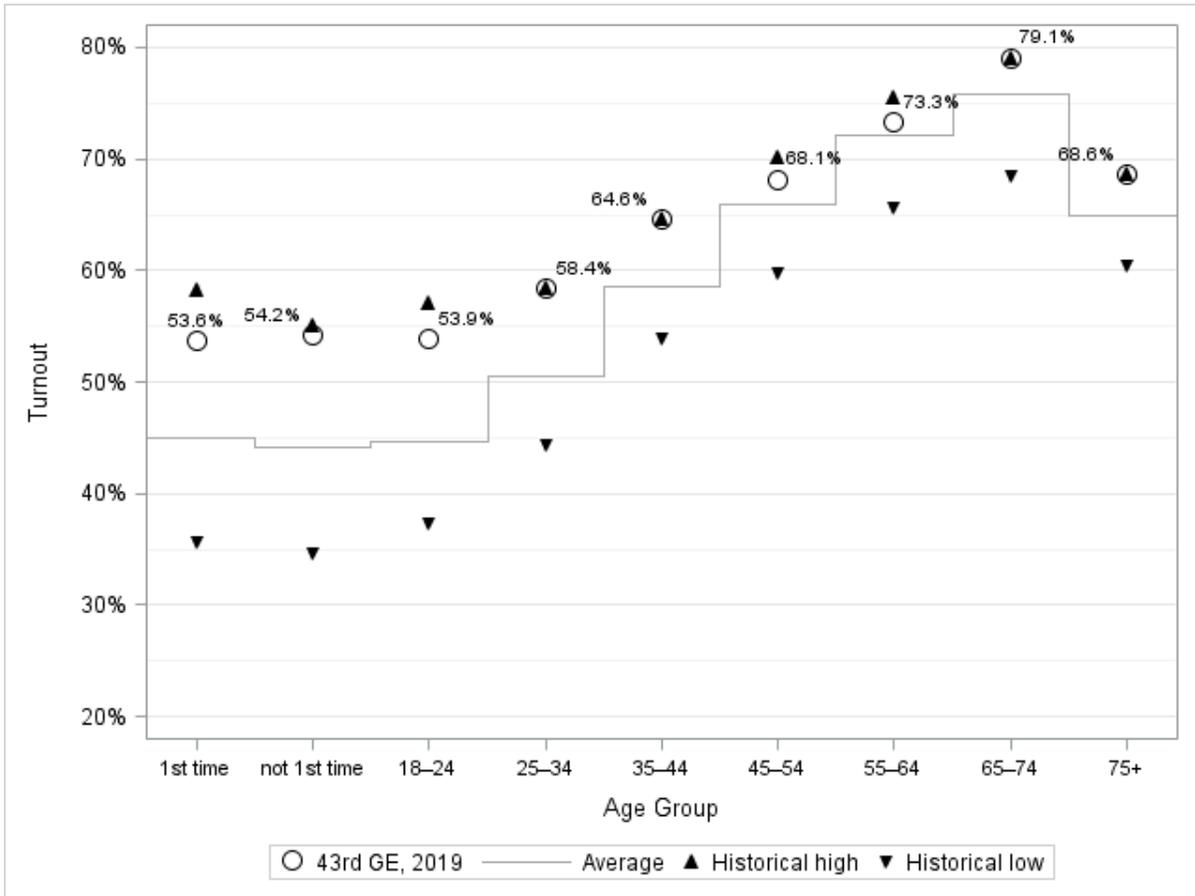
*The "1st time" category includes youth eligible to vote federally for the first time. For the 2019 general election, this includes those born between October 20, 1997, and October 21, 2001. The category "not 1st time" includes those youth under 25 years old who were previously eligible to vote federally. For the 2019 general election, this includes those born between October 22, 1994, and October 19, 1997.

Figure 7 shows turnout rates for the 2019 general election broken down by both age group and sex. The participation rate across all age groups was 65.5% for men and 68.5% for women (see Table 1). Women voted at higher rates than men in all age groups up to age group 65–74, after which the trend reversed.

Figure 7: Voter Turnout by Age Group and Sex, 2019 General Election
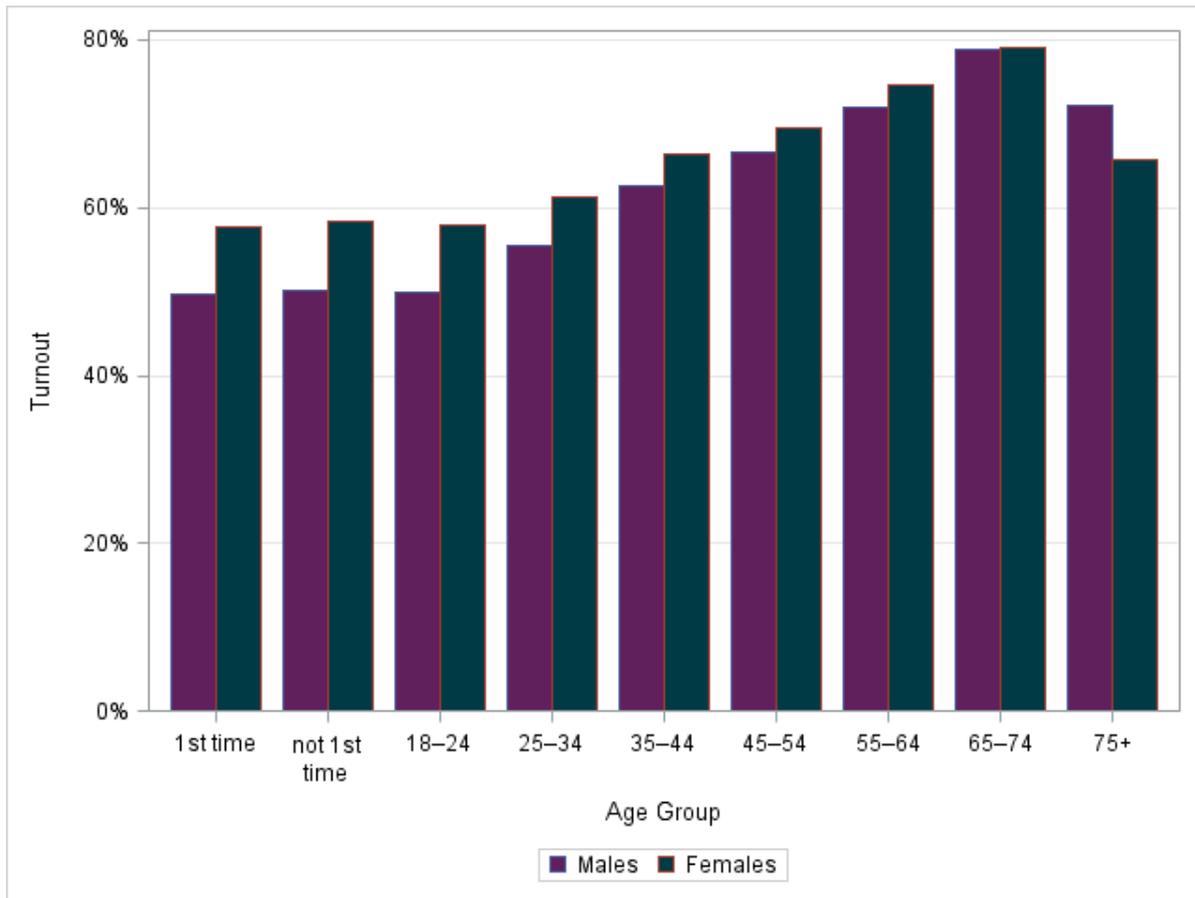
Figures 8 and 9 show how turnout by age group and sex compares with the range of turnout rates for all elections since 2008. The upward pointing triangle indicates the highest turnout rate for a given age group in the same timeframe; whereas the downward pointing triangle indicates the lowest turnout rate for a given age group. The circle and the numeric label indicate the results for the 43rd general election; when the circle overlaps with a triangle, the result reached a high or low point in the 2004–2019 period.

