# DECREASING THE COSTS OF VOTING: TESTING THE EFFECTS IN CANADIAN GENERAL ELECTIONS

By Yana Makhnatch

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Supervisor: Professor Gabor Toka

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## Abstract

Previous research on the determinants of voter turnout has mainly focused on institutional factors such as the electoral system; socio-economic factors such as development; and election specific factors such as the closeness of the election. The impact of factors that election administrators can actually change, such as the number of polling stations, has rarely been discussed before. Using data collected by the Canadian federal election administration agency, Elections Canada, for the 38<sup>th</sup> and 39<sup>th</sup> general election, this study consists of analyzing various factors that can increase the benefits of voting and decrease the costs (time and energy) of voting. Canada is treated as a case study here to test the impact of various factors that could be expected to influence the rate of voter turnout worldwide. The thesis presents bi-variate and multivariate regression models accounting for variation observed across 308 single-member districts. Controlling for the size of the electorate, the incumbents' party, the number of candidates, the competitiveness of the race and relevant aspects of campaign finances, the thesis concludes that the number of polling stations had no significant impact on voter turnout in the 38<sup>th</sup> and 39<sup>th</sup> Canadian General Elections. Instead, electoral competitiveness and total candidate campaign expenditure had a significant impact on voter turnout, suggesting to consider other avenues to increase turnout in elections than further reducing the costs' of voter participation.

Key words: Voter turnout; Canadian General Elections; costs of voting; polling stations;

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# Glossary

**Electoral district:** A contiguous geographical area, which is represented by its elected Member of Parliament (MP). During federal elections, Canadian citizens elect an MP in each electoral district who than represents them and all of the Canadian citizens in the House of Commons. (Government of Canada 2015)

**Canadian Federal General Elections:** During a general election for the federal House of Commons elections are held simultaneously in each electoral district. The outcome of those district elections in turn, determines who will form the federal government. (Doody 2007)

**Reneging:** Occurs when an elector comes to vote, waits in the line as necessary, but leaves without voting. (Spencer and Markovits 2009, pp.15)

## Introduction

Voter turnout has been declining in most established democracies since the 1970s.(Pintor et al. 2012, pp.85) In order to examine how this trend could be reversed, previous research has focused on demographics, knowledge, income, and residence as determinants of turnout. As findings in electoral studies reveal, "non-voters tend to be younger, less educated, less wealthy, less politically knowledgeable, less interested in elections, and generally less integrated into the political system."(Wesley and Summerlee 2012, pp. 267) This pattern continues to exist in much of the Western world and Europe today.

Adding to scholarship on turnout, I focus on election administration as a key component to the reversal of this trend. Only too often have voters complained about the long lines at polling stations on election day. In Western democracies, long lines have occasionally been making national headlines confirming the dissatisfaction with administration and operations of polls during the electoral process. The presidential election of 2004 in United States of America "reported long lines in Ohio, Florida, and Pennsylvania— as [long as] 10 hours." (Spencer and Markovits 2009, pp.3) Similarly to the United States, Canada experiences a related issue with long lines being reported in the 2014 municipal elections in Vancouver, Quebec, and Toronto—some waiting for more than an hour and a half. (Jackson 2014; CBC News 2014; CTV Montreal 2014) In relation to long lines, operation studies have confirmed that long lines can deter voters from casting a ballot because of the time and energy it consumes to vote.

#### The Problem of Low Voter Turnout

I begin by outlining the issues pertaining to the decrease of low voter turnout in the international context. Focusing on turnout in the international context, Figure 1 demonstrates

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a steep decline in non-compulsory parliamentary elections in Europe, Canada, and United States of America (presidential). In particular, Figure 1 illustrates the total global average, as well as, turnout for Canada, United States, and all of Europe for the years between 1945-2015 in parliamentary elections. In particular, as Figure 1 demonstrates, Canada has the highest turnout of these during the time period of 1945-2010. However, there is also a steep decline in many other democracies. For example, using data collected by International IDEA (2015), this graph demonstrates a slow global average decline in voter turnout from 78% in 1945 to an estimated 67% in 2015. Compared to Canada and European countries, United States has the quickest drop in turnout from 89% in 1970s to 68% in 2015.



Figure 1: Estimated Voter Turnout in Parliamentary Elections: 1945-2015.

**Source:** International IDEA Institute for Democracy and Electoral Assistance. (2015) *Voter Turnout Analyzer*. [Online] Available from: <u>http://www.idea.int/</u> [Accessed April 29 2015]

As these patterns in the international context demonstrate, the declining trend in Canadian elections is a reason to be concerned. In order to reverse this trend in electoral studies, chapter 1 provides alternative explanations as variation in voter turnout. Western governments have attempted to address this issue by creating advanced polling stations, and holding elections on holidays or weekends. Yet, despite previous variations in voter turnout, voter participation is continuing to decline. Therefore, I examine a more direct solution to improving turnout via creating more polling stations, which could potentially reduce the time and commitment it takes to cast a ballot. Complementing previous discussion on ways to increase voter turnout by making voting less time consuming by Gosnell (1930), and Rosenstone and Wolfinger (1978), I use Canada as a case study for a better understanding of turnout decline in the Western world. To the best of my knowledge, this study will be the first to study the importance of the number of polling stations as a factor in variation in voter turnout by decreasing the costs (time and energy) of voting for the electorate in democratic countries. I examine the problem more directly than in previously discussed studies (see e.g. Haspell and Knotts 2005; Spencer and Markovits 2009; Brady and McNulty 2011) and in a different context, at the national level.

Focusing on the change of voter turnout as the unit of analysis, Canada's current electoral system and its 308 single-member electoral districts, I will be able to test the relationship between the number of polling stations and voter turnout. Moreover, I analyze the effects of the number of polling stations with turnout while controlling for incumbency, the size of the electorate within the district, the length of the ballot, electoral competitiveness, and total candidate campaign spending. Controlling for these factors, I test the following hypotheses: 1) the number of polling stations will have an impact on turnout for the 38<sup>th</sup> and 39<sup>th</sup> Canadian federal general elections; 2) An increase in the number of polling stations (mobile, stationary, total) from the 38<sup>th</sup> to the 39<sup>th</sup> Canadian federal general election will improve turnout. I expect this because a greater density of polling stations in the district should decrease the costs (time and energy) of voting for the voter. With an increase in the number of polling stations

and the average voter will decrease, and the time the voter has to wait to cast his/her ballot will diminish, resulting in a decrease in costs of voting for the electorate. This should then affect turnout.

Expanding on existing literature, the first chapter considers past research on voter turnout in order to analyze previous knowledge within electoral studies. Moreover, it addresses the theoretical background and alternative explanations of voter turnout in the international context. The second chapter provides an observation of Canada as a case study in order to provide an in-depth analysis of turnout in the Western world. The third chapter introduces the methodology and data, which is used in this thesis. The fourth chapter then tests the relationship between the number of polling stations and voter turnout, while controlling for incumbency, electorate population, ballot length, electoral competitiveness, and total candidate campaign expenses during the 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections. Lastly, I conclude with a discussion of my findings that demonstrate the need of further research to provide support to election administrators and representatives in order to better distribute their resources during election day.

## **Chapter 1: Explaining Voter Turnout**

#### 1.1 Previous Literature

The existing literature (e.g. Riker and Ordeshook, 1968) provides convincing explanations as to why voters vote and how to increase voter turnout. Adding to the literature on the paradox of voting (Downs 1957; Riker and Ordeshook 1968), authors such as: Lijphart (1997), and Rosenstone and Wolfinger, (1978) have pointed at numerous factors to increasing voter turnout by studying compulsory voting, weekend, holiday, and advanced voting. Nevertheless, relatively absent from this literature is the effect of polling stations on turnout. In order to fill this gap in electoral studies literature, this chapter assesses alternative explanations to better understand voter turnout. Moreover, it argues in favor of calculus of voting theory for increasing the number of polling stations and decreasing the costs of waiting to cast a ballot, thereby improving time management a citizen has to spend to cast a vote.

