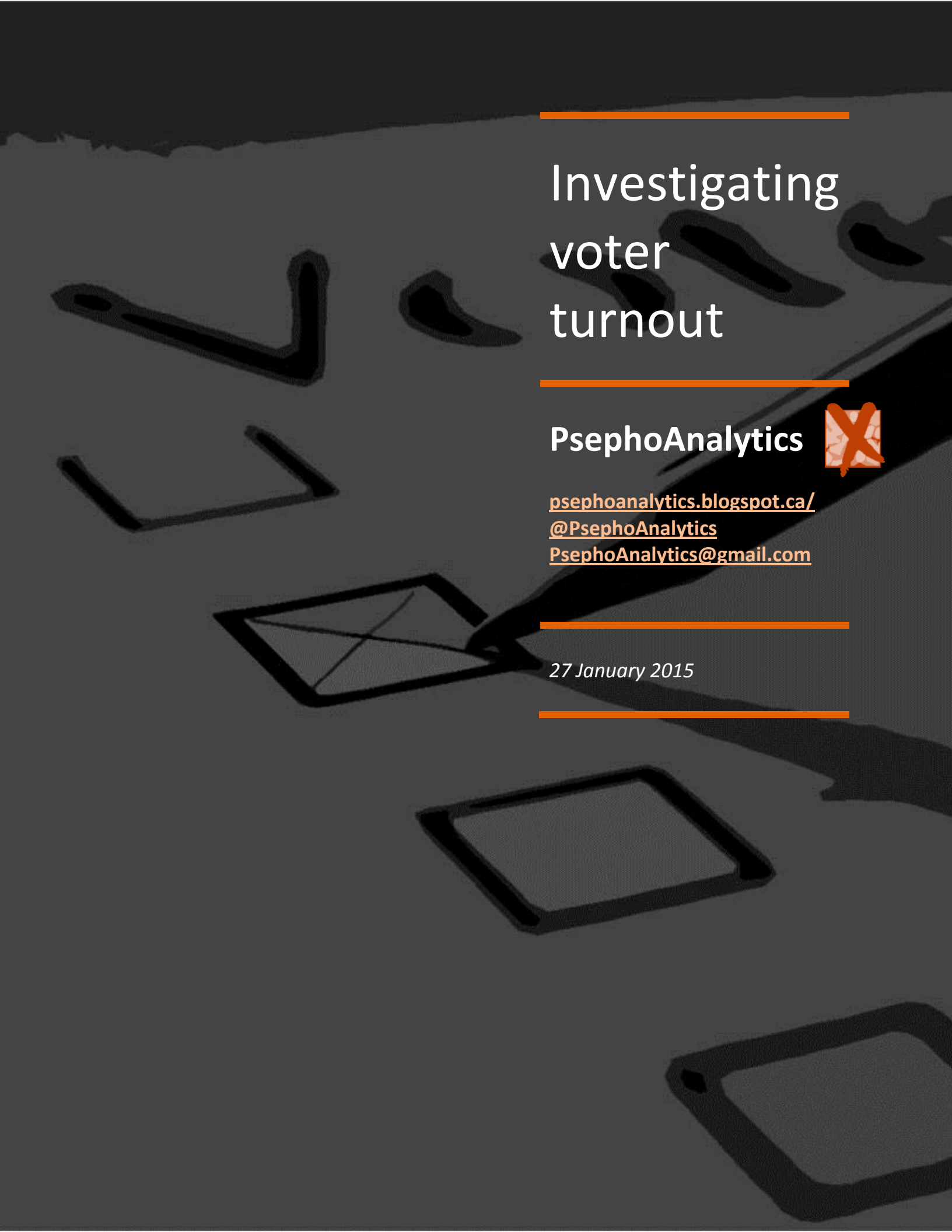

Investigating voter turnout

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Why investigate turnout?

Turnout is often seen as (at least an easy) metric of the health of a democracy – as voting is a primary activity in civic engagement. However, turnout rates continue to decline across many jurisdictions[i]. The term "democratic deficit" is often used in this case to indicate that the legitimacy of our elections is starting to wear thin. This is particularly true if certain constituencies (e.g., younger cohorts, lower income citizens) vote at significantly lower rates than others, potentially distorting public policy (i.e., politicians can ignore the needs of such groups). However, such outcomes are not within the scope of this paper.