Figure 8: Male Voter Turnout by Age Group, General Elections 2008 to 2019
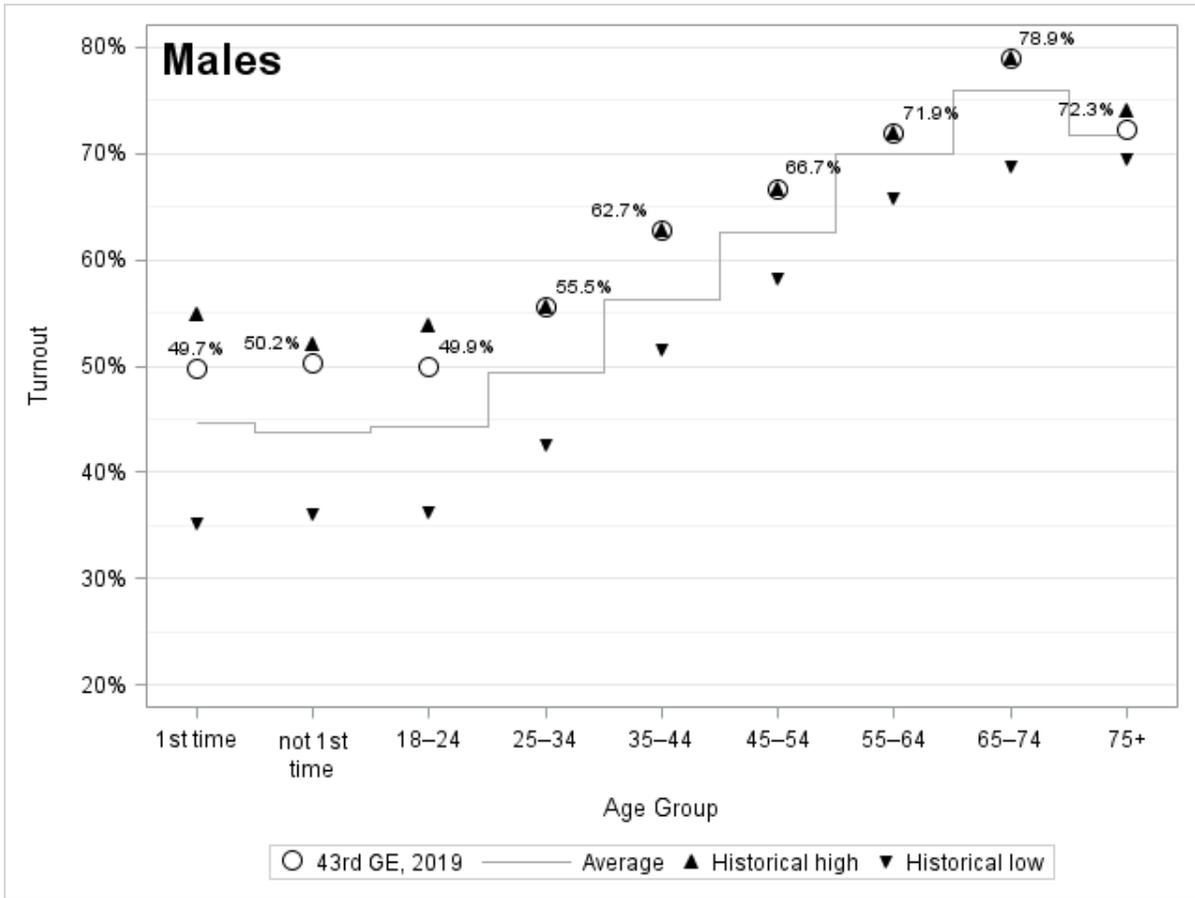
Figure 9: Female Voter Turnout by Age Group, General Elections 2008 to 2019
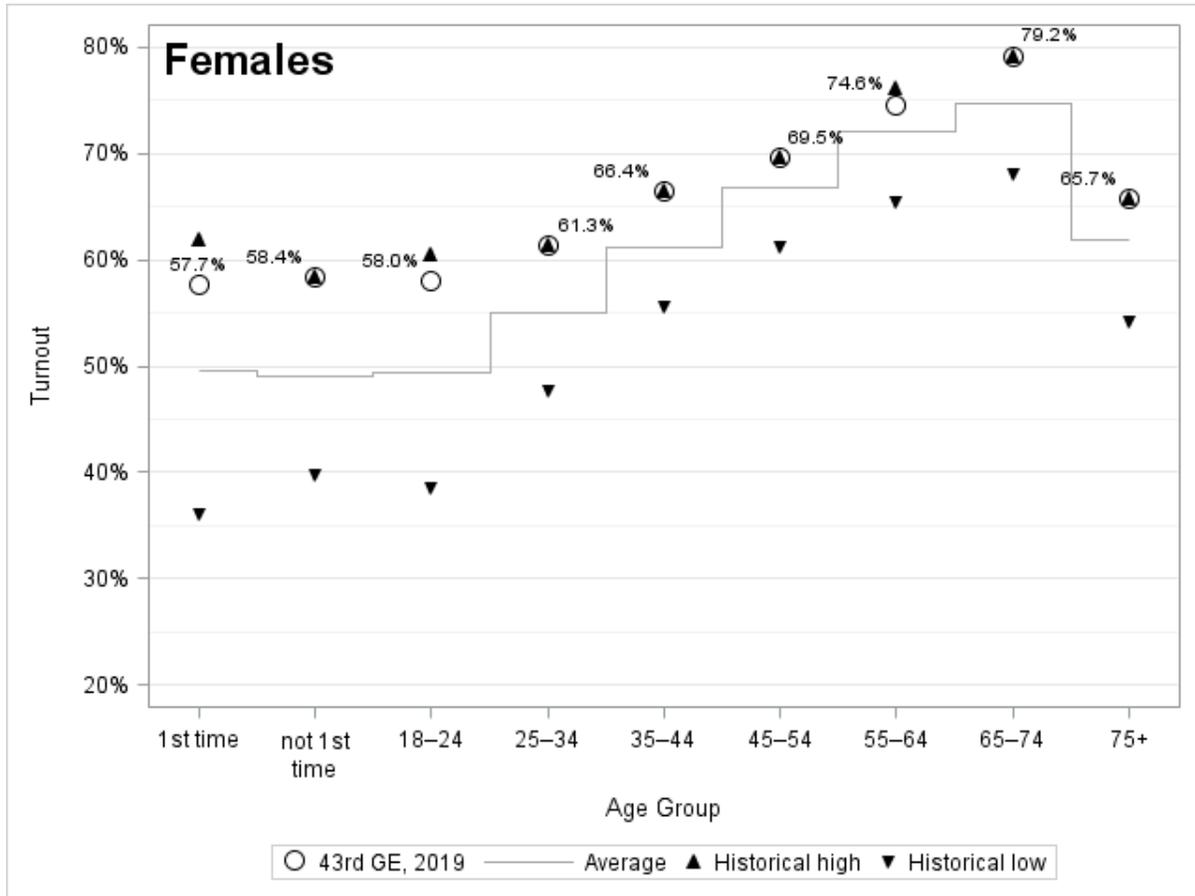
We can observe that the turnout for the 43rd general election is near the high end of the spectrum for all age groups, in some cases reaching the historical maximum, for both males and females.

