



Working Paper Series

**Estimation of Voter Turnout
by Age Group and Gender at the
2011 Federal General Election**

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Summary

Official turnout for the 41st federal general election held on May 2, 2011 was 61.1%, 2.3 percentage points higher than the all-time low of 58.8% for 2008. The participation in 2011 is comparable to the turnout seen in other elections since 2000, but much lower than participation prior to 1993, when turnout typically varied between 70% and 80%.

Based on a methodology first used in 2004, Elections Canada drew upon administrative data to estimate voter turnout by age and gender at the national, provincial, and territorial levels for the 2011 election. Administrative data from the electoral process provide a more accurate measure of voter turnout than survey-based studies, which consistently overestimate participation.

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 over the voting age as the denominator instead of the number of registered electors. Using this method, the “adjusted” national turnout figure for 2011 is 58.5%¹. All turnout estimates included in this report use the estimated size of the electoral population as the denominator.

Turnout steadily increased with age from 38.8% for ages 18–24 to 75.1% for ages 65–74 and then declined to 60.3% for those 75 and older. This same general pattern has been seen in every general election since 2004, when these studies began.

The youngest age group can be further broken down by whether they were eligible to vote in the previous general election or not. For 2011, those eligible to vote for the first time federally includes those born between October 15, 1990 and May 2, 1993. These youth voted at slightly higher rates (40.5%) than those youth that were previously eligible (37.8%).

When compared to 2008, turnout in 2011 increased by two percentage points nationally. This change is driven by increases of 4.9 percentage points among youth eligible to vote federally for the first time, 4.8 among those aged 45–54, 5.9 among those aged 55–64 and 6.7 among those aged 65–74, the only statistically significant differences.

Looking at differences between men and women, for the 2011 general election women participated at a higher rate (59.6%) than men (57.3%), and this was true across all age groups up to age 64, where men started participating more than women. This is the same pattern seen in the previous election in 2008.

¹ The estimates of voter turnout by age group have margins of error between 1 and 2 percentage points at the Canada level and between 3 and 9 percentage points at the provincial or territorial level, for almost all age groups. Actual participation rates should be within the associated margin of error for the estimates 19 times out of 20. Throughout this document, a difference is said to be statistically significant at the 5% error level if the estimated difference is larger than the associated margin of error.

The pattern of turnout by age is the same in each province and territory, with turnout lowest among 18- to 24-year-olds and then increasing steadily with age up to the 65–74 age group. Women tended to vote more than men up to the 55–64 age group in most jurisdictions, after which the situation reversed.

The use of alternative voting methods, advance polls or special ballots, tends to increase with age. In 2011, 5% of the youngest age groups voted using alternative methods, increasing up to 17% for those aged 65–74. Use of advance polls was higher in 2011 than for each of the three previous elections in each age group.

Acknowledgements

The current study is the result of the involvement of several sectors at Elections Canada. The report was prepared by Clayton Block, Daniel Larrivée, and Stephen Warner. Charlie Arcaro and Pierre Parent aided in the sample design and estimation.

We would like to thank Sylvie Jacmain who oversaw the collection and capture of data from the selected lists of electors, and Jean-Sébastien Bargiel, Pascal Barrette, Neil Burron, Angelo Elias, Miriam Lapp and Alain Pelletier for their comments on previous versions of the report.

The methodology of this study has also improved over time, thanks to enlightening comments provided in 2006 by academics André Blais, Lawrence LeDuc, Henry Milner and Jon H. Pammett and in 2008 by Pierre Daoust from Statistics Canada.

Introduction

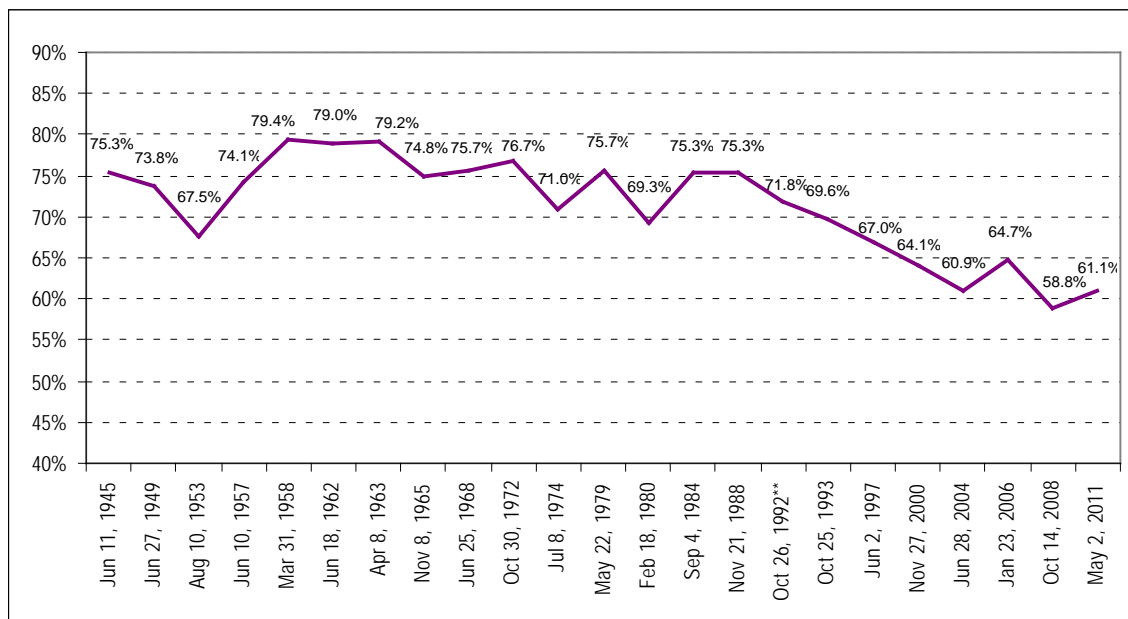
This report presents estimates of voter turnout by various demographic groups defined by age and gender, at the national and provincial or territorial levels for the 41st federal general election, held on May 2, 2011. Comparisons with results from previous federal general elections are made where appropriate. Tables of the estimates presented here, along with their associated statistical margins of error, are provided on Elections Canada's website at www.elections.ca/res/rec/part/estim.