#### 1.2 Micro Level Research

Previous electoral studies (Wolfinger and Rosenstone 1980; Blais 2000) have considered numerous factors for explaining variation in voter turnout. This includes socioeconomic factors such as level of development, and election specific factors such as electoral closeness, and institutions like the type of electoral system. At a most basic level one can distinguish between research that focused on voter turnout at the micro-level (income, age, gender, and race) and macro-level (electoral system, electoral process, and registration laws). The first groups of studies have been comparing voters to non-voters. These studies demonstrate that non-voters "feel politically distracted, disassociated from the political process, or displaced from the voting system" (Wesley and Summerlee 2012, pp. 268) which offers an explanation to turnout decline. This explanation remains popular also in North America: "[only] 53.8 percent voted in the last Canadian Federal Election, which may be due to disillusionment or indifference."(Timmons 2014) Other previous findings at the micro

level demonstrate that "older people are more likely to vote than young people. Education also shows a positive correlation with democratic involvement." (Pintor et al. 2012, pp.112-113) This led some to suggest that aggregate turnout may increase if voters got more educated. However, scholars such as Nie, Junn, and Stehlik-Barry (1996) have strongly disputed this inference. Earlier works by Campbel et al. (1960), and Wolfinger and Rosenstone (1980) introduce the Michigan and sociological model as the dominant theoretical explanations of voter turnout at the micro-level. The former literature "traces turnout to citizen's socioeconomic [and] demographic characteristics." (Darmofal 2006, pp. 124)

By and large, research into micro-level determinants of turnout faces methodological difficulties in identifying factors that can increase aggregate level turnout and is better suited to studying inequalities in turnout across groups. This is particularly true for the socio-demographic determinants of turnout. Studies using cross-national survey data or experiments fare better in that they often highlight psychological predispositions, like a sense of citizens' duty to vote, general interest in politics and the campaign, and citizens' sense of political efficacy that can conceivably impact aggregate differences between countries and elections in how many people turn out (Powell 1986; Blais 2000; Wessels and Franklin 2009). However, these factors cannot easily be influenced by non-partisan actors' intent to encourage a high turnout, such as election administration.

A more promising way of identifying practical ways to increase turnout is to look at factors that can reduce the costs of turnout for individual citizens. In modern advanced democracies, these costs may seem trivial but are apparently not negligible. Measuring the costs of voting using individual-level survey data from Canada, Blais et al. (2007) asks respondents three questions: "how much time respondents think it will take them to vote, how easy or difficult they feel is it to go and vote, and how easy or difficult they find it to get information and decide how to vote." (Blais et al. 2007, pp.9) Based on these questions, Blais

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et al, (2007) find that "marginal increases in (costs) reduces the propensity to vote only marginally." (Blais 2000, pp.91) However, despite its limited impact at the individual-level, costs may add something to explanations of voter turnout at the aggregate level. Moving beyond micro-level research, this thesis focuses on turnout at the macro-level. A macro-level perspective allows us to take into account previous political and historical effects on turnout. In particular, by controlling for factors that shape individual behavior such as electoral competitiveness, electoral system, incumbency, ballot length, and total candidate campaign expenditure, we are able to understand the micro-macro relationship.

#### 1.2 A Theory of the Calculus of Voting

Next, I focus on a theory of the calculus of voting to examine voter turnout. Advocates of rational calculus of voting model, suggest "voters think prospectively about the impact of their actions on their own utility." (Fowler and Smirnov 2007, pp.61) In other words, voters are rational and vote only if the benefits of voting exceed the costs of voting. In order to examine the principle of rational calculus of voting, the purpose of this chapter is to provide a theoretical analysis and alternative explanations of ways to decrease the costs (time and energy to cast a ballot) of voting, in order to improve turnout in democratic countries.

In order to examine the theoretical explanation of the paradox of voting, the pioneering work of Anthony Downs (1957) recognized that, "where voting is costly, individuals will consider both how much they care about the outcome and the likelihood that their vote will influence the outcome." (Farber 2010, pp.3) In other words, using a utility function voters compare the benefits and costs of voting when deciding whether to vote. Later works by Peter C. Ordeshook and William H. Riker (1968) reinterpreted Anthony Downs's (1957) theory of the paradox of voting and developed the calculus of voting theory. In the utility hypothesis, Downs (1957) originally expressed the calculus of voting as

"R=(BP)-C."(Riker and Ordeshook 1968, pp. 25) The model, captures "(R) as the utility; (B) is the benefit the citizen receives from his preferred candidate winning the election instead of the less preferred candidate; (P) is the citizen's expectation that her vote will be decisive in determining the outcome of the elections," (Hill 2006, pp. 21) while subtracting "(C) the cost of the act of voting to the citizen." (Hill 2006, pp. 21) Using this mathematical model first proposed by Downs (1957) and later reinterpreted by Riker and Ordeshook (1968), the authors re-define the mathematical model as "R=pB-C+D" (Riker and Ordeshook 1968, pp.25) which captures the "(p) value of the probability that the vote cast will count, (B) refers to the benefit of voting while subtracting the (C) costs of voting (time and effort spent to vote), while increasing (D) the citizen's duty to vote." (Riker and Ordeshook 1968, pp.25) Haspel and Knotts (2005) demonstrate that "the values for P, B, and D will differ" (Haspell and Knotts 2005, pp. 563) in elections. Therefore, the model used in this study recognizes that the same values P, B, and D will differ both between federal, municipal, and mayoral elections for each voter in the Canadian context and across democratic elections in general. Indeed, some of the most prominent works on aggregate-level differences in turnout across democracies suggest that most of the variation can be explained by factors influencing the costs and benefits of voting. (Powell 1982; Colomer 1991; Franklin 2004; Jackman 1987).

In my study I focus on direct costs of voting, which previous electoral scholars have extensively studied. (Colomer 1991; Geys, 2006; Goerres and Rabuza 2014). Goerres and Rabuza (2014) define direct costs as: "(a) registering for the electoral register, (b) time spent to get information and decide, (c) time and further resources for the actual act of voting." (Goerres and Rabuza 2014, pp.2) Indirect costs are considered as more embedded in the decision-making process (e.g. income). Therefore, since "direct costs-are in theory—much more predictable and likely to be the same for individuals in similar social-political contexts," (Goerres and Rabuza 2014, pp.3) I adopt direct costs of voting.

The impact of benefits like that chance of being decisive in a close election have been well demonstrated both by experiments—see e.g Agranov et al. (2012) for a recent example—and regarding Canadian voters in particular (Blais 2000). For example, Wesley and Summerlee (2012) study community-level factors that could influence the rate of voter turnout and reveal that the best predictor of turnout within Manitoba is the competitiveness of elections in a constituency.

Another series of studies on costs of voting demonstrates that restrictive registration laws discourage voting, while advanced voting encourage it. (Rosenstone and Wolfinger 1978; Nagler 1991; Fowler and Smirnov 2007; Norris 2014) For example, in a recent research study conducted by Shelley de Alth (2009), restrictive registration laws discouraged voting. In her study, Shelley de Alth (2009) examined the effect of ID laws on turnout between 2002 and 2006 in America. Her findings demonstrate that "states with ID laws experienced a 1.6 to 2.2 percentage point decline in 2006 voter turnout, 3 to 4.5 million voters were disenfranchised by the laws." (Shelley de Alth 2009, pp.202)

Among the cost factors, the impact of voter registration requirements and compulsory voting were most extensively studied (see e.g. Birch 2008; Colomer 1991; Franklin 2004; Hanmer 2009; Jackman 1987; Powell 1982). My research is concerned instead with a factor that has hardly been studied in spite of being far easier to change: the number of polling stations available to citizens. Douglas M. Spencer and Zachary S. Markovits (2009) observe long lines at polling stations on election day to demonstrate its effect on elections outcome. In their field study research, the authors collect data from 30 California polling stations on election day in order to measure factors that could contribute to line formation. In their findings, they were able to conclude that long lines formed because of the dearth of polling stations. More importantly, the authors observe in the elections that reneging had occurred during two peaks in their experiment on election day. The first peak occurred "during the

lunch hour when many voters are constrained for time, and the second between 5:00 and 7:00 p.m. when lines were at their longest." (Spencer and Markovits 2009, pp.15) Their study highlights the importance of polling stations during an election on turnout. Despite their research on line formation and efficiency, their research does not focus on the number of polling stations as a factor to turnout. Therefore, expanding on this literature on operations research, I introduce expanding on the number of polling stations in order to solve the issue of long lines and waiting times, which could potentially improve voter participation.

Adding to the importance of the number of polling stations, James H. Fowler and Oleg Smirnov (2007) confirm the importance of costs (time and energy spent to cast a ballot) in elections. They create a model, which demonstrates different dynamics that could increase turnout. In Figure 3 of their study, they create three graphs, which test the relationship between costs of voting, distance between party platforms, and margin of victory with turnout. (Fowler and Smirnov 2007, pp.21) Their results provide the significance of costs of voting on turnout demonstrating that, "an increase from nothing to 0.1 [points] depresses turnout by 4 percentage points on average." (Fowler and Smirnov 2007, pp. 61) In other words, low voter turnout is a response to high costs of voting. These findings are consistent in the scholarly work of Rosenstone and Wolfinger (1978), who report that "eliminating closing date for voter registration, turnout would increase by 6.1 percent."(Sniderman and Highton 2011, pp.314) These results confirm the importance of costs of voting on turnout.