Prince Edward Island had highest turnout among all provinces and territories

Figure 10 shows how voter turnout by province and territory compares with the range of turnout rates for all elections since 2004. The upward pointing triangle indicates the highest turnout rate for a given province/territory in the same timeframe; whereas the downward pointing triangle indicates the lowest turnout rate. The circle and the numeric label indicate the results for the 43rd general election; when the circle overlaps with a triangle, the result reached a high or low point in the 2004–2019 period.

Prince Edward Island saw the highest turnout at 75.4%, and Nunavut, the lowest at 39.6%, which is the lowest recorded turnout for this territory since 2004. Turnout reached high points in five provinces: Saskatchewan (71.4%), Nova Scotia (71.4%), Alberta (68.6%), Québec (67.8%) and Ontario (66.4%).

Figure 10: Voter Turnout by Province/Territory, General Elections 2004 to 2019

N.L.	58.2%	Sask.	71.4%
P.E.I.	75.4%	Alta.	68.6%
N.S.	71.4%	B.C.	65.5%
N.B.	72.5%	Y.T.	69.5%
Que.	67.8%	N.W.T.	50.5%
Ont.	66.4%	Nvt.	39.6%
Man.	63.6%		

Legend: ○ 43rd GE, 2019 —— Average ▲ Historical high ▼ Historical low
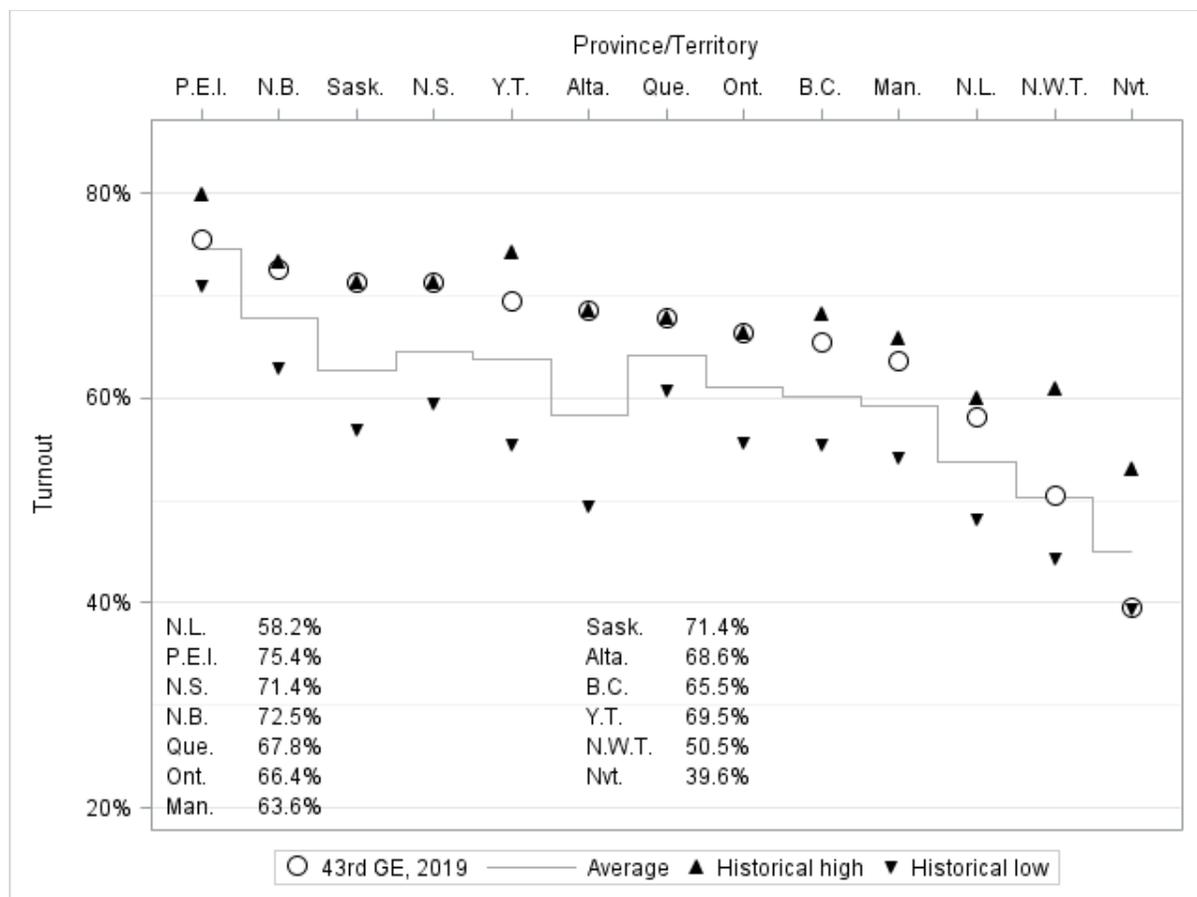
Figure 11 shows how turnout changed within provinces and territories between the general election of 2015 and that of 2019. Turnout reached a high point in three of the four most populous provinces: Ontario, Québec and Alberta. This increase was also reflected in the overall increase at the national level. All provinces and territories, with the exception of Nunavut, registered a higher turnout than their respective 2004–2019 average.