Official turnout for the 2011 election was 61.1%. 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 turnout decline slightly, but still ranging from 70% to 75%. In the 1990s, electoral participation began a steady plunge to about 61% in 2004. Since then, it appears to have levelled off, fluctuating between 60% and 65%, only dipping below 60% for the 2008 general election.

The decline in electoral participation has been the subject of much academic research and analysis. Most of this research has been based on estimates from surveys, which consistently overestimate participation rates.²

Canada’s Chief Electoral Officer has the mandate to make the electoral process better known to Canadians, particularly those who might experience difficulty exercising their right to vote. To this end, Elections Canada conducts its own research on electoral participation. Following each general election since 2004, the Chief Electoral Officer has authorized the use of administrative data from the electoral process to produce estimates of turnout rates by age group. These studies are free from the bias inherent in survey-based studies. Since 2008, breakdowns by gender have also been included.

Figure 1: Official Turnout Rate in Canadian Federal General Elections, 1945 to 2011*



*Official turnout in Canada is based on the number of electors on the final list of electors.

**Referendum on the Charlottetown Accord proposing constitutional changes.

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 over time. Registration rates can also vary across various segments of the population such as youth, and by region. For this reason, turnout rates based on the

¹ Surveys tend to over-report voting for at least two reasons. There is a selection bias because those who agree to participate in surveys also tend to be more likely to vote. There is also a response bias because some survey respondents will not admit they did not vote, because voting is viewed as socially desirable. See André Blais et al. 2002. *Anatomy of a Liberal Victory: Making Sense of the 2000 Canadian Election*. Peterborough: Broadview Press, p. 61.

number of registered electors should not be used when making comparisons between demographic groups based on these factors.

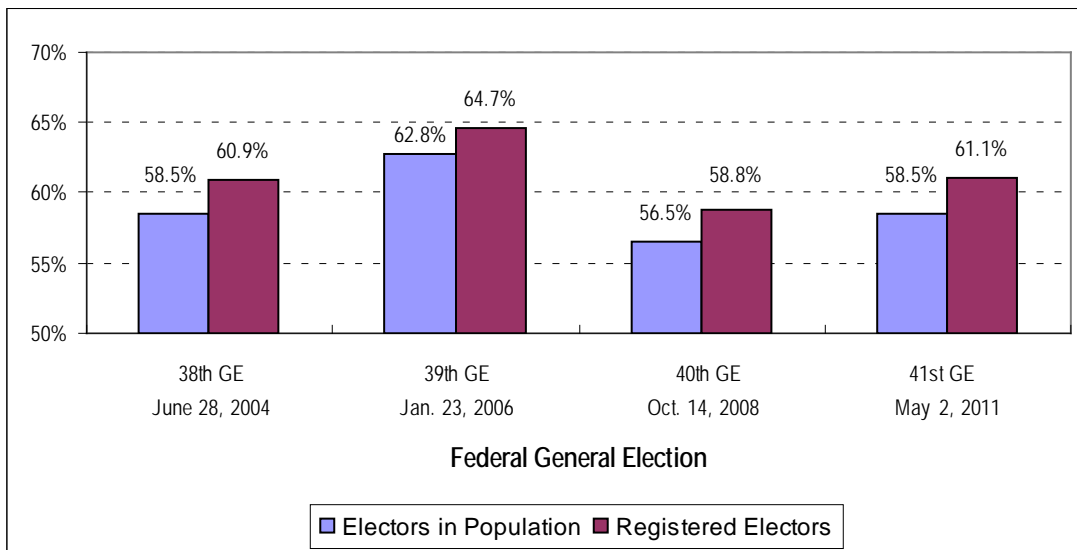
To overcome these limitations, this study defines turnout as the number of votes cast divided by the estimated number of eligible voters, regardless of their registration status. Because these estimates are generally larger than the number of registered electors, the resulting turnout estimates are typically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

The required population estimates were obtained through adjustment of population estimates from Statistics Canada. More details on how turnout is defined, the methodology used to estimate the size of the electoral population, and the methodology used to collect and analyse the data is presented in the Appendix.