From the PsephoAnalytics perspective – namely, accurately predicting the results of elections (particularly when using an agent-based model (ABM) approach) – requires understanding what it is that drives the decision to vote at all, instead of simply staying home. Our first attempt at this was limited to only a few demographic factors, and therefore did not pick up the perceived "importance" of the election we were trying to predict (i.e., the 2014 Toronto mayor's race).

If this can be done, we would not only improve our estimates in an empirical (or at least heuristic) way, but might also be able to make normative statements about elections. That is, we hope to be able to suggest ways in which turnout could be improved, and whether (or how much) that mattered.

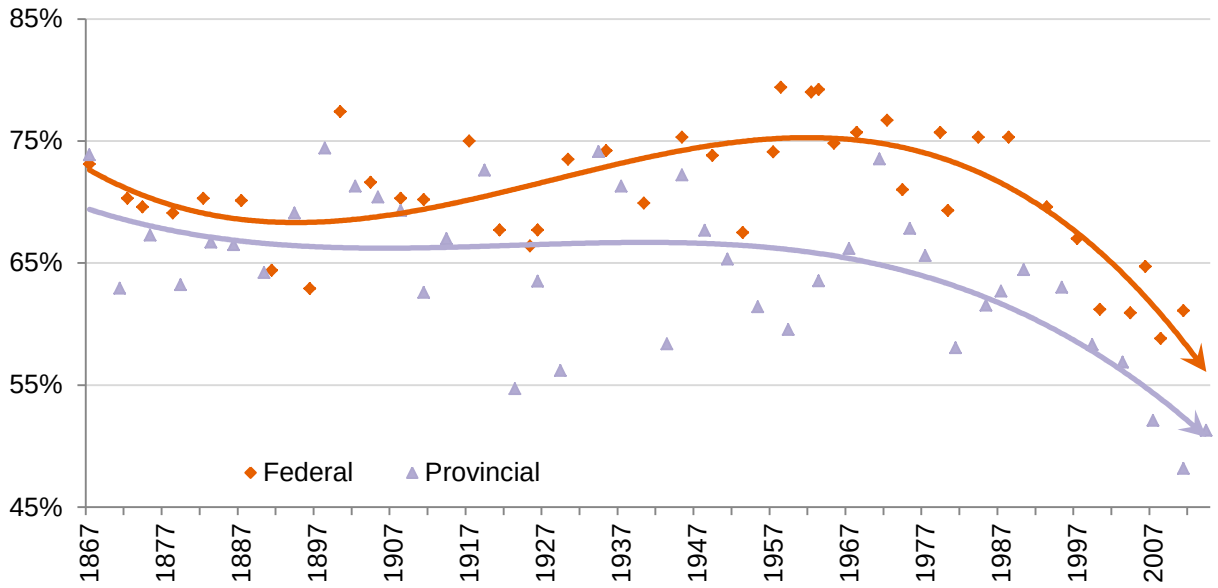
Here, we start to investigate the history of turnout in Canada and Ontario, and review what the literature says about the factors associated with turnout, in an effort to help "teach" our agents when and why they "want" to vote. More work will certainly be required here, but this provides a very good start.

A history of turnout in Canada & Ontario

Much has been made of recent declines in turnout in Canadian elections. As Figure 1 below shows, turnouts in general elections bounce around significantly (federally, a range of 59% to 79%, with an average of 71%; provincially, a range of 48% to 74%, with an average of 64%). Nonetheless, recent elections at both levels are noticeably dragging the trend down with many of the lowest-seen turnouts since Confederation. (Note that Ontario turnout rates in federal elections are often close to the national average.)

As seen later in this paper, there are some valid reasons for this, though the trend certainly seems disheartening.