The decrease was particularly significant in Nunavut (-13.4 percentage points) and the Northwest Territories (-10.4 percentage points).

Figure 11: Change in Voter Turnout by Province/Territory between the 2015 and 2019 General Elections

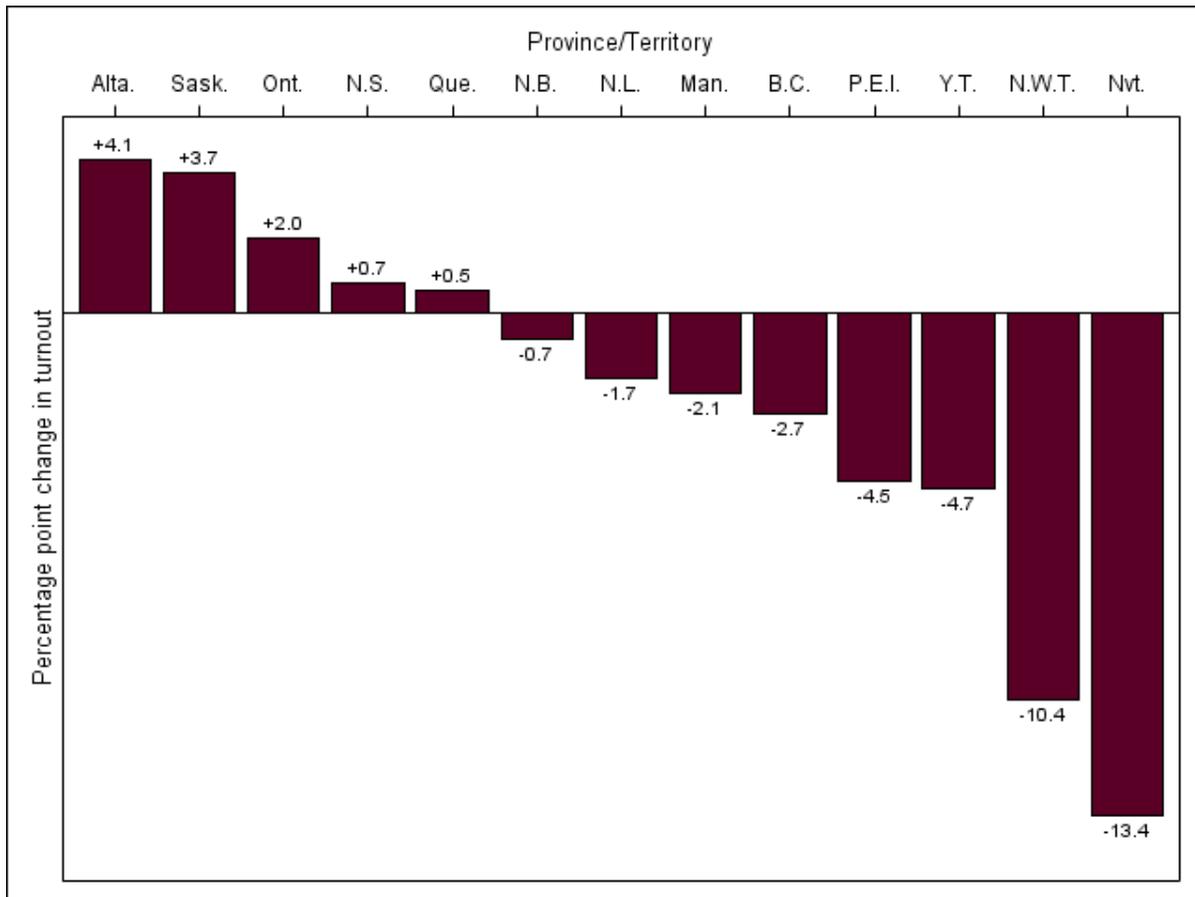| Age and Sex	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
Table 1: Voter Turnout by Province or Territory, Age Group and Sex, 2019 General Election													
1st time*	44.3%	60.4%	60.5%	60.9%	61.6%	58.7%	49.4%	54.0%	55.9%	54.7%	48.8%	26.7%	24.5%
not 1st time*	44.5%	63.7%	61.4%	58.5%	58.4%	58.9%	54.7%	59.2%	59.3%	58.0%	55.0%	33.8%	29.3%
18–24	44.4%	61.9%	60.9%	59.8%	60.1%	58.8%	51.7%	56.3%	57.4%	56.2%	51.6%	29.9%	26.5%
25–34	51.0%	68.7%	66.0%	64.7%	61.2%	60.6%	55.9%	65.4%	64.8%	60.6%	74.1%	50.1%	40.2%
35–44	56.7%	76.1%	70.3%	72.1%	67.1%	65.5%	61.4%	71.7%	68.3%	65.3%	72.4%	54.5%	45.9%
45–54	60.3%	79.3%	73.4%	75.2%	69.7%	69.2%	66.3%	74.9%	72.7%	66.9%	70.7%	58.8%	48.7%
55–64	66.7%	84.3%	80.2%	80.6%	76.2%	73.3%	73.4%	80.9%	76.5%	71.6%	76.0%	59.4%	50.9%
65–74	71.7%	87.1%	84.0%	84.0%	80.9%	78.0%	78.8%	84.5%	79.0%	77.3%	80.1%	64.3%	55.5%
75+	60.2%	76.7%	70.7%	71.6%	65.5%	65.4%	66.8%	72.1%	67.4%	62.8%	70.9%	48.0%	40.3%
Women	**60.4%**	**77.7%**	**73.4%**	**74.1%**	**69.6%**	**67.7%**	**65.0%**	**72.7%**	**69.7%**	**66.6%**	**72.1%**	**52.7%**	**42.3%**
1st time*	35.5%	50.6%	49.7%	51.8%	53.1%	50.0%	42.4%	50.4%	50.3%	47.1%	38.6%	22.5%	16.0%
not 1st time*	38.4%	54.1%	50.7%	50.7%	50.4%	49.9%	47.8%	52.9%	53.7%	49.2%	42.4%	28.1%	24.2%
18–24	36.7%	52.1%	50.2%	51.3%	51.9%	49.9%	44.8%	51.5%	51.8%	48.1%	40.3%	25.2%	19.4%
25–34	43.3%	61.5%	58.1%	58.4%	54.1%	54.7%	51.9%	61.7%	60.5%	54.8%	64.2%	40.0%	30.5%
35–44	51.1%	71.9%	65.1%	68.5%	61.7%	62.0%	58.0%	69.6%	66.0%	62.8%	68.0%	50.8%	40.0%
45–54	53.7%	74.0%	68.8%	71.4%	65.5%	66.8%	63.7%	71.9%	70.6%	65.0%	69.4%	57.3%	44.9%
55–64	61.5%	81.2%	76.4%	77.9%	72.4%	71.3%	70.2%	77.3%	74.2%	69.4%	70.1%	59.2%	49.5%
65–74	69.9%	85.0%	82.5%	83.1%	80.1%	78.3%	78.3%	83.1%	79.2%	77.3%	78.1%	58.7%	59.7%
75+	65.7%	77.0%	75.6%	75.4%	72.3%	72.6%	72.6%	76.2%	73.5%	69.4%	71.0%	48.1%	46.8%
Men	**55.8%**	**73.1%**	**69.1%**	**70.9%**	**66.0%**	**64.9%**	**62.1%**	**70.0%**	**67.5%**	**64.3%**	**66.9%**	**48.4%**	**37.0%**