National Turnout Estimates

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, where 56.5% of the voting population voted. The 2011 election saw a return to 58.5%, the same level as in 2004.

Figure 2: Estimates of Voter Turnout based on Registered Electors and Electors in Population, Federal General Elections 2004 to 2011



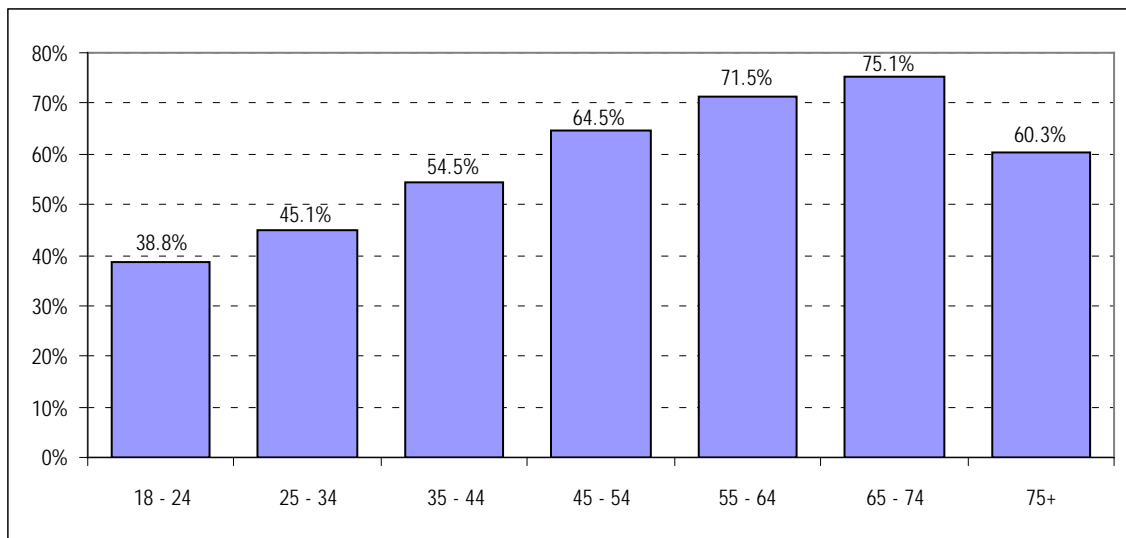
National Turnout Estimates by Age and Gender

For 2011, the breakdown of participation by age group is shown in Figure 3. Turnout steadily increased with age from 38.8% for ages 18–24 to 75% for ages 65–74 and then declined to 60% for those 75 and older³. This same general pattern has been seen in every general election since 2004, when these studies began.

The youngest age group can be further broken down by whether they were eligible to vote in the previous general election or not. For 2011, those eligible to vote for the first time federally includes those born between October 15, 1990 and May 2, 1993. These youth voted at slightly higher rates (40.5%) than those youth that were previously eligible (37.8%).

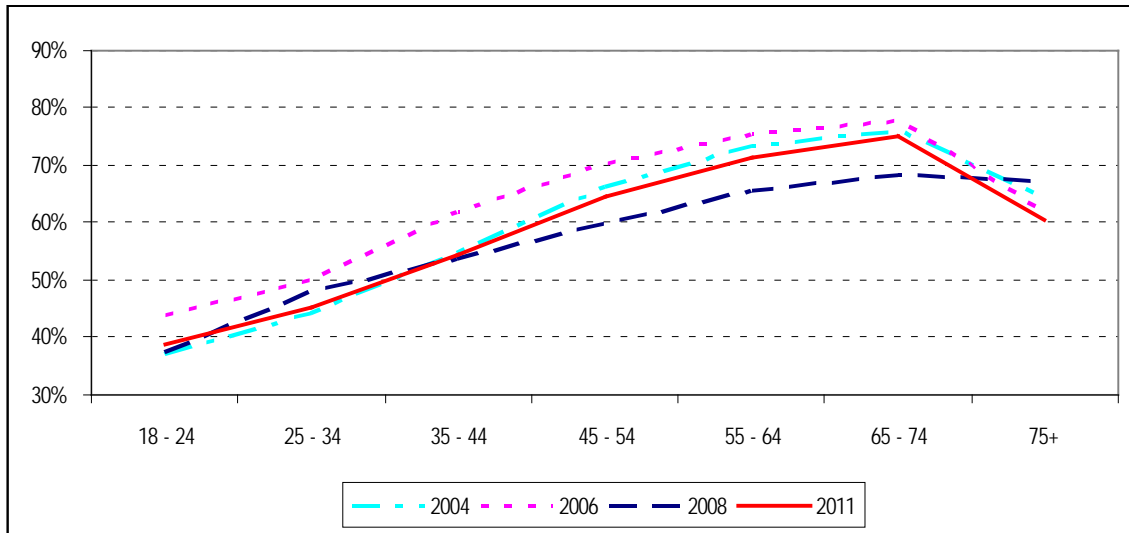
Figure 4 shows how turnout by age has evolved over the last four federal general elections. The same pattern is seen for each election. Differences within age groups do not appear to be widening over time. When compared to 2008, turnout in 2011 is 4.9 percentage points higher for youth eligible to vote federally for the first time, 4.8 higher for those aged 45–54, 5.9 higher for those aged 55–64 and 6.7 percentage points higher for those aged 65–74, the only statistically significant differences.