At the macro-level, researchers (Dalton and Klingemann 2007) have focused on costs of voting and the probability of voters casting a ballot on election day. In their findings, the authors conclude, "people in countries where the cost of voting is high are less likely to vote than people in countries where the cost of voting is low." (Dalton and Klingemann 2007, pp.595)

In addition to solving inequality differences in socio-demographic factors, previous literature (Haspel and Knotts 2005; Alvarez and Nagler 2002) also suggests that decreasing the costs of voting increases voter turnout during elections. Since voting is the most fundamental way to participate in a democracy, it is therefore important to study ways to decrease costs in order to improve turnout. Previous theoretical literatures in the realm of electoral studies analyze alternative explanations for increasing voter turnout and decreasing the costs of voting. However, despite previous contributions to a better understanding of the costs of voting and voter turnout, the explanation provided using calculus of voting theory dominates all other alternatives in explaining voter turnout because of its emphasis on costs of voting. This thesis introduces number of polling stations as a new factor of voting costs, which helps explain a voter's motivation to cast a ballot. For example, a person will vote when the costs are lower than the benefits. This explanation of turnout is best applicable in the case study of Canadian general elections for the reasons that will be further elaborated in the following chapter.

Moshe Haspel and Gibbs H. Knotts (2005) use the Geographic Information Systems (GIS) as a tool to calculate this presumption. Using this tool, they are able to "calculate the distance between the residence and polling place for registered voters in the city of Atlanta."(Haspel and Knotts 2005, pp.1) Their findings reveal that distance and location of a polling station has a significant impact on turnout, which confirms Downs' theory that "the returns from voting are usually so low that tiny variations in cost may have tremendous effects on the distribution of political power." (Haspel and Knotts 2005, pp.12) In addition to the location of the polling station, the authors were able to examine the impact of changes in distance on 2001 voters whose districts had changed. From their observations, they were able to conclude "existing voters are sensitive to changes in distance from their respective polling places...the gain in turnout that accrues from splitting precincts outweighs the loss due to any

confusion over the location of the polling place (information costs) that also occurs." (Haspel and Knotts 2005, pp.11) Henry E. Brady and John E. McNulty (2011) confirm the importance of polling stations within the electoral process. In their analysis, the authors focus on the location of polling stations during California's 2003 gubernatorial recall elections in Los Angeles Country. In their findings, turnout reduced by "about 60% of the 3.03% reduction in turnout at the polling place" (Brady and McNulty 2011, pp.14) because an average voter had to search for the polling station. In particular, their study demonstrated that "people make a decision about whether to vote based on the increased search costs from having their polling place moved, and if they decide to vote." (Brady and McNulty 2011, pp.14) This implies that location and distance of the polling station is important during the electoral process. Specifically, the location and distance of the polling station costs lost due to the change. Further analysis of polling stations on voter turnout in this study will be able to test the significance of number of polling stations on costs of voting and turnout.

#### 1.3. Summary

This chapter has provided a theory of calculus of voting as an aid to understanding the rate of voter turnout. Despite variations in voter turnout typically analyzed in terms of the benefits and costs of voting, the literature did not pay too much attention to the supply of polling stations as a factor. The initial evidence suggests that this factor may well have an impact, and the factor deserves attention given that it is so easily changed according to need by election administrators interested in increasing turnout. Yet the size and the significance of the effect, has to the best of my knowledge, not been examined with nationwide aggregate data before.

Hence, my study attempts to contribute to filling the gap in the literature regarding the possible effect of the number of polling stations on voter turnout. Drawing upon prior theories

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about the factors that influence the electorate to vote, the calculus of voting model is adopted. The costs of voting are determined by the time and energy that an electorate has to spend to vote; the key benefits of voting are considered here civic duty or support for the democracy; and the likelihood that one's vote counts, which is determined by the closeness of the elections and the number of electors.

Additional factors influencing voters' decision to go to the polling station on election day including, according to e.g. the review by the International IDEA Handbook of Electoral System Design (1997), "the institutional factors such as the type of electoral system used and whether voting is compulsory or not. Socio-economic factors such as the literacy rate, the wealth of a nation, its population size, and its human development levels, and political factors" (International IDEA Handbook of Electoral System Design 1997) are also sometimes mentioned as relevant influences.

While I could not provide an overview of the extensive literature on these additional factors here, I intend to keep the most important factors—like the legal framework of the election, literacy, level of development, and democracy—constant in my analysis by focusing on a single country in the middle of the 2000s, and by controlling for factors like the closeness of elections, the number of choice options (candidates) on the ballot, the size of the electorate, incumbent candidates running, and candidate campaign spending.

The next chapter introduces the national context in which I shall examine the impact of the number of polling stations on turnout.

# Chapter 2: An Analysis of Canadian General Elections: 2004 and 2006

Adding to shortcomings of existing research on turnout that focus primarily on presidential politics in America. Canada is a fruitful case study for examining ways to improve turnout because of its versatile communities and geographical landscapes. Moreover, while Canadian literature (Blais et al. 2007; Wesley and Summerlee 2012) focuses on electoral districts at the provincial level, few studies have been conducted at the federal level. The current study breaks down all thirteen Canadian provinces into 308 single-member electoral boundaries. To be clear, this study does not focus on the rapid decline in voter turnout in Canadian general elections, but rather focuses on factors, which could improve turnout in federal democratic countries.

In many developed democracies voter turnout has been declining. (Elections Canada 2006, pp.2) This is also true for Canada. Since the Second World War, voter turnout in Canadian general elections has declined. (Pammett and LeDuc 2003, pp.9) In order to make voting more rewarding, polling stations in Canada have been placed in churches, schools, government buildings, and hospitals. Despite previous attempts by Elections Canada to improve satisfaction and efficiency on election day, voters continue to complain about the time and effort it takes to cast a ballot. Numerous news media report long lines to have formed in Toronto, Vancouver, and Montreal during the municipal election in 2014. (Jackson 2014; CBC News 2014; CTV Montreal 2014) The dissatisfaction with long lines on election day can deter people from voting and influence the outcome of the election and turnout rates.

The purpose of this chapter is to provide an overview of the measures used in Canada in order to improve turnout, and implement the results in the international context. Moreover, it provides a brief background of Canada's current electoral system and the declining turnout rates in Canadian general elections. Focusing on the 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections, this chapter introduces the two elections in order to have a subtle understanding of the Canadian electoral process and the changes that could have influenced the five percent increase in turnout from the 38<sup>th</sup> to the 39<sup>th</sup> general election. Moreover, because the number of polling stations increased from the 38<sup>th</sup> to the 39<sup>th</sup> general elections, while the districts remained the same, this research is able to test whether a change in the number of polling stations triggers a change in turnout in the third chapter.

This chapter is structured in three parts. The first part of the chapter introduces the Canadian electoral system. Next, it focuses on the voter turnout during the time period of 1988- 2011. Lastly, it provides an in depth analysis of the 38<sup>th</sup> and 39<sup>th</sup> general election.

#### 2.1 A Brief Background of Canada's Electoral System

This section provides a brief overview of Canada's electoral system in order to have a better understanding of the electoral process conducted in Canadian elections. Canada's electoral system is "a single-member plurality system also referred to as first-past-the-post system, which means that in an election a candidate with the most votes wins a seat in the House of Commons for a constituency." (O'Neal 1993) Elections Canada is the main agent responsible for conducting by-elections, federal general elections, and referendums. Elections Canada is an agency, which is independent from the government. (Elections Canada 2006, pp.1) In agreement "with the Canadian Elections Acts, the Chief Electoral Officer reports directly to the Parliament on the administration of each election and referendum." (Elections Canada 2006, pp.1) Moreover, the agencies responsibilities include providing easy access to the polls on election day for all citizens, and informing citizens about the electoral process. In order to make voting more accessible to all Canadians, advanced and special ballot (mobile and mail) are available for those who require it. In addition to positioning polling stations in accessible and convenient locations, the agency adjusts voting hours where time zone is an

issue. Despite Elections Canada's role in making voting more convenient and polling stations easily accessible on election day, turnout has been drastically declining since 1945. (Pammett and LeDuc 2003, pp.9)

In addition to administering elections, the agency also re-draws the electoral boundaries in order to ensure that all Canadian citizens are represented. Currently, there are 308 singlemember districts in Canada. However, "every ten years after the redistribution process is conducted, the number of electoral districts can change based on the representation order."(Redistribution 2012) The redistribution process in Canada, serves as a deliberative/informative tool, in order to better represent the changes and movements in the Canadian population. (Elections Canada 2015) Once the boundaries are established, Elections Canada conducts a federal general election where the boundaries are than implemented. As previously mentioned, this thesis focuses only on the 38<sup>th</sup> and 39<sup>th</sup> general election, which consists of 308 single-member electoral constituencies. Since the number of electoral districts stays consistent, my research analyzes the changing trends from 38<sup>th</sup> to 39<sup>th</sup> general election.