Canada										
	1st time*	not 1st time*	18–24	25–34	35–44	45–54	55–64	65–74	75+	**All**
Women	57.7%	58.4%	58.0%	61.3%	66.4%	69.5%	74.6%	79.2%	65.7%	**68.5%**
Men	49.7%	50.2%	49.9%	55.5%	62.7%	66.7%	71.9%	78.9%	72.3%	**65.5%**

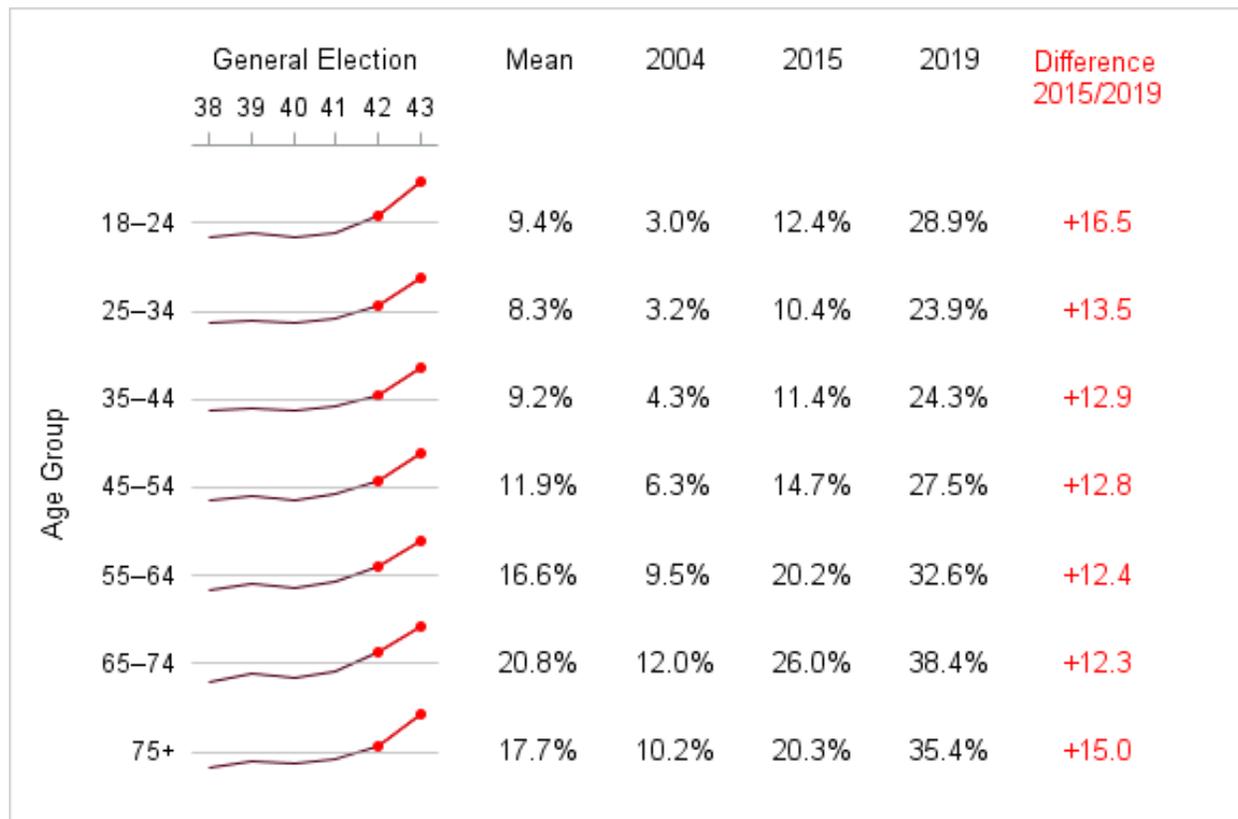*The "1st time" category includes youth eligible to vote federally for the first time. For the 2019 general election, this includes those born between October 20, 1997, and October 21, 2001. The category "not 1st time" includes those youth under 25 years old who were previously eligible to vote federally. For the 2019 general election, this includes those born between October 22, 1994, and October 19, 1997.