Figure 3: Estimates of Voter Turnout by Age Group, 2011 Federal General Election



² All observed differences between age groups at the national level are statistically significant at the 5% error level. Throughout this document, a difference between two estimates is said to be statistically significant at the 5% error level if it is larger than its associated margin of error, as described in the Appendix.

Figure 4: Voter Turnout* by Age Group, Federal General Elections, 2004 to 2011



*The figures are not shown here due to space limitations, but can be found on Elections Canada’s website at www.elections.ca/res/rec/part/estim

Figure 5 shows turnout rates for 2011 broken down by both age group and gender. For the 2011 general election, the participation rate across all age groups was 57.3% for men and 59.6% for women. Women voted at higher rates than men in all age groups up to age 64, after which it was the reverse. All observed differences between genders are statistically significant at the 5% error level, except for the 55–64 age group.

Figure 6 shows how turnout by age and gender has changed between 2008 and 2011.⁴ Overall, turnout increased by 2.0 percentage points for both men and women. The same general pattern was observed in both elections, but the differences between men and women were not as pronounced in 2008, with only the 25–34 and 45–54 age groups having statistically significant differences.

For men, the statistically significant differences between 2008 and 2011 were for those aged 25–34 (2.9 lower in 2011), those aged 45–54 (3.9 higher in 2011), those aged 55–64 (5.0 higher in 2011) and those aged 65–74 (8.6 higher in 2011).

⁴ Gender was not included in the analysis of turnout for these studies prior to the 2008 general election.

Figure 5: Estimates of Voter Turnout by Age Group and Gender, 2011 General Election

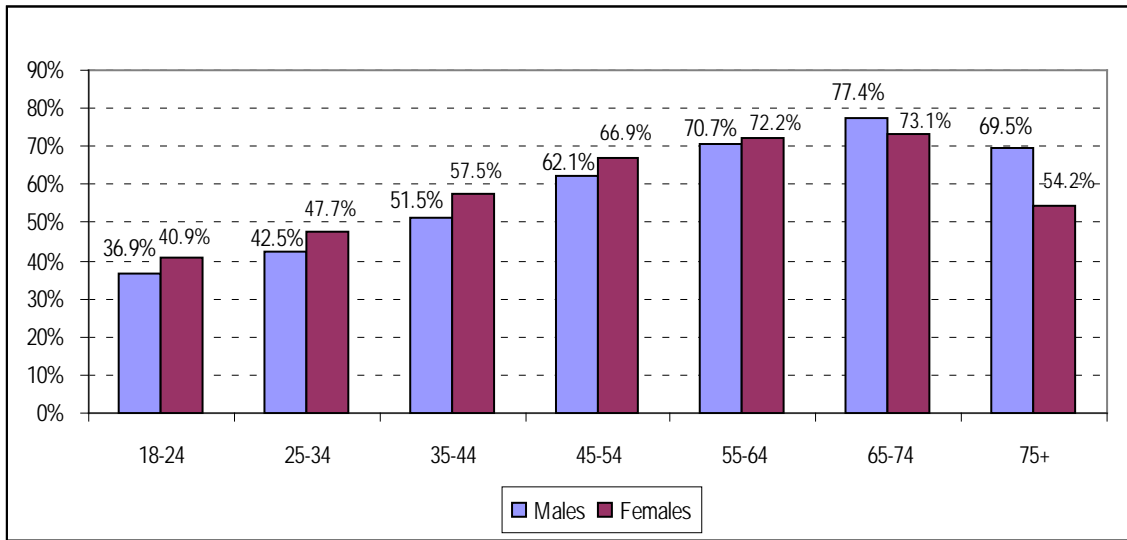
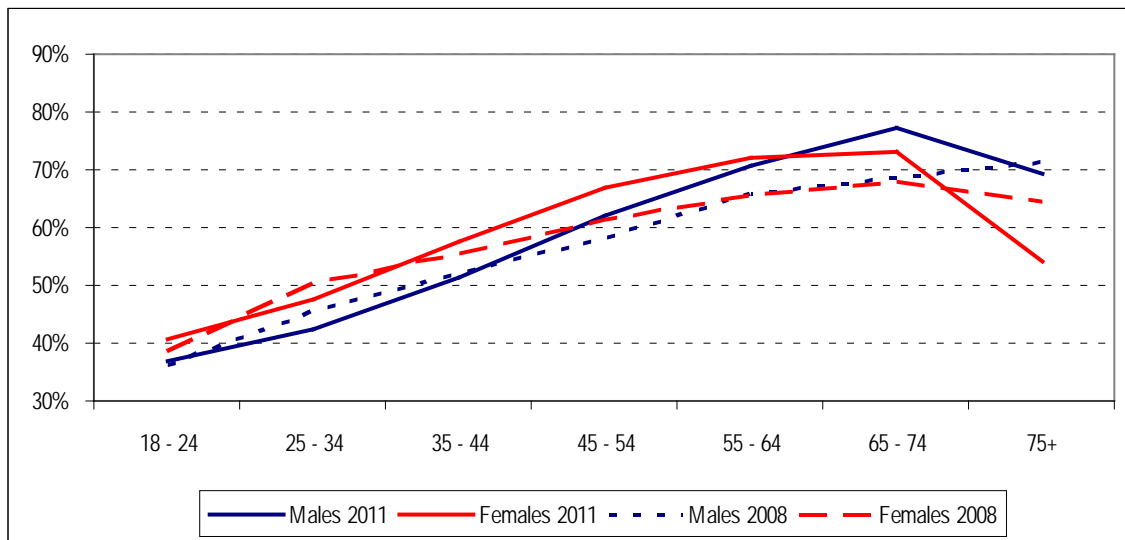