Figure 1: A history of turnout in federal and provincial (Ontario) general elections



Data source: Elections Canada and Elections Ontario

At the municipal level, data becomes less easily available (and is, perhaps, something for us to look into further). However, according to the Association of Municipalities of Ontario (AMO), 2014 saw an average turnout of 43.12% across 389 municipalities that reported[ii]. Recent elections in Toronto (at least since the first amalgamated "megacity" election in 1997) have bounced around as much as federal and provincial elections. The 2000 election that saw Mel Lastman elected mayor only garnered turnout of 36.1%[iii], whereas the 2014 election that saw John Tory elected mayor garnered a more respectable 54.7%.[iv]

Factors associated with voter participation

Statistics Canada's first survey covering voter participation was the 1997 *Canada Survey of Giving, Volunteering and Participating*, followed by a 2001 version of this survey, and then the *General Social Survey* in 2003 and 2008. Studies using such surveys have found that some groups – namely the young, the less-educated, and the less-wealthy – consistently vote less than other groups.[v]

In 2011, Statistics Canada added questions about voting behavior to the Labour Force Survey (LFS) – an initiative sponsored by Elections Canada. Given the LFS' large sample size and detailed demographic and labour market information, this presented an effective opening into studying voting behaviour in Canada. Statistics Canada itself released two reports with detailed analysis of the 2011 federal election (including reasons for not voting) which leveraged these

new data, and confirmed quantitatively what might have already been known qualitatively. To complement this, Elections Canada released a detailed study of the same election, relying heavily on administrative data (similar to studies done for the 2004, 2006, and 2008 elections). Focusing on youth voter turnout, the Library of Parliament released a research paper that utilized two of these Election Canada studies. Here are the general findings of these four reports[vi].

Turnout rates

"Official" turnout rates are typically the number of ballots cast (including rejected or spoiled) divided by the total number of people *registered* to vote. However, such statistics are not always available in their entirety (e.g., the provincial turnout rates displayed in Figure 1 do not include rejected or spoiled ballots for the 1867, 1871, 1875, or 1879 elections). Therefore, alternative definitions use as the denominator either total population of voting age (originally 21, and now 18 in Canada, often accounting for female emancipation, which occurred at the *federal* level in 1921); or total *citizen* population. Total voting-age population arguably skews turnout rates as not all voting-age people have the right to vote. Thus, the total citizen population is arguably much more appropriate. However, the act of registering is itself a civic act (and a sign of political interest), so the official turnout rate seems best. (Elections Canada – to remove the variation in registration coverage from year to year – uses the total voting-age population while removing non-citizens for much of its analysis, which is perhaps an acceptable compromise.)

One fascinating aspect of studying turnout rates is that surveys that ask about voting participation consistently and significantly overestimate turnout rates when compared to actual results (the LFS is no exception). The consensus dominant belief for why this occurs is what is often called a 'social desirability' bias – that is, some survey respondents lie about having voted because they don't want to admit to having avoided something seen to be an admirable act. As such, such studies should be used with a grain of salt, perhaps at most providing estimates of turnout trends.

That said, just over half of (admittedly) non-voters cited that the main reason they did not vote was either non-interest (27.7%) or being "too busy" (22.9%). Other reasons often cited as the main driver for missing the polls include being out of town (10.1%), illness or disability (8.5%), or not liking the candidates or issues (7.6%).[vii]

Age

Age has been found to be highly associated with voter participation (perhaps the strongest driver). As Figure 2 (below) shows, voter participation increases significantly with age until the 75+ age cohort at which point voter participation drops noticeably (particularly for women).