The following section addresses voter turnout trend and its consequences in Canada for the time period of 1988-2011. The last section, provides an in depth contextual analysis of the 38<sup>th</sup> and 39<sup>th</sup> Canadian general election.

#### 2.2 Turnout in Canada

#### 2.2.1 Voter Turnout Trends in Canada

In order to evaluate the changes between the 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections, I begin by first analyzing the voter turnout trends within these two elections. Once again, this study does not focus on explaining the reasons behind the rapid decline in voter turnout in Canadian elections. However, it is important to provide the context of this research in order to expand our understanding of the effect of macro-level factors with voter turnout. As Figure 1, in Chapter 1 demonstrates, Canada is not an exception to voter turnout decline within the

international context. Studies on Canadian voter turnout show that "since the Second World War [turnout] has been about 75 percent of registered elections, and studies often tried to delve into the reasons for non-participation of the remaining 25 percent."(Pammett and LeDuc 2003, pp.8) The following Figure 2 confirms this decline, by providing a more in depth analysis and overview of turnout decline in Canada. In particular, it illustrates the estimated voter turnout in Canada between 1988 and 2011 during federal general elections. This continuing decline in turnout can be explained due to high costs (time and effort) to cast a ballot on election day.





**Source:** Elections Canada. 2015. *Voter Turnout*. [Online] Available: <u>www.elections.ca/</u> [Accessed March 2 2015]

Figure 2 demonstrates a continuing steep decline from the 1980s, and an almost five percent increase between the years 2004 and 2006. This increase in turnout could be explained due to the stakes of the election. The high stakes of the election are due to a motion of no confidence in the 2004 election. (Dr. Desserud 2006, pp.4) Therefore, on January 23 2006, Canadians voted for a new government. The outcome of the 39<sup>th</sup> general election resulted in a Conservative majority and a five percent increase in voter turnout.

As previously observed in Chapter 1, additional democracies such as America and the United Kingdom experienced a dramatic drop of turnout, of "only 55.5 per cent, who voted in the 2004 presidential election, and the 2001 British general election recorded a turnout of just 57.6 per cent." (Harb 2005) The increasing decline of voter turnout has the potential to face future consequences on democracy. As previously mentioned by the Center for Voting and Democracy (2015) "established democracies tend to have high turnout as other countries."(Fair Vote, 2015) Furthermore, data obtained by International IDEA (1997) also demonstrates that "a high level of political freedoms and civil liberties may contribute to a high level of voter turnout," (Pintor et. al. 2012, pp.85) confirming the importance of voting. The following section provides some of the potential consequences associated with low turnout in Canada.

#### 2.2.2 Consequences of Voter Turnout in Canada

The first consequence of low voter turnout is that it creates inequality. As previously noted by Arend Lijphart (1998), "low voter turnout means unequal and socio-economically bias turnout." (Lijphart 1998, pp.3) This is especially true in the Canadian context. For example, Andre Blais and Peter Loewen (2011) demonstrate that there is a large gap between youth and older generation voters within the 2004 and 2006 general elections in Canada. According to the Parliament of Canada (2010) there is a "32-35.3 percent" difference between older and first time voters in 2004 and 2006 general elections in Canada. (Parliament of Canada 2010) The difference between youth and older generation has significant consequences on the legitimacy of democracy in Canada. For example, as the youth becomes older and replaces the older generation, while turnout continues to decline, it has the potential to make it easier for politicians who are supposed to represent the citizens to implement policies based on what they think will represent Canadians. Therefore, if all groups of age cast their ballot it could potentially improve turnout.

Although this thesis focuses on variation of voter turnout, it is important to provide the context of turnout decline in Canadian federal general elections. Studies conducted by

Elections Canada (2015), use public opinion surveys weeks following the election in order to evaluate voters' attitudes and satisfaction with the administration and electoral process on election day. The following section provides a brief overview of Canadian electors and their experience at the polling station on election day. As part of their evaluation for the 38<sup>th</sup> and 39th general election, Environics Research Group (2005/2006) conducts nationwide telephone interviews in order to produce the final reports for Elections Canada. In their findings for both of the elections (2004 and 2006) youth and First Nations are the least likely to vote at an election due to lack of trust in the government, and/or interest in politics. In order to understand the context of the 38<sup>th</sup> and 39<sup>th</sup> general election, the following section will act as background information of the two selected elections

#### 2.3 A Brief Background of Canadian 2004 General Election

On June 28<sup>th</sup> 2004, "14, 206,233" votes were cast out of an eligible "22,471,592" registered electors. (Elections Canada 2015After the 37<sup>th</sup> General Election in 2000, Elections Canada tried to improve administration in order to ensure better satisfaction with the electoral process. As a result of continual improvements, the 2004 election was able to successfully improve on reminding youth voters of the upcoming election by sending out reminder cards. Post the 38<sup>th</sup> general election; Environics Research Group (2005) produced a final report for Elections Canada. The research group conducted a nationwide telephone survey using a sample size of "2,822 telephone interviews of Canadian electors." (Elections Canada 2005, pp.5) In sum, "83%" of the participants said that they voted during the 2004 election, however the official turnout results were only "60.9%." (Elections Canada 2005, pp.20) This can be explained by the idea that citizens do not like to admit that they did not vote because they perceive voting as a civic duty. Their survey findings confirm that, "88%" of their respondents agree with the statement that voting is a civic duty, whereas only "80%" of youth and "77%" of First nations believed this to be true. (Elections Canada 2005, pp.24)



Figure 3: Estimated Voter Turnout in Canada by Age Group, 2004 Federal General Election

**Source:** Parliament of Canada. (2010) *Estimated Voter Turnout in Canada*. [Online] Available from: <u>http://www.parl.gc.ca/</u> [Accessed April 14 2015]

Despite Elections Canada's attempt in improving voter participation among youth and First Nations, Figure 3 demonstrates that there is a continuing lack of youth participation and an increase in voters after the age of 25+. Using the theory of Campbell et al. (1960) on political attitude in 'the American Voter' this trend can be explained. Measuring political party identification as strong democrat/weak democrat, Campbell et al. (1960) are able to predict individual's voter behavior. The idea is that as voters become older, changes produced by social (national crisis) or personal (re-location, new home, etc.,) forces can influence voters' party identification and decision to vote. In light of this explanation, Elections Canada (2005) also finds a strong correlation between age and voting. Figure 4, demonstrates a strong correlation between age and turnout for the respondents post 38<sup>th</sup> general election. As the voting respondent ages, he/she is more likely to vote.



Figure 4: Estimated Voter Turnout by age Post-38th General Election

**Source:** Elections Canada (2006) *Final Report: Public Opinion Survey at the 39<sup>th</sup> General Election.* [Online]. Available from: <u>www.elections.ca/</u> [Accessed May 4 2015]

Figure 4, demonstrates a 26 percent difference between age group of 65+ and 18-24, confirming the statement that as citizens age they are more likely to engage in politics and cast a ballot on election day. Those respondents who admitted that they did not vote in the final report, provided lack of interest, lack of knowledge, busy lifestyle, and other (personal life) as their reasons. (Elections Canada 2005, pp.5) Similar to youth, First Nations ranked as the lowest group to vote. On the analysis of the final report, respondents did not vote because of the distance to the polling stations, lack of interest and knowledge. First Nations were the only group to be dissatisfied with the distance of the polling station. In total, the national sample demonstrates that "nine out of ten (90.6%)" of Canadian citizens were satisfied with the distance of the polling station and the language spoken. (Elections Canada 2005, pp.24) In total, "87%" of the respondents said they had voted at a polling station on election day, while only "11%" voted at an advance polling station, and only "2%" using a special ballot (mobile

and mail). (Elections Canada 2005, pp.21) With a vast majority of Canadian citizens voting at a polling station demonstrates the importance of traditional voting booths on election day. However, although Internet voting is currently not an option in Canadian general elections, it has been studied in the report as an alternative explanation for improving turnout. Their findings suggest that Internet voting would be a viable solution to improving turnout. In total, a majority of respondents "52%" were in favor of online voting because it would make voting easier. (Elections Canada, 2005, pp.29) Online voting was more favorable among youth and less favorable among electors 55+.