Figure 6: Voter Turnout* by Age Group and Gender, Federal General Elections, 2008 to 2011



*The figures are not shown here due to space limitations, but can be found, along with those for the 18-24 age group, on Elections Canada's website at www.elections.ca/res/rec/part/estim.

For women, the statistically significant differences between 2008 and 2011 were for those aged 45-54 (5.7 percentage points higher in 2011) and those aged 55-64 (6.7 percentage points higher in 2011).

Provincial and Territorial Turnout Estimates

As the proportion of electors represented on the list may also vary across regions, a comparison of turnout by province and territory should therefore be done using adjusted participation rates calculated using the electoral population in the denominator.

Figure 7 shows how voter turnout varies by province and territory compared to the 58.5% adjusted national figure for the 2011 federal general election. Prince Edward Island saw by far the highest turnout at 74.0%, while only the Northwest Territories and Nunavut had turnout below 50%, at 47.4% and 39.4%, respectively. Newfoundland and Labrador (53%) and Alberta (52%) were the only provinces with turnout below 55%. In all other provinces and territories, turnout varied from 56% to 66%.

Figure 7: Estimates of Voter Turnout by Province/Territory, 2011 Federal General Election

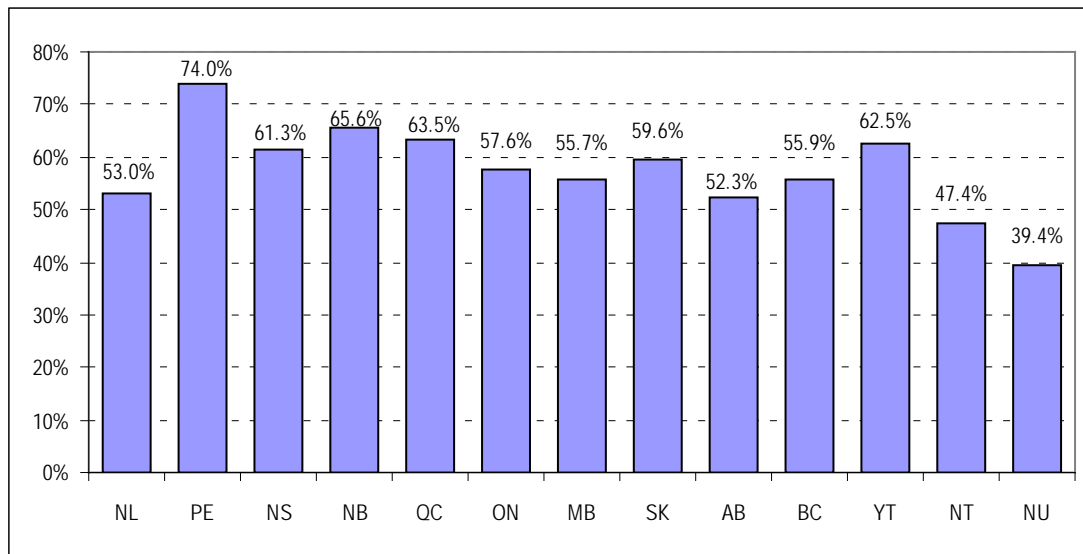
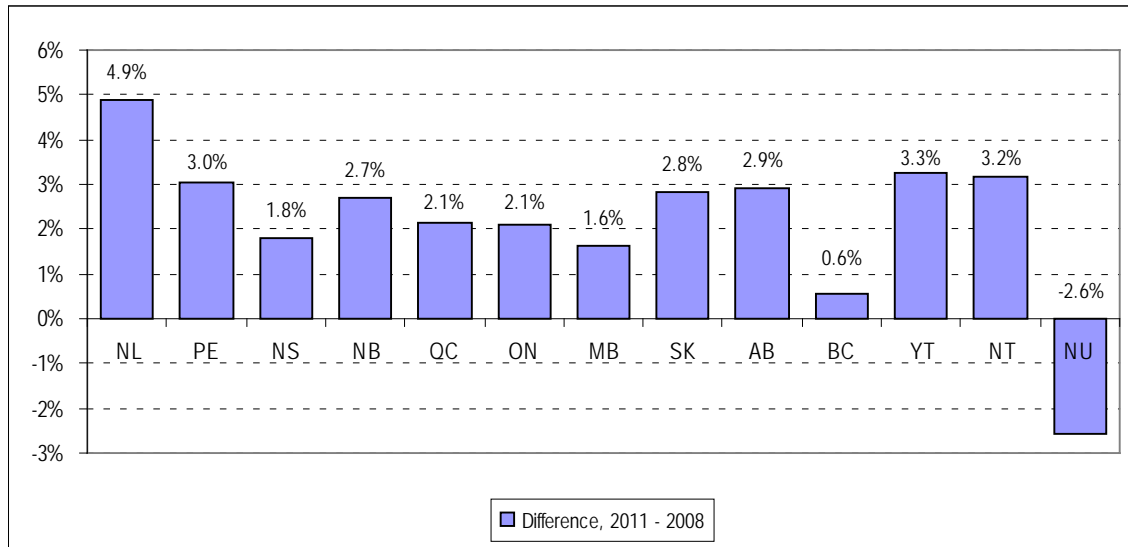