Use of alternative voting methods reached highest peak in 2019

More and more Canadians are choosing alternatives to voting on election day, including advance polling, voting at an Elections Canada office or on a post-secondary campus, voting by mail or other special ballot methods. Figure 12 shows the trends in the use of these methods over time among the electoral population, broken down by age group, in the last six general elections. The popularity of these alternative voting methods has soared in the last two elections; it continued and reached the highest peak in the 2019 election.

The proportion of electors using these alternative methods soared to a new all-time high in 2019. In this election, 30.2% of voters used such methods, compared with 16% in 2015. As was seen in previous elections, this proportion also increases with age. In 2019, voters aged 65–74 had the highest proportion (38.4%), followed by those aged 75 and over (35.4%). The strongest increase was for those aged 18–24 (+16.5 points), where the percentage more than doubled once again since 2015.

Figure 12: Use of Advance Polls or Special Ballot by Age Group, 38th to 43rd General Elections

Age Group	General Election 38 39 40 41 42 43	Mean	2004	2015	2019	Difference 2015/2019
18–24		9.4%	3.0%	12.4%	28.9%	+16.5
25–34		8.3%	3.2%	10.4%	23.9%	+13.5
35–44		9.2%	4.3%	11.4%	24.3%	+12.9
45–54		11.9%	6.3%	14.7%	27.5%	+12.8
55–64		16.6%	9.5%	20.2%	32.6%	+12.4
65–74		20.8%	12.0%	26.0%	38.4%	+12.3
75+		17.7%	10.2%	20.3%	35.4%	+15.0

International voters

At the 43rd general election, for the first time in history, Canadians living abroad could vote regardless of how long they have been living abroad as a result of a Supreme Court of Canada decision and of legislative changes. Consequently, the number of registered international voters more than tripled from 15,603 to 55,512. The number of actual voters was 34,144, that is, an official turnout rate of 61.5%

The age and sex of international voters are shown on Figure13. Females up to 44 years of age tend to vote more than males of the same age. Voters without sex data (nine in total) or voters who opted to identify as gender X (54 in total) are excluded from this figure.

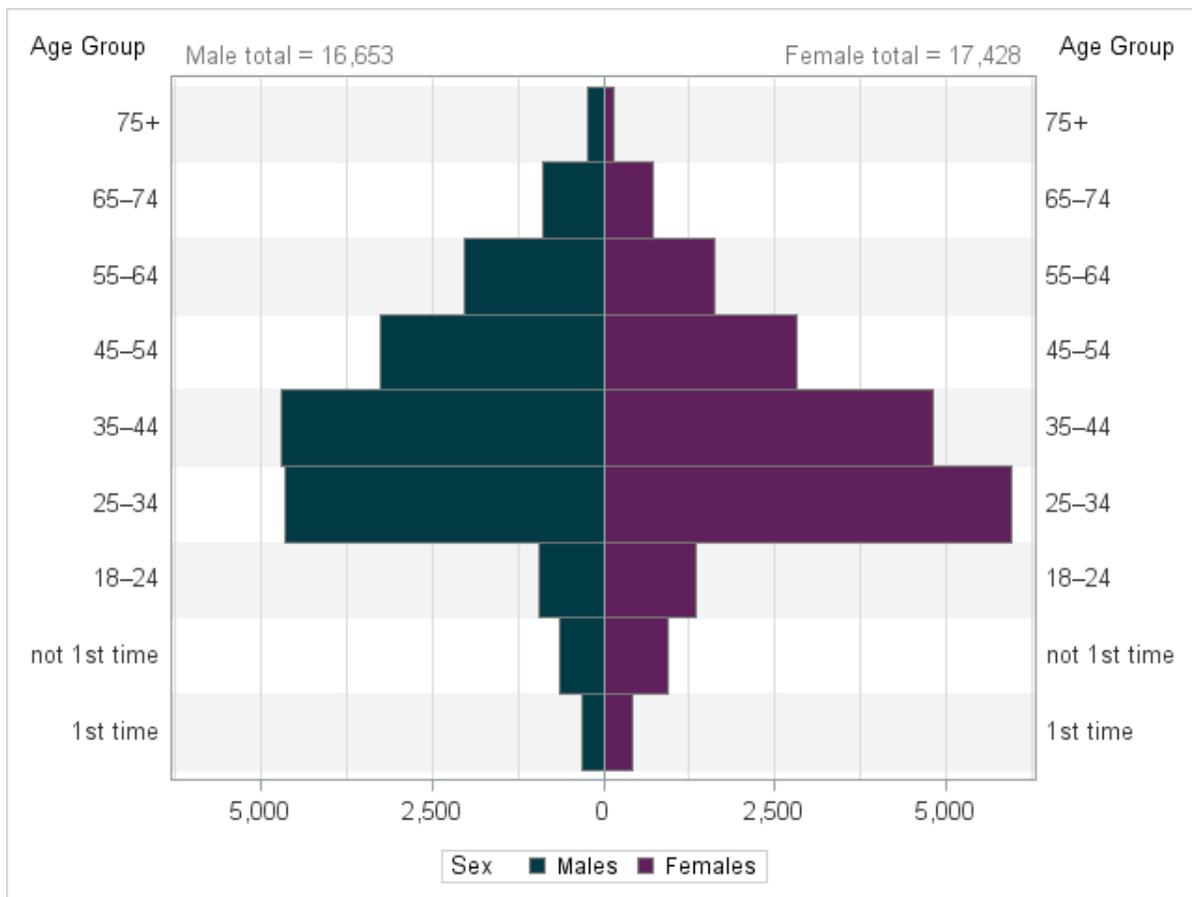**Figure 13: Age Pyramid of International Voters in 2019**

Table 2 shows the location in the world of registered international electors. The majority of registered electors are located in the Americas and Europe.