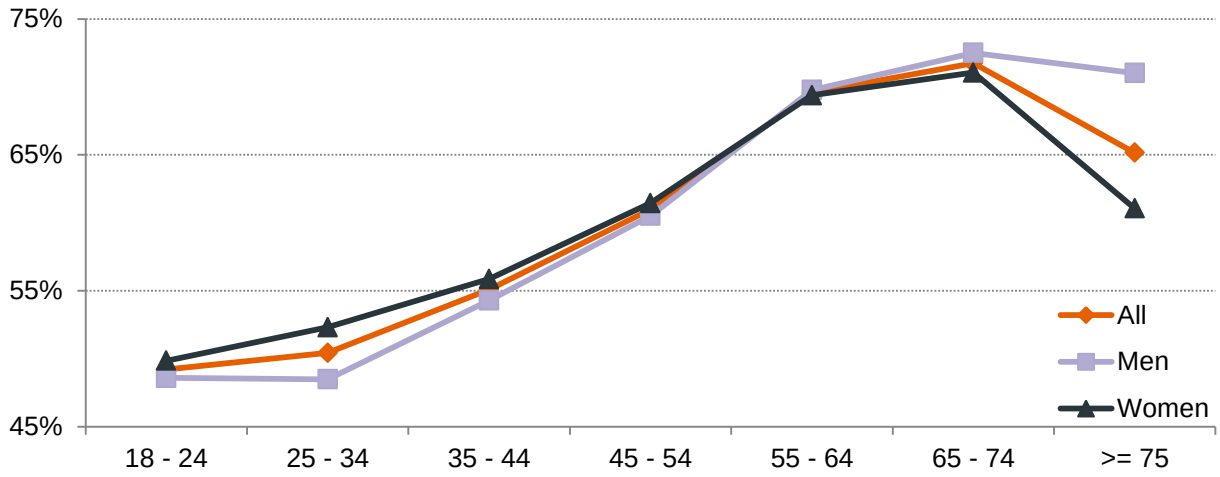
While all age groups often cite a lack of interest as a reason not to vote, reasons for not voting vary across age group. Younger cohorts are much less likely to vote because they are not interested in doing so. (Younger age cohorts are also less likely to *register* as electors for a variety of reasons, including non-interest and high mobility rates.) Middle age cohorts are slightly more likely to claim being too busy. Older cohorts are slightly more likely to claim an illness or disability as getting in the way of voting.

The main issue going forward appears to be generational. Findings in recent studies suggest that as younger cohorts (i.e., starting with those born the 1980s) age, they are voting less than their equivalent age cohorts did in the past.[viii] That is, the replacement of older, more politically engaged, voters (as a part of the so-called voting "life cycle effect") seems to be disappearing. (If this trend were to continue, the lines in Figure 2 would start to flatten out, and drag overall turnout rates down with it.)

Sex

Men vote *slightly* less than women (except in older age cohorts), with more male non-voters saying they did not vote because they were not interested or too busy. This too may be generational, at least culturally (i.e., younger women feel a stronger civic responsibility than women born before World War II).

Figure 2: Average turnout by age cohort and sex, in Ontario, 2008 & 2011 federal elections



Data Source: Elections Canada

Education

Education also seems to be highly associated with voter participation. For example, those with a university degree voted at a rate of 78% in the 2011 federal election vs. 60% (or lower) for other groups. However, this gap is noticeably wider for younger voters. For example, for 25-34 year-olds, the participation gap between those who had at least bachelor's degree and those with less than a high school education was 42 percentage points. This gap shrinks with increasing age cohorts, implying that age may play a larger role in voter participation.

Reasons for not voting vary widely across educational attainment. Those without a high school diploma more often cite non-interest, whereas those with a university degree more often cite being too busy as the main reason (which may be highly correlated with labour status).

Family status

Family status seems to have an influence on voting, mainly due to familial obligations (e.g., caring for young children). There is a negative association between the presence of children and voter participation in all family types, particularly among single parents. Only 36% of single parents with children under 5 voted in the 2011 federal election, compared to 60% of couples with similar-aged children.

Immigration status

Immigrants who are eligible to vote vote less than others. For example, the LFS suggests that voting rates were 51% for recent immigrants, 66% for more established immigrants, and 67% for those born in Canada. Turnout rates also differed across the regions where such immigrants originated (perhaps due to the culture of voting in each region): West Central Asia and the Middle East (53%), East Asia (54%), Western/Northern Europe (77%), and the 'Anglosphere' – namely the US, UK, Ireland, Australia, and New Zealand (75%). Combining these two divisions shows that voting rates for established immigrants are higher *within* all regional groups.

Immigrants more often cite being too busy as the main reason for not voting, whereas those who are Canadian-born more often cite non-interest.

Economic status

Relative economic well-being (e.g., strong labour force attachment, home ownership) is also positively correlated with increased voter participation. The LFS does not ask about wealth, but does ask about home ownership – which is the largest component of Canadian's household wealth. Home ownership is a strong indicator of voter participation (71% vs. 54% for renters).