Figure 8 shows how turnout has changed within provinces and territories from the federal general election held in 2008 to that of 2011. Turnout increased everywhere except in Nunavut, where participation was down 2.6 percentage points. Most provinces or territories had an increase between 2 and 3 percentage points between 2008 and 2011. The highest increase was in Newfoundland and Labrador (4.9 percentage points), while the lowest was in British Columbia (0.6 percentage points).

Data from previous elections show that turnout in Nunavut was lower in 2011 than in each of the three previous general elections, while turnout in Prince Edward Island and the Yukon was higher in 2011 than in these other elections.

Figure 8: Change in Voter Turnout from 2008 to 2011, Federal General Elections by Province/Territory



Provincial and Territorial Turnout Estimates by Age and Gender

Breakdowns by age group and gender within province or territory for the 2011 election are provided in Table 1. The pattern by age is the same everywhere, with turnout lowest among 18- to 24-year-olds and then increasing steadily with age up to the 65–74 age group, after which it starts to decline. The increase is most pronounced in Saskatchewan and Nunavut. However, because of the higher margins of error for the estimates at this level, many of the observed differences are not statistically significant at the 5% error level.

Differences between those eligible to vote for the first time and those under 25 but previously eligible were not statistically significant at the provincial or territorial level, except in Alberta (3.8 percentage points higher for first time eligible) and Nunavut (10.1 percentage points lower for first time eligible).

Like for the national level, within provinces and territories, women tended to have higher turnout rates than men up to the 55–64 age group in most jurisdictions, after which the situation reversed. However, the higher margins of error at this level lead to far fewer statistically significant differences.

Table 1: Estimated Voter Turnout by Province or Territory, Age Group and Gender, 2011 Federal General Election

Age	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC	YT	NT	NU	Canada
Males	51	74	60	64	62	57	54	60	50	55	60	45	38	57.3
1st time*	28	53	36	40	45	39	29	31	35	35	38	26	7.7	38.4
not 1st time*	27	49	36	38	40	36	31	27	31	40	39	21	15	36
18–24	27	50	36	39	42	37	30	29	32	38	39	23	12	36.9
25–34	32	57	40	43	51	42	40	37	34	40	49	38	31	42.5
35–44	44	73	53	59	57	50	50	48	46	51	58	41	42	51.5
45–54	57	82	66	70	65	61	60	62	57	63	62	60	51	62.1
55–64	64	87	73	79	75	71	68	79	64	65	72	60	59	70.7
65–74	69	84	81	86	84	77	70	99	72	67	80	58	69	77.4
75+	65	81	78	77	61	73	73	95	73	63	64	51	60	69.5
Females	55	74	62	67	65	59	57	60	55	57	66	50	41	59.6
1st time*	31	49	39	44	51	41	32	34	38	44	42	27	8.7	42.8
not 1st time*	33	56	40	44	47	39	35	31	34	41	42	28	22	39.8
18–24	32	53	40	44	49	40	34	32	35	42	42	28	17	40.9
25–34	37	60	42	52	62	44	46	41	42	43	63	44	42	47.7
35–44	51	82	58	66	64	56	55	51	52	57	63	52	43	57.5
45–54	60	84	68	74	70	66	62	65	62	67	78	64	51	66.9
55–64	68	86	77	80	77	71	70	80	67	66	71	65	58	72.2
65–74	73	79	75	79	76	72	70	90	73	64	71	53	64	73.1
75+	55	61	69	62	42	58	66	70	62	50	58	35	76	54.2