The report's findings conclude that youth and First Nations are the least likely to contribute on elections day because of lack of interest in politics and/or faith in the government. Moreover, despite satisfaction with the polling stations and electoral process, there is always room for improvement within electoral studies to make election day more efficient for the voter. The next section focuses on the 39<sup>th</sup> Canadian general election, which will examine improvements to the election process from the 38<sup>th</sup> election.

#### 2.4 A Brief Background of Canadian 2006 General Election

On January 23, 2006, "14,908,208" votes were cast out of an eligible "23,055,952"registered voters. (Elections Canada 2015) After the 38<sup>th</sup> general election in 2004, due to the accusations of a corrupt government lead by Paul Martin in 2004, the 39<sup>th</sup> election in winter served as a reminder to the importance of democracy and legitimacy in Canada. Due to the accusations, Elections Canada administered an early winter election on January 23 2006. Despite the election being held in the winter, the turnout rate increased by five percent reversing the declining trend. This leads me to question what has changed from the previous election? Similar to the previous general election (2004), youth and First Nation electors had the lowest voter turnout throughout the whole election.



Figure 5: Estimated Voter Turnout in Canada by Age Group, 2006 Federal General Election

**Source:** Parliament of Canada. (2010) *Estimated Voter Turnout in Canada*. [Online] Available from: <u>http://www.parl.gc.ca/</u> [Accessed April 14 2015]

Figure 5, demonstrates an estimated voter turnout in Canada by age group for the 39<sup>th</sup> general election. In their observations, Andres Blais and Peter Loewen (2011), determine that the gap between youth and older generation, results from socio-demographic factors such as: age, marital status, education, income, and religion. Based on these factors, Andre Blais and Peter Loewen (2011) findings suggest that as an individual becomes older they are more likely to engage in the electoral process. To be more precise, controlling for all of the socio-demographic factors, data collected from the 2006 Canadian Census, demonstrates that among those aged 19-24 and 25-29 are less likely to vote than those that are in the age group of 30-65. Moreover, a similar pattern emerges based on political information, which is measured either by "a share of correct answers to a series of factual questions or is evaluated by an interviewer." (Blais and Lowen 2011, pp.8) Based on these findings, the authors were able to conclude that "among those aged 18-24, who are regarded as having medium or high political information, vote at a rate of 23 percentage points higher than those with low

information. This gap grows to 27 percentage points among those aged 25-30." (Blais and Lowen 2011, pp.8) The persisting social-demographic gap between the youth and older generation is an issue that needs to be solved in order to sustain the legitimacy of future democracy in Canada.

In light of these findings, the report prepared for Elections Canada by Environics Research group for the 38<sup>th</sup> general elections confirms these results. In their public opinion survey, the research group conducted a nationwide telephone survey using a sample size of "3,013" Canadian electors. (Elections Canada 2006, pp.84) In their report, "close to tine in ten (87%) of Canadian electors surveyed report to have voted in the 39<sup>th</sup> general election, well above the 67.4 percent recorded as the official turnout." (Elections Canada 2006, pp.9) These findings persist to confirm that citizens do not like to admit that they did not vote in an election since they believe that voting is a civic duty and because it is socially acceptable. Similar to the previous general election, Aboriginal and youth had the lowest voter turnout. This could be explained due to the lack of interest, and trust in the government. Youth were more likely to admit that they had no interest in voting, while lack of trust in the government was higher among First Nation groups. Polling stations were once again the most favorable way to vote during the 39<sup>th</sup> general election "(86%)", following advanced voting and special ballot "(12%)". (Elections Canada 2006, pp.9) Most of the respondents were satisfied with the waiting times "87%" and language used in the polling station, except for First Nation groups and youth. (Elections Canada 2006, pp.5) Despite satisfaction with the administration there is still opportunity for improvement. Furthermore, the survey addresses Internet voting as an additional factor which could improve turnout. Although on-line voting was also not an option in the 39<sup>th</sup> general election, the likelihood of using Internet as a method to vote strongly correlates to age in their report. Youth under the age 25 years proved to be the most enthusiastic about implementing Internet voting in the near future, than those within the age

group of 55+. Additional socio-demographic factors (income and education) also had an impact on turnout and use of on-line voter registration in the near future. Individuals with low income and lack of education were found to be least likely to participate in the electoral process and use of on-line voting. While those respondents with a high income and a postsecondary education are more likely to vote in a general elections and participate in on-line voting. The following section examines the changes from the 38<sup>th</sup> to the 39<sup>th</sup> Canadian general election. Moreover, it focuses on similarities and differences within the two elections.

#### 2.5. Summary

In sum, this chapter has provided an in depth overview of the Canadian electoral process and a brief introduction of the 38<sup>th</sup> and 39<sup>th</sup> Canadian federal general elections in order to have a better understanding of Canada in the international context. The previous 38<sup>th</sup> and 39<sup>th</sup> general election saw a five percent increase in voter turnout reversing the persistent declining trend. Despite the final reports representing a sub-sample of the Canadian electorate, the figures for the 38<sup>th</sup> and 39<sup>th</sup> general election match the overall federal reports.

In the final reports—public opinion survey at the 38<sup>th</sup> and 39<sup>th</sup> General Election saw a significant improvement of youth and other electors (non-youth/Aboriginal) engaging in the electoral process. Figure 6 illustrates this improvement in voter turnout using a subsample of "3,096 Canadian voters" during the 2004 and 2006 general election. (Elections Canada 2006, pp.18) In particular, it demonstrates an 18 percent increase of youth voters, while no occurring change for Aboriginal electors. Moreover, it illustrates a two percent increase of other electors (non-Aboriginal/youth). These changes could be explained due to several factors surrounding the 2006 general election.

#### Figure 6: Respondents Reported to Have Voted at the 2006 General Election



Subsample: Aboriginal=642; Youth=678; Other=1,776 (non-Aboriginal/youth)

**Source:** Elections Canada (2006) *Final Report: Public Opinion Survey at the 39<sup>th</sup> General Election.* [Online]. Available from: <u>www.elections.ca/</u> [Accessed May 4 2015] p.18.

These factors include effective campaigning, voter registration, stakes of the election, and party polarization. Since the 39<sup>th</sup> general election was called on due to accusations of corruption that meant that there was more at stake. In a high-stakes election youth are more likely to turnout, which explains a vast 18 percent increase in youth turnout.

Moving away from micro-level perspective, the next chapter introduces an additional variable (number of polling stations) aimed at explaining voter turnout in Canadian general elections. Controlling for macro-level variables it tests the significance of the number of polling stations with turnout for the 38<sup>th</sup> and 39<sup>th</sup> general election.

## **Chapter 3: Methodology**

To evaluate the significance of the number of polling stations on turnout, I retrieved data from Elections Canada for the 38<sup>th</sup> and 39<sup>th</sup> general election. (Elections Canada 2015) In this thesis, I use this data for two types of analysis. First, I present nine types of scatterplots displaying the bi-variate relationship between the number of polling stations and turnout. Second, I create four multivariate models in order to capture a more precise essence of the relationship between the number of polling stations and turnout.

This chapter is composed of three sections. The first section introduces data and methodology used in this thesis; next, it operationalizes the dependent and independent variables, by concluding with an in depth analysis of control variables used in this study.

#### 3.1 Data and Methods

To assess whether the number of polling stations matter, this study uses a quantitative approach by analyzing data compiled by Elections Canada (2015) from the 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections. (Elections Canada 2015) This data provides researchers with free online access to election results and finance figures for each electoral district for the given 2004 and 2006 Canadian federal general elections. In Canada, these constituencies are adjusted after each "decennial census in order to reflect the changes and movements in Canada's population" (Elections Canada 2015) by an independent commission. Accordingly, elections in 2004 and 2006 were conducted using the same electoral boundaries, which were established in 1998. Previous elections, "1997, 2008, and recent election in 2011 took place using different electoral maps (drawn in 1988 and 2008)." (Wesley and Summerlee 2012, pp. 270) For the purpose of this study and reasons of comparability, I focus only on the following two elections: 38<sup>th</sup> and 39<sup>th</sup> Canadian Federal General Elections.

Focusing on the 38<sup>th</sup> and 39<sup>th</sup> general election in one country, this study increases its internal validity. Moreover, because the number of total polling stations increased by "2,525" from the 38<sup>th</sup> to the 39<sup>th</sup> general election (Elections Canada 2015), while the districts remained the same, this research tests whether a change in the number of polling stations has an effect on turnout. To do so, the study regresses the change in independent variables on the change in the dependent variable, turnout. Treating turnout as the dependent variable, I create bivariate and multivariate models. The bivariate models use a Pearson's product-moment correlation in order to test the independent variables (mobile, stationary, and total) with turnout. The first model tests the relationship between mobile and stationary polling stations with turnout. Second, I add the total number of polling stations and correlate it with turnout. In the third and fourth model, I test the relationship between the change in mobile, stationary, and total polling stations with turnout. Following the bivariate analyses, I use a linear regression model, to test the relationship between number of polling stations and turnout, while controlling for incumbency, candidate expenses, available candidates, electorate population, and candidate percentage difference, with turnout. Together the level and first difference equations are able to test if more polling stations will lead to higher turnout.