As might be expected, the employed more often cite being too busy as the reason for not voting, whereas the unemployed more often cite non-interest.

Modeling voter participation

Taken individually, the results above are difficult to assign to individual agents in our model – we need to known marginal effects of each characteristic. For example, is higher education the dominant factor or is labour force attachment (which are themselves highly correlated)?

Thankfully, using the LFS, Statistics Canada ran a multivariate probit model to estimate the marginal effects of each variable on voting – with each of the marginal effects in Table 1 below representing the (percentage point) difference between the given group and the reference group (controlling for other variables in the model). Given that some of these results differ from the raw statistics, the model results should be taken as more dependable, as they hold all other aspects constant. For example, age likely overrules numerous other variables with which it may be correlated (e.g., established immigrant, widowed, not in labour force).

Conclusion

Much has been made of the 'politics' of turnout – which is less of a concern from the PsephoAnalytics perspective than the results seen in Table 1. That said, if our model can use such results to predict how various agents, particularly those in less politically engaged groups, might react to candidates/parties (or even election *models*), then we may be able to suggest ways in which such agents could be convinced to vote (and for whom). Nonetheless, the first order concern is being able to predict elections effectively, which we hope is significantly improved by understanding where such agents start.

Table 1: Marginal effects from a probit model of voting[ix]

	Marginal effects	Sign. @ 5%
Sex		
Male	-0.02	*
Age		
18 to 24	-0.14	*
25 to 34	-0.15	*
35 to 44	-0.1	*
45 to 54	ref.	
55 to 64	0.1	*
65 to 74	0.19	*
75 and over	0.17	*
Education		
Less than high school	-0.11	*
Some high school	-0.08	*
High school diploma	ref.	
Some postsecondary	0.05	*
Trades/certificates	0.05	*
University degree	0.17	*
Family type		
Married/common law with children 5 years and over or no children	ref.	
Married/common law with at least one child under 5	-0.02	*
Single with children 5 years and over or no children	-0.05	*
Single with at least one child under 5	-0.16	*
Divorced or separated	-0.1	*
Widowed	-0.11	*
Immigrant status		
Canadian-born	ref.	
Established immigrant	-0.08	*
Recent immigrant	-0.15	*
Labour force status		
Employed	ref.	
Unemployed	-0.02	*
Not in labour force	-0.05	*
Home ownership		
Owner	ref.	
Renter	-0.11	*
Response type		
Proxy response	-0.01	*
Rural/urban		
Urban	0.02	*
Rural	ref.	
Province		
Newfoundland and Labrador	-0.13	*
Prince Edward Island	0.11	*
Nova Scotia	-0.01	
New Brunswick	0.03	*
Quebec	0.05	*
Ontario	ref.	
Manitoba	-0.04	*
Saskatchewan	0	
Alberta	-0.03	*
British Columbia	-0.01	

Source: Statistics Canada, Labour Force Survey, May 2011

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[i] See the OECD social indicators or International IDEA voter turnout statistics taken on 27 January 2015.
[ii] See AMO election data, taken from on 22 January 2015.
[iii] Taken from http://www.toronto.ca/311/knowledgebase/85/101000040385.html on 22 January 2015.
[iv] Taken from http://www1.toronto.ca/City%20Of%20Toronto/City%20Clerks/Elections/1-Home%20Page/Images/2014Final_stats.jpg on 22 January 2015
[v] Uppal & LaRochelle-Côté, 2012
[vi] Uppal & LaRochelle-Côté, 2012; Statistics Canada, 2011; Elections Canada, 2012; and Barnes & Virgint, 2013.
[vii] Remaining options were "forgot to vote" (3.8%), "not on voters list" (3.7%), "too difficult or transportation problem" (2.9%), religious beliefs (1.3%), weather conditions (0.1%), other (11.4%).
[viii] André Blais et al., "The Evolving Nature of Non-Voting: Evidence from Canada," Paper presented at the Annual Meeting of the American Political Science Association, San Francisco, 30 August to 2 September 2001, p. 5.
[ix] The dependent variable equals 1 if the individual reported voting (and 0 otherwise). The marginal effects are for a discrete changes in the dummy variable from 0 to 1 and is calculated at the means of the independent variables.