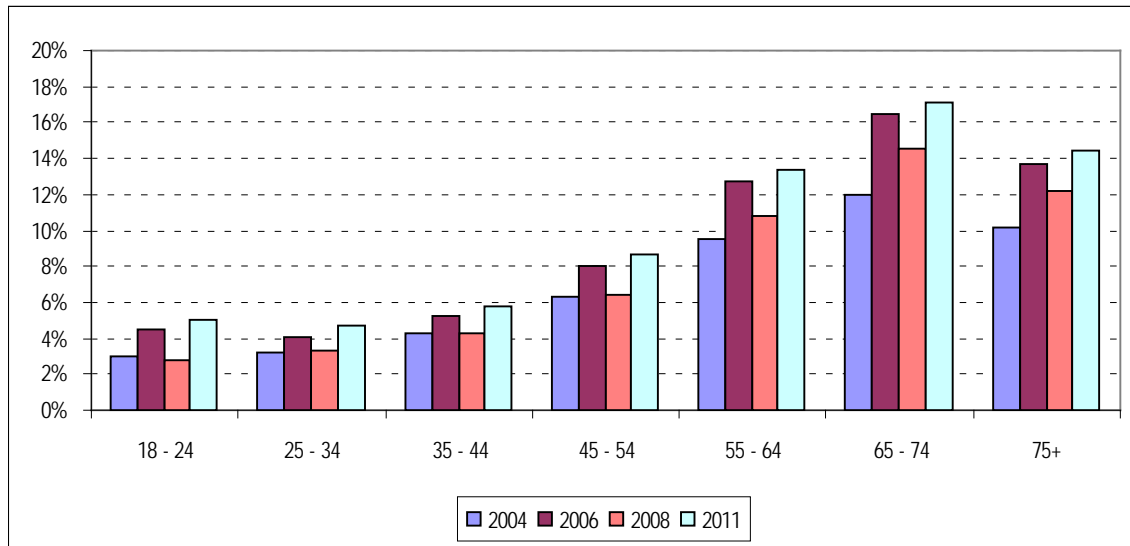
*The category “1st time” includes youth eligible to vote federally for the first time in this general election. For 2011, this includes those born between October 15, 1990, and May 2, 1993. The category “not 1st time” includes those youth under 25 who were previously eligible to vote federally. For 2011, this includes those born between May 3, 1986, and October 14, 1990.

Alternative Voting Methods

Voters can currently vote at advance polls or by special ballot if they wish, rather than on polling day. To see any trends in the use of these methods over time, Figure 9 shows the percentage of the population, broken down by age group, who chose to use either of these alternative voting methods in each of the last four federal general elections.

The proportion of electors using these alternative methods increases with age. In 2011, only about 5% of those aged 18–34 used such methods. The percentage rose steadily to about 17% for those aged 65–74 and then back down to 14% for those 75 and older. Use of these methods was higher in 2011 than for each of the three previous elections in every age group.

Figure 9: Use of Advance Polls or Special Ballot by Age Group*, Federal General Elections, 2004 to 2011



*The figures are not shown here due to space limitations, but can be found, along with those for the 18–24 age group, on Elections Canada’s website at www.elections.ca/res/rec/part/estim.

These figures could be further broken down by gender for 2008 and 2011. In both elections, women tended to use these alternative voting methods slightly more than men across all age groups up to 55–64. After that, men used them more than women.

Conclusion

In 2011, the overall voter turnout based on eligible electors increased to 58.5% from 56.5% in 2008. This change is driven by increases of 4.9 percentage points among youth eligible to vote federally for the first time, 4.8 among those aged 45–54, 5.9 among those aged 55–64 and 6.7 among those aged 65–74.

Turnout steadily increased with age from 38.8% for ages 18–24 to 75.1% for ages 65–74 and then declined to 60.3% for those 75 and older.

For the 2011 general election women participated at a higher rate (59.6%) than men (57.3%), and this was true across all age groups up to age 64, where men started participating more than women.

The use of alternative voting methods, advance polls or special ballots, tends to increase with age. In 2011, 5% of the youngest age groups voted using alternative methods, increasing up to 17% for those aged 65–74. Use of advance polls was higher in 2011 than for each of the three previous elections in each age group.

In spite of a small increase in participation in 2011, younger electors are still voting at a lower rate than older electors. This suggests that initiatives directed at improving the participation of younger electors should be continued.