## 3.2. Operationalization of Dependent and Independent Variables

#### 3.2.1 The Dependent Variable Defined: Voter Turnout

Voter turnout is one way to measure citizen engagement. According to Pintor et al. (2012) "voter turnout is usually expressed as a percentage of voters who cast a vote at an election." (Pintor et al. 2012, pp. 75) This method of measuring turnout is used in Canada and in my study. Other ways to measure turnout, is "the number of registered voters and estimated voting age population (VAP)", (Pintor et al. 2012, pp. 76) which is currently used by International IDEA. In Canadian federal general elections, 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." (Elections Canada 2015) Moreover, turnout is measured by the total votes per district for each Canadian province during the 38th (2004) and 39th (2006) general election.

To measure the dependent variable in Canadian elections, I divide the number of voters by the electorate population counted by Elections Canada for each district and multiply it by 100 in order to express turnout as a percentage of voters who cast a ballot during the 38<sup>th</sup> and 39<sup>th</sup> Canadian general election. Turnout in this study considers the votes cast and rejected. Those electors that are eligible to vote are defined as citizens 18+ in the data.

#### 3.2.2. The Independent Variable Defined: Polling Stations

The independent variable is the number of polling stations in each electoral district (mobile, stationary, and total). To operationalize the independent variable, I also sum the total number of polling stations in each electoral district for the 38<sup>th</sup> and 39<sup>th</sup> general election. In particular, I use data collected from Elections Canada (2015) in order to sum the total mobile, stationary polling stations to obtain the result for the total polling stations in my analysis. (Elections Canada 2015)

The number of available returning officers defines the number of polling stations. For example, "the returning officer in each electoral district is in charge of approximately 184 to 200 polling stations that serves about 350 electors." (Elections Canada 2015) The Canadian electoral districts are determined by the population density in order to reflect on the changes and movements in Canadian population after each census. (Elections Canada 2015) Mobile polling stations are defined as "booths that can be transported from room to room to facilitate voting," (Elections Canada 2015) which are available to that electorate who are unable to physically make it to the stationary booth on election day (those who live in residences/ hospitals).

While the main goal of the study is to test the relationship between the number of polling stations (stationary and mobile) in Canadian 2004 and 2006 General Elections, I control for several macro-level factors, which are further examined in the following section.

#### 3.3. Control Variables

The first variable I control for is electorate population, which takes into account the number of eligible voters available in a constituency per election. It is important to control for electorate population because population continuously changes in Canada. Second, I control for incumbency in order to examine if incumbency advantage influences voters' decision to go to the polling station on election day. This variable is important in this study because it focuses on voters' satisfaction with the running candidates. According to Scott Ashworth and Ethan Bueno de Mesquita (2008), "voters elect candidates whom they like on some dimension (e.g., ability or trustworthiness), so, compared to the average challenger, candidates who have won in the past are relatively more attractive on that dimension." (Ashworth and Bueno De Mesquita 2008, pp. 1006) Third, I control for ballot length in order to examine if the number of candidates per ballot impacts the formation of lines on election day. Fourth, I control for total candidate campaign expenditure which examines direct/indirect voter mobilization. Lastly, I control for electoral competitiveness, which is a well-studied variable in electoral studies. It examines the difference between winner and runner-up in a given election. This difference will help examine the impact of competitiveness on voters' behavior to vote. Controlling for these variables, this study will be able to examine the relationship between the number of polling stations and turnout. The following section provides a thorough analysis of these variables.

#### 1. Electorate Population

For the first control variable, electorate population, I hypothesize that those electoral districts with larger populations will have higher voter turnout. Moreover, the figures

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presented in this study are estimates of the total electorate population. In Canadian federal general elections, electorate population is calculated by "dividing the number of voters by the population of voting age (the 'age-eligible population)." (Geys 2006, pp.3) In Canada, 18 years is when one is legally allowed to vote. Therefore, I expect greater turnout where electorate population is high.

#### 2. Incumbency

The second variable I control for is incumbency. I hypothesize that incumbency advantage will impact voter turnout. Previous research by Marco Alberto De Benedetto and Maria De Paola (2013), establish that "having an incumbent among candidates at the electoral race can affect turnout through both indirect and direct channels." (De Benedetto and De Paola 2013, pp.14) Using "the incumbency advantage (disadvantage), [the incumbent candidate] can reduce (increase) the degree of political competition and, as a consequence, voters might be less (more) inclined to participate." (De Benedetto and De Paola 2013, pp.14) In the data set, I include a dummy variable for incumbency status in order to control for the incumbency advantage. I code the control variable as 1 if the candidate is an incumbent, 0 if not. Potentially agreeing with Marco Alberto De Benedetto and Maria De Paola (2013), I hypothesize that incumbency advantage will have an effect on turnout because the electorate will feel inclined to participate if they feel directly or indirectly close to the candidate.

#### 3. Ballot Length

Third, I control for the length of the ballot, which is measured by the number of candidates available as a choice to the electorate. In a Canadian federal general election, an unlimited amount of candidates can run in an electoral district. The winning candidate is then elected as a Member of Parliament for that constituency. Between 2004 and 2006 Canadian general election, there were 12 (2004) and 15 (2006) available candidates on a ballot. (Elections Canada 2015) Potentially agreeing with Douglas M. Spencer, and Zachary S.

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Markovits (2009), the length of the ballot matters because it could affect the length of the line, thereby potentially influencing total ballots cast. Therefore, I hypothesize that the length of the ballot could influence waiting times to cast a ballot, making it more time consuming to cast a ballot for the electorate. For example, an increase in the number of candidates per ballot has the potential to influence the formation of lines because voters would take longer to choose a candidate.

#### 4. Candidate Percentage Difference (Winner and Runner-Up)

Fourth, I control for electoral competitiveness on turnout. I measure competitiveness on turnout, by subtracting the winning candidate from the second-best placed candidate, and transforming the difference into percentage. Previous research conducted by Marc N. Franklin (2004) at the aggregate level on turnout purposes, that "highly competitive elections generate higher turnout than elections whose outcome is felt to be a foregone conclusion." (Franklin 2004, pp.1) Potentially agreeing with Franklin (2004), I hypothesis that highly competitive elections will result in higher turnout in 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections. For example, I expect increase in electoral competitiveness to have an effect on turnout because the competition would appeal to the electorates and encourage the electorate to vote.

#### 5. Total Candidate Campaign Expenses

Lastly, I control for the total candidate campaign expenses in financing by adding all of the running candidates' campaign expenses. I hypothesize that, an increase in cost expenditures will effect turnout. As previously argued by Robert K. Giodel et al. (1999), candidates spend their money indirectly and directly. To be more precise, their assumption is "that most of this money [is] strategically spent on indirect mobilization (or mass appeals) such as television spots or radio ads. Based on such analysis…reductions in campaign spending would likely result in fewer individuals mobilized and recruited into political

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activity." (Giodel et al. 1999, pp.112) Based on these assumptions, I hypothesize that candidates with the most financial expenditure will mobilize, and facilitate political engagement. In the analysis, cost expenditure refers to money spent on campaign expenses (advertising radio and television expenses, miscellaneous expenses, salaries, wages, and office expenses). In particular, I expect that increasing financial candidate campaign costs will improve turnout because of direct/indirect candidate mobilization.

#### 3.4. Summary

In sum, using data collected by Elections Canada (2015) for the 38<sup>th</sup> and 39<sup>th</sup> general election, this chapter has provided an overview of the variables that will be used in this study to test the relationship between the number of polling stations and turnout. The following chapter will than test this relationship by creating eight models: four bi-variate and four multivariate models. The bi-variate models will test the significance between polling stations with turnout, while multivariate models will control for incumbency, electoral competitiveness, ballot length, candidate campaign financing, and electorate population to test the relationship between number of polling stations and turnout. By controlling for these factors the next chapter explains additional determinants that could influence turnout in Canada.

## **Chapter 4: Findings of Empirical Analysis**

This chapter uses data collected by Elections Canada for the 38<sup>th</sup> and 39<sup>th</sup> federal general election, to test the significance of the number of polling stations with turnout. (Elections Canada 2015) To test this relationship, I control for macro-level factors (incumbency, candidate campaign expenses, electoral competitiveness, ballot length, and electorate population.) As discussed in my methodology chapter (Chapter 3), I create eight models: four bi-variate and four multivariate. In order to provide the leading factors of voter turnout within the 38<sup>th</sup> and 39<sup>th</sup> Canadian federal general election, I regress the change in independent variables with the change in the dependent variable (turnout). Together the level and first difference equations test both if more polling stations will lead to higher turnout.