Table 2: Location of Registered International Electors[4]		
Continent	**Region**	**Electors**
Africa	**Total**	**591**
	Northern Africa	176
	Sub-Saharan Africa	415
Oceania	**Total**	**3,208**
	Australia and New Zealand	3,189
	Melanesia/Micronesia/Polynesia	19
Americas	**Total**	**26,329**
	North America	25,280
	Latin America and the Caribbean	1,049
Asia	**Total**	**8,553**
	Eastern Asia	5,146
	Southern Asia	266
	Southeastern Asia	1,091
	Central Asia	30
	Western Asia	2,020
Europe	**Total**	**16,831**
	Southern Europe	1,076
	Eastern Europe	476
	Northern Europe	8,221
	Western Europe	7,058
Total		**55,512**

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[4] The choice and naming of world regions are in concordance with the United Nations Statistics Division M49 Standard.

Incarcerated population

At the 43rd general election, 16,372 electors assigned to federal and provincial correctional establishments returned a ballot. The incarcerated electoral population on polling day was 41,261, for a turnout of 39.7%.

Figure 14 shows the age pyramid of incarcerated voters. Voters are mostly males aged between 25 and 34; females only account for about 15% of the incarcerated population in Canada.

Figure 14 – Age Pyramid of Incarcerated Voters in 2019
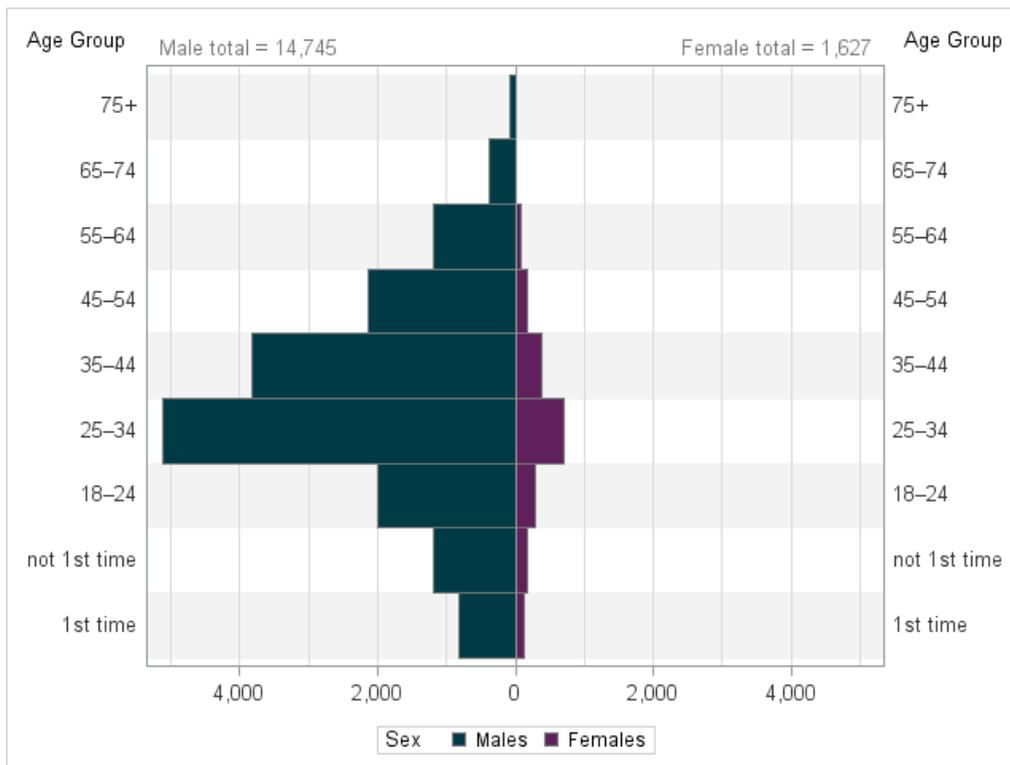
Gender X

In September 2018, the Treasury Board of Canada Secretariat and the Department of Justice Canada presented a report to the Clerk of the Privy Council with recommendations on ways to modernize how the Government of Canada handles information on sex and gender. One of the recommendations was allowing Canadian citizens to identify with a third gender other than "male" or "female", indicated as "gender X." Elections Canada followed the recommendation, so that electors could choose to identify as gender X at registration.

In Canada and abroad, 1,317 Canadians, self-identified as gender X. Given recent implementation and the limited number of individuals, gendered X electors are grouped by broad geographic location and are not broken down by age group; using finer groupings could create disclosure risks. Table 3 below shows the geographic breakdown of gender X electors.

Table 3: Turnout of Gender X Voters by Location		
Region	**Registered Electors**	**Voters**
Maritimes	75	65
Québec	102	98
Ontario	442	390
Prairies	506	420
British Columbia	108	105
Territories[5]	—	—
Abroad	84	54
Total	**1,317**	**1,132**

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[5] Data for the Territories has been removed for reasons of confidentiality.

Conclusion

In 2019, the overall federal voter turnout based on eligible electors increased by 0.9 of a percentage point to 67.0% from 66.1% in 2015. This is the highest participation rate observed since Elections Canada began reporting these turnout rates in 2004.

Participation of voters aged 18–24 decreased by 3.2 percentage points to 53.9% in 2019 after seeing the largest increase for that age group in the 2015 general election (57.1%). In contrast, turnout among other age groups increased: voters between the ages of 35 and 44 saw the highest increase in voter turnout, with an increase of 2.7 percentage points to 64.6% (from 61.9% in 2015), while voters among age group 65–74 had the highest overall participation rate, with a slight increase in turnout to 79.1% (from 78.8% in 2015).

For the 2019 general election, women participated at a higher rate (68.5%) than men (65.5%), and this was true across all age groups up to age 65, at which point men started participating equally or more than women. This is the same pattern seen in all general elections since 2008.

The rising trend of alternative voting methods continued in 2019 with 30.2% of electors who chose to cast a ballot during advance polling days or by special ballot. This proportion was 16% in 2015 and 9% in 2011. As was seen in previous elections, this proportion also increases with age. In 2019, voters aged 65–74 had the highest proportion (38.4%), and the strongest increase was for those aged 18–24 (+16.5%). Use of advance polls or special ballots reached the highest peak in 2019 for all age groups since the 2004 election.