Appendix: Methodology

The purpose of the study was to estimate voter turnout rates for several demographic groups of interest defined by province or territory, age, and sex.

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. This introduces bias into the turnout results, especially when broken down by age or when making comparisons over time, for at least three reasons:

1. Younger age groups are less likely to be registered as electors for a variety of reasons, including lack of interest or initiative and high mobility rates.
2. The coverage of the electoral list (that is, the percentage of eligible electors listed) changes over time, depending on many factors related to list maintenance activities, among other things. 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.
3. Many electors only get registered when they go to vote. Therefore, non-voters are slightly under-represented on the list of electors, making turnout appear artificially higher. This problem too is exacerbated when turnout is broken down by age, since the youngest age groups also tend to be the ones most likely to get registered when they go to vote.

As for previous studies, turnout is defined as the number of ballots cast divided by the size of Canadian population eligible to vote. The denominator is calculated by adjusting population estimates obtained from Statistics Canada to include only citizens over 18 years of age as of Polling Day (May 2, 2011). In order to get the numerator, we need to know who cast a ballot and what group they fall into. This was obtained for a sample of electors, which was used to produce an estimate of the numerator for each demographic group of interest.

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 2006

Census, with adjustments made to remove non-citizens and those under 18 years of age, who are not eligible to vote. Additional adjustments were made to take into account population growth during the time elapsed between Census Day and Polling Day, using demographic information provided by Statistics Canada and Citizenship and Immigration Canada. The population estimates used for this study can be found on Elections Canada’s website at www.elections.ca/res/rec/part/estim.

Definition of Age Groups

For the purposes of this study, age as of Polling Day was divided into eight groups, which was consistent with previous studies. The groups were defined as follows:

Table 2: Age Group Definition (2011 Federal General Election)

Age group	From	To
1st time	Oct 15, 1990	May 2, 1993
not 1st time	May 3, 1986	Oct 14, 1990
25–34	May 3, 1976	May 2, 1986
35–44	May 3, 1966	May 2, 1976
45–54	May 3, 1956	May 2, 1966
55–64	May 3, 1946	May 2, 1956
65–74	May 3, 1936	May 2, 1946
75+	-	May 2, 1936

Youth aged 18–24 were split into two groups: those who were eligible to vote for the first time in the 2011 federal general election and those who were eligible to vote in the 2008 federal general election.

Sample Design

Elections Canada maintains administrative records that contain address, date of birth and gender for everyone on the final voters list. They do not indicate which electors cast ballots, except in special circumstances. The administrative data 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 is only available on the strike lists used to administer the election.

The information on the strike lists is currently not captured electronically. It would be prohibitively expensive and time-consuming to obtain them all from each polling station and capture the required information after the fact. Instead, a relatively small random sample of 1,800 polls was selected and the strike list from each selected poll was obtained. The information required was then captured, and an estimate of the number of votes cast by regular ballot on Polling Day by non-registering electors was produced for each demographic group of interest. The final estimates required for the numerator of turnout were then produced by adding these estimates to the known numbers of ballots

cast in each group at advance polls, by special ballot, and by those who registered to vote on Polling Day.

Based on previous studies and practical considerations of time and resources, an overall sample size of 1,800 polls was determined to be sufficient to produce estimates with acceptable margins of error at the provincial or territorial level.

For practical reasons related to how the strike lists are stored following the election, the sampling was carried out in two stages. In the first stage, 60 electoral districts were selected at random from the 308 across Canada. In the second stage, 30 polling stations were selected from each of the 60 selected electoral districts, yielding an overall sample size of 1,800 polling stations. At both stages, strata based on the age distribution of registered electors were used to ensure sufficient coverage by the demographic groups of interest.

Margins of Error for Turnout Estimates

Margins of error for the estimates were obtained by producing 95% confidence intervals around the estimates, using the calculated standard errors and assuming a normal sampling distribution. For the 2011 general election, this sampling and estimation methodology produced estimates of voter turnout by age group with margins of error between 1 and 2 percentage points at the Canada level and between 3 and 9 percentage points at the provincial or territorial level, for almost all age groups. Actual participation rates should be within the associated margin of error for the estimates 19 times out of 20.

Throughout this document, a difference was said to be statistically significant at the 5% error level if the estimated difference was larger than the associated margin of error.

Tables showing the statistical margins of error by province or territory, age group, and gender are provided on Elections Canada's website at www.elections.ca/res/rec/part/estim.

Post-Stratification of Turnout Estimates

Because the numerators used in the turnout estimates were estimated from a sample, there would be a margin of error associated with each, and they would therefore not add up across demographic groups to the official number of ballots cast within a province or territory. To account for this, the numerator estimates were therefore adjusted to agree with the known totals at the province or territory level, using a statistical procedure called post-stratification. Because of the post-stratification adjustment, there is no margin of error for the total estimates across all age or gender groups at the province or territory level. That is, the adjustment ensures that the estimates agree exactly with the known values at this level.