#### 4.1. Determinants of Voter Turnout

I focus on the macro-level factors in sections 4.2, 4.3, and 4.4, which examine additional causes of voter turnout. An additional determinant could be population density in Canada, however, since the data for population density is only publicly available per province, this study is unable to use it as a control variable. Instead, I control for several other macro-level factors, while analyzing the relationship between number of polling stations and voter turnout for the 2004 and 2006 federal general election.

#### 4.2. The 2004 Canadian General Election

This section is comprised of two parts. The first section analyses mobile and stationary polling stations separate with turnout. The second section focuses on the total polling stations, summing the total number of mobile and stationary polling stations for the 39<sup>th</sup> general election.

#### 4.2.1. Mobile and Stationary Polling Stations

First, I test the relationship between polling stations and turnout for the 38<sup>th</sup> Canadian federal general election. As the number of polling stations increases per district, I expect it to reduce the costs (time and energy) for the electorate to cast a ballot and improve turnout. Figure 6 and 7 demonstrate the relationship between the estimated total number of mobile and stationary polling stations with turnout for the 38<sup>th</sup> Canadian general election.

Figure 6: Estimated correlation of the number of Mobile Polling Stations with Turnout in Canada 2004 Federal General Election



Figure 7: Estimated correlation of the number of Stationary Polling Stations with Turnout in Canada 2004 Federal General Election



The fitted regression lines in Figures 6 and 7, display graphs representing a negative correlation between the number of mobile and stationary polls with voter turnout for the 2004 election .Table 1 of the Appendix also confirms this relationship. Although mobile polling stations do not have an effect in Figure 6, Figure 7 reveals a graph with a statistically

significant relationship between stationary polls and turnout (p<0.05). As demonstrated in Figure 7, as the number of stationary polls increases it reduces turnout.

In my analysis the results are substantively clear: the closer the election the more likely that turnout will increase. Table 5 of the Appendix contains statistical evidence underlying the relationship within our discussion. In particular, the table demonstrates that there is no statistical significance for mobile and stationary polls while controlling for macro-level factors. Nevertheless, other factors such as ballot length, electoral competitiveness, and total candidate campaign expenditure had an effect on turnout. For example, Table 5 of the Appendix displays a negative and statistically significant relationship between ballot length and turnout (p<0.05). This finding is only present in Table 5 during the general election held in 2004. This implies that as the number of candidates available on the ballot increases, turnout decreases.

Other factors such as electoral competitiveness and electoral population also had an effect on turnout. For example, as electoral competitiveness increases between candidates it also influences the rate of turnout within the 38<sup>th</sup> general election. Furthermore, electoral population displays a significant relationship with turnout (p<0.001). In result, as the population in an electoral district increases voter turnout decreases. This implies that as the population increases in an electoral district more electorates feel they are less likely to influence the result of the election. Other factors such as candidate campaign financing also had a positive and significant impact on turnout. As candidates spend more money on elections—turnout increases. This could be explained due to indirect/direct mobilization. For instance, as candidates spend more money on mobilizing electorate, this results in an increase in turnout rate.

These findings demonstrate no significant relationship between mobile and stationary polling stations with turnout for the 38<sup>th</sup> Canadian federal general election. Instead the results

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are clear: electoral competitiveness, ballot length, and candidate campaign expenditure has a significant effect on turnout. This implies that in my analysis of the Canadian 2004 general election, competition between candidates (winner and runner-up), ballot length, and candidate campaign spending were key factors to influencing turnout.

#### 4.2.2. Total Polling Stations

After the analysis of mobile and stationary polling stations, I sum the total number of polls in each constituency to test the relationship between the total number of polling stations and turnout. The second bi-variate model in Table 2 of the Appendix demonstrates this relationship. For example, it illustrates a negative and significant impact with turnout (p<0.05).





Figure 8 reveals a graph with a negative relationship between total sum of mobile and

stationary polling stations per electoral district with turnout during the 38<sup>th</sup> general election (p < 0.05). This demonstrates that as the total number of polling stations increases in an electoral district it reduces the rate of turnout. This relationship is similar to the one discussed earlier in my analysis, when I control for incumbency, electorate population, electoral competitiveness, candidate campaign financing, and ballot length. For example, Table 6 of the Appendix reveals that the total number of polling stations has no significant impact on turnout for the 38<sup>th</sup> general election. Specifically, as the number of total polling stations increases per constituency it does not reduce the costs (time and energy) of voting. Other factors, such as incumbency, ballot length, and electorate population have no impact on the rate of turnout. Nevertheless, Table 6 illustrates a negative and significant impact of electoral competitiveness on turnout. Despite its negative effect, this finding confirms previous literature on Canadian elections (Wesley and Summerlee 2012), which find that electoral competitiveness does have an impact on the rate of turnout. Following this finding, this study reveals that when the number of electorates increases in an electoral district, turnout decreases. This implies that an increase in the electorate population could deter people from casting a ballot because they would feel that their vote would not make a difference.

The results in my analysis for the 38<sup>th</sup> Canadian federal general election reveal no significant relationship between the number of polling stations (mobile, stationary, and total) and voter turnout. Instead, once I control for macro-level factors (incumbency, ballot length, candidate campaign financing, electoral population, and electoral competitiveness) the results are substantively clear: candidate campaign financing and electoral competitiveness has a significant effect on turnout. This implies that voters during the 2004 general election were more likely to vote once mobilized by political candidates directly/indirectly.

The next section tests whether these results are parallel to the ones during the 2006 Canadian general election.

#### 4.3. The 2006 Canadian General Election

Moving from the 38<sup>th</sup> Canadian general election, the 39<sup>th</sup> winter election had an estimated increase of five percent in turnout rate. Treating turnout as the dependent variable, I once again control for incumbency, electorate population, ballot length, electoral

competitiveness, and candidate campaign finances in order to test the relationship between the number of polling stations and turnout.

This section is comprised of two parts. The first part analyzes mobile and stationary polling stations separate with turnout. The second section focuses on the total polling stations, summing the total number of mobile and stationary polling stations for the 39<sup>th</sup> general election.

### 4.3.1 Mobile and Stationary Polling Stations

Next, I create a fourth bi-variate model. Figure 9 and 10 demonstrate graphs that illustrate a positive and significant relationship for mobile and stationary polling stations with turnout for the 39<sup>th</sup> Canadian general election. Table 2 of the Appendix confirms these results.





#### **Figure 10: Estimated Correlation of the Number of Stationary Polling Stations with Turnout in Canada 2006 Federal General Election**



However, when I once again control for macro-level factors, my results indicate otherwise. For example, Table 5 of the Appendix reveals that the number of mobile and stationary polling stations per electoral district has no significant impact on turnout. Other factors such as ballot length, electoral competitiveness, and incumbency have no effect on the turnout rate. Despite, the lack of effect of several variables on turnout in this study, Table 5 in the Appendix demonstrates a positive and significant relationship for the total candidate campaign expenses. Similar, to the 38<sup>th</sup> general election, an increase in candidate campaign expenditure and electoral competitiveness has a significant impact on the rate of turnout.

#### **4.3.2 Total Polling Stations**

Next, to test the relationship between the total number of polling stations and turnout, I add the total number of mobile and stationary polling stations for the 39<sup>th</sup> Canadian general election. Treating turnout as the dependent variable, I create a bi-variate model to determine whether the total number of polling stations has an influence with turnout during the 2006 Canadian federal general election.

Figure 11: Estimated Correlation of the Number of Total Polling Stations with Turnout in Canada 2006 Federal General Election



In result, Graph 6 demonstrates a positive and significant relationship between the total number of polling stations and turnout (p<0.05). Table 2 of the Appendix confirms these results. However, when I control for incumbency, electorate population, ballot length, electoral competitiveness, and total candidate campaign financing, the results change significantly. For example, Table 6 demonstrates no significant impact on turnout for the total number of polling stations in 2006. Instead, there is a positive and significant relationship between electoral competitiveness and turnout (p<0.01), as well as, total candidate campaign expenditure and turnout. This implies that as the competitiveness increases between candidates and campaign costs increase, voters are more inclined to vote.

The next section provides with the first difference equations, I test if more polling stations will lead to higher turnout. In particular, I regress the change in independent variables with the change in the dependent variable (turnout) to determine whether the change in number of polling stations had an effect on turnout.