Appendix: Methodology

The purpose of this study is to estimate voter turnout rates for several different demographic groups of interest defined by age and sex at the national, provincial and territorial levels.

Definition of turnout

The official turnout results published by Canada's Chief Electoral Officer are calculated using the number of registered electors in the denominator instead of the size of the electoral population. However, the coverage of the electors list (that is, the percentage of eligible electors listed) changes over time, depending, among other things, on many factors related to list maintenance activities. If turnout is calculated relative to the number of electors on the list, then measures of change in turnout over time will be confounded by these other factors. This problem is exacerbated when turnout is broken down by age, since the changes in coverage over time may be quite different for different age groups. For example, an apparent decrease in youth turnout may be partly due to Elections Canada's efforts to increase coverage of youth on the list. For this study, turnout is defined as the number of ballots cast divided by the number of eligible electors. This denominator is calculated by adjusting population estimates obtained from Statistics Canada to include only citizens 18 years of age or over as of polling day (October 21, 2019). In order to get the numerator, we need to know how many people cast a ballot and what group they fall into. Ultimately, the numerator is obtained by adding this estimate to the known numbers of ballots cast by members of the different groups, whether at advance polls, by special ballot or by persons registering when they voted on polling day. Until 2015, a random sample of electors was used to produce an estimate of the numerator for each demographic group of interest. Since the 43rd general election, lists of voters are recorded on digital support at the end of election day, resulting in a faster, more accurate estimate of voter turnout for the entire country.

Electoral population

The size of the electoral population within a demographic group of interest is required for the denominator of the turnout estimates. This was based on Statistics Canada's 2016 Census, with adjustments made to remove non-citizens and those under 18 years of age, who are not eligible to vote, and to take into account population growth during the time elapsed between census day and polling day, using demographic information provided by Statistics Canada and Immigration, Refugees and Citizenship Canada. The electoral population estimates were also adjusted to account for the net number of citizens missed in the 2016 Census.

For the purposes of this study, age as of polling day was divided into eight groups, consistent with previous studies. These groups were defined as follows:

	Date of birth	
Age group	From	To
1st time*	20 October 1997	21 October 2001
not 1st time*	22 October 1994	19 October 1997
25–34	22 October 1984	21 October 1994
35–44	22 October 1974	21 October 1984
45–54	22 October 1964	21 October 1974
55–64	22 October 1954	21 October 1964
65–74	22 October 1944	21 October 1954
75+	2 January 1900	21 October 1944

*Youth aged 18–24 were split into two groups: those who were eligible to vote for the first time in the 2019 general election (youth born between October 20, 1997, and October 21, 2001) and those who were eligible to vote in the 2015 general election (youth born between October 22, 1994, and October 19, 1997).

Data collection, processing and quality

Elections Canada maintains the National Register of Electors, a database of Canadians who are 18 years or older. The Register is regularly updated between and during elections, using data received directly from electors, administrative data received through agreements with federal, provincial, and territorial agencies, and data received from other sources, in accordance with the *Canada Elections Act.* This administrative data contains the address, date of birth and sex for everyone on the final voters list. They do not indicate which electors cast ballots, except in special circumstances. The administrative data from the elections, however, can be used to identify all those who voted at advance polls, by special ballot, or who registered to vote on polling day. For those who voted on polling day but were registered earlier, the information required was only available on the strike lists and sequence number (bingo) sheets used to administer the election.

Prior to the 2019 general election, a sample of polling divisions was used to retrieve strike lists and count the number of voters, since it would have been very difficult to collect all data in paper form. Changes to the *Canada Elections Act* under Bill C-76 required Elections Canada to prepare a compilation of all data of electors who voted and make them available to political parties and candidates in electronic format. As a consequence, during the 43rd general election, for the first time, voters' information was collected electronically and allowed Elections Canada to use a complete and consistent set of data to produce these estimates without having to resort to sampling, thus greatly improving the accuracy of the estimates.

In previous elections, because estimates were produced by means of a random sample, turnout rates were subject to sampling errors, and confidence intervals were calculated to show the accuracy of estimates and to measure sampling errors. Other errors can still exist that cannot be attributed to sampling variations. These are errors that can occur at the stage of data collection and processing. Data collection at Elections Canada relies on human input, be it an elector filling a form with his/her biographical information, or a worker entering the vote status on a spreadsheet. Even though Elections Canada has put in place procedures to minimize them, errors can still be found. Users should be aware of the types of errors that can occur, so they can assess the adequacy of the data for their own purposes.

Typical errors impacting the turnout analysis include:

- Missing or erroneous voter information (sex, date of birth)

- Missing or erroneous strike list information (misplaced sheets, data capture errors)

- Errors introduced during imputation to replace missing or invalid data

- Errors in estimating the electoral population

Estimation

In each polling division, the number of voters for each sex and age group is obtained by adding up the individual voters. The sum of the initial estimates gives the estimate at the electoral district level. The estimate at the provincial or territorial level is obtained by adding the estimates of the districts belonging to a given province or territory. Finally, the sum of the provincial and territorial estimates is used to determine the national estimate.

Voter counts are tallied from the Final List of Electors and the National Register of Electors; these contain the date of birth and sex of individual electors and are used when estimating voter turnout by age and sex. The Final List of Electors and the National Register of Electors collect data from different sources:

- advance voters are collected by poll workers at the poll site. These data are then digitized and early voters are struck from electoral lists come election day, to avoid double voting;

- special voters (incarcerated voters, international voters, voters in the Canadian Armed Forces, and mail-in ballots) are collected at the offices of returning officers or other Elections Canada service points; these voters are struck from the list to avoid double voting;

- polling day registrations and sequence numbers of electors who voted on election day were manually recorded on forms by poll workers in each polling station; these forms were sent to the returning office for data capture in each of the 338 returning offices and the data transferred onto the Final List of Electors.

There is no fully automated and digitized procedure to collect data; all data sources require one or more manual data entry processes. Data entry and data capture errors, misplaced or missing documents, however rare, do exist. Therefore, estimates of the number of voters computed from the Final List of Electors and the National Register of Electors are not entirely consistent in general with the totals derived from the official voting results. Voter estimates are thus adjusted to the official voting results, broken down by age and sex group, and the results are divided by the corresponding group of the electoral population to determine voter turnout by age and sex.