#### 4.4. Changes in 2004 and 2006 General Election

The next model to capture the difference and change in the electoral process, focuses on the change of number of mobile (792) and stationary (1733) polling stations within the two

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elections. (Elections Canada 2015) Since the number of polling stations increased from the 38<sup>th</sup> to the 39<sup>th</sup> general elections, while the districts remained the same, this section tests whether a change in the number of polling stations triggers a change in turnout.

### 4.4.1 Change in Mobile and Stationary Polling Stations

Although the gains in number of polling stations are encouraging, it must not be forgotten that some Canadian voters still complain about accessibility and efficiency on election day (Jackson 2014; CBC News 2014; CTV Montreal 2014). This change can be further analyzed by creating a bi-variate model in order to test its significance with turnout.





**Figure 13: Estimated Correlation of the Change in Number of Stationary Polling Stations with Turnout in Canadian Federal General Elections** 



Figure 12 demonstrates a graph with a positive and insignificant relationship between the number of mobile polling stations with turnout for the  $39^{th}$  general election (p<0.05). While, Figure 13 reveals a negative and also insignificant relationship between stationary polls and turnout (p<0.05). These findings can also be found in Table 3 of the Appendix. Moreover, these findings are also present once I control for macro-level factors in this study. Table 7 and 8 of the Appendix confirm this relationship. Table 7 reveals a positive and insignificant relationship for mobile polls, while revealing a negative and insignificant relationship between stationary polling stations and turnout. Despite insignificant results, total candidate campaign expenditure has a positive and significant impact on turnout. Table 7, illustrates this relationship with the coefficients of 0.029, and an estimated standard error of 0.016 (p<0.1). Further factors such as incumbency and ballot length established no impact on improving turnout.

#### 4.4.2 Change in Total Polling Stations

In the last model, in order to capture the total change in polling stations per electoral district with turnout, I sum the total number of mobile and stationary polling stations for the 39<sup>th</sup> general election and subtract the two elections to receive the difference. The fourth bivariate model I create tests the relationship between the changes in total polling stations for each electoral district with turnout. **Figure 14: Estimated Correlation of the Change in Number of Total Polling Stations** with Turnout in Canadian Federal General Elections



Figure 14 illustrates a graph with a positive and significant relationship between the total changes in polling stations with turnout (p<0.05). This finding is also present in Table 4 of the Appendix. However, when I once again control for the macro-level factors in this study, results reveal that the total changes in polling stations does not impact turnout. Instead total candidate campaign expenditure and electoral competitiveness does. To be precise, with an increase of "1006.25 Canadian dollars" in campaign costs from the 38<sup>th</sup> to the 39<sup>th</sup> general election (Elections Canada 2015), turnout could have increased by five percent. Moreover, this could be because of mobilization. With more money available to mobilize youth, First Nations, and other Canadian voters, could improve turnout. Another important factor, competitiveness of the race, also shows to have a significant effect on turnout. In contrast, the two remaining variables (incumbency and ballot length) demonstrate no significant relationship with turnout.

#### 4.5. Summary

The overall aim of this chapter was to provide alternative factors, which could affect turnout and reduce the costs (time and energy) of voting. In particular, treating voter turnout as the dependent variable, this chapter tested the relationship between the number of polling stations (mobile, stationary, and total) and turnout. Controlling for the size of the electorate, the incumbents' party, the number of candidates, the competitiveness of the race and relevant aspects of campaign finances, this chapter concludes that the number of polling stations had no significant impact on voter turnout in the 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections. Moreover, it demonstrates that with an increase in "2, 525" number of polling stations from the 38<sup>th</sup> to the 39<sup>th</sup> Canadian general election (Election Canada 2015), polling stations did not improve turnout. Instead, electoral competitiveness and total candidate campaign expenditure had a significant impact on the rate of turnout.

These findings demonstrate that competitiveness between candidates and higher campaign expenditure is conductive to higher turnout. Furthermore, the number of polling stations is high enough in every district for them to have any effect on turnout. Perhaps, the number of polling stations could influence turnout, if there was much fewer/more polling stations. However, increasing the number of polling stations by a small amount will not have a significant impact on turnout. Instead, my study indicates that in order to reduce the costs (time and energy) to cast a ballot in order to improve turnout, elections officials should focus on other variables (campaign costs and competitiveness). There is some robust evidence that demonstrates that the total candidate expenses have a positive and significant (p<0.01) impact on turnout for the two elections. Nevertheless, these findings also entail that elections are experienced differently throughout the constituencies. For example, each general election is influenced by different macro level factors potentially influencing the rate of turnout. Therefore, my findings suggest looking at other venues to increase turnout in elections than further reduce the costs' of voter participation.

## Conclusion

In short, there are various explanations proposed at the micro (age, race, and gender) and macro level (registration laws, electoral process, and electoral system) to explain variation in voter turnout. However, this thesis focuses on macro-level research in order to better understand previous political and historical effects on turnout. More specifically, in my sample of 308 single-member electoral districts within Canada, voting is increased by an estimated of five percent from the 38<sup>th</sup> to the 39<sup>th</sup> general election due to various micro-macro level factors. Therefore, studying variation in turnout at the macro-level, this study suggests increasing the number of polling stations (mobile, stationary, and total) could improve turnout in the Western world and within the international context.

The explanation used to justify my argument is based on a theoretical model proposed in Chapter 1 of my thesis. The idea of the theoretical framework provided by Downs (1957), and later reinterpreted by Riker and Ordeshook (1968) predicts voter participation in elections. This theory focuses on the benefits and costs of voting for the electorate. I adopt their model in order to examine ways to improve turnout by focusing on the costs (time and energy) of voting for the electorate. More specifically, I focus on decreasing the costs of voting (time and energy), which could potentially reduce the time and commitment it takes to cast a ballot for the voter.

Next, to answer the general question of my research, I focus on Canada as a case study to test the relationship between the number of polling stations and turnout during the 38<sup>th</sup> and 39<sup>th</sup> Canadian general elections. My findings reveal that when I control for macro-level factors such as: incumbency, electorate population, ballot length, candidate campaign financing, and electoral competitiveness—the number of polling stations (mobile, stationary, and total) has no effect on turnout. This implies that the number of polling stations is high

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enough in every district for them to have any effect on turnout. Perhaps, the number of polling stations could influence turnout, if there was much fewer/more polling stations. However, increasing the number of polling stations by a small amount will not have a significant impact on turnout.

Instead, there is robust evidence that demonstrates that total candidate campaign expenditure has an effect on turnout. This finding confirms previous discoveries of improving turnout by Giodel et al. (1999). With an increase in money provided by the government for campaign expenditure, voters are more likely to be mobilized both directly and indirectly through media advertisements. My findings are both encouraging and discouraging for election officials and electoral studies' scholars. Encouraging because it demonstrates that there is potential to increase turnout. Discouraging because it demonstrates that costs and competition between candidates are an essential factor in solving this issue. Further areas in which this research could be worth persuading are the role of finances on electoral turnout. Hence there is the prospect that increasing candidate campaign expenditure will continue to improve turnout years to come during federal general elections.

Moreover, this finding also tells us about the relevance of rational choice theory. The costs of voting are determined by the time and energy that an electorate has to spend to vote; the benefits of voting are considered here as civic duty or support for the democracy; the likelihood that your vote counts is determined by the closeness of the elections and the number of electors. Based on my findings, voters try to maximize their benefits and decrease their costs not by the number of polling stations available to them. Instead they maximize their benefits through candidates and their policies. Therefore, this study suggests considering other avenues to increase turnout in elections than further reducing the costs' of voter participation.

Since electoral competitiveness and total candidate campaign expenditure had a significant impact on voter turnout, data collected by Elections Canada for the 38<sup>th</sup> and 39<sup>th</sup> federal general election, is a good start in analyzing additional determinants of turnout. However since elections differ in each country and jurisdiction, this study is restricted on its external validity. Although this study confirms popular notion of voter turnout, in order to understand fully civic engagement in Canada, past and future Canadian elections could be further studied to confirm the results analyzed in this study. In particular, future studies could focus on examining the elections prior to 2004, as this is when voter turnout was the lowest. Furthermore, since the electoral boundaries change every ten years based on the redistribution formula, researchers will need to focus on the changes produced in the electoral map.

Other factors that are worth studying in electoral studies to improve turnout are advanced and Internet voting. The idea of advanced voting is that it could increase turnout in two ways: "1) Ability to vote on more than one day increases the ease of voting; citizens have a greater range of options when they can cast their vote. 2) Creates opportunities for parties and candidates to mobilize voters." (Blais et al. 2007, pp.23) An increase in voting days could potentially ease voting by decreasing the costs (time and energy) and improve turnout. Internet voting could also decrease the costs of voting for the electorate that are unable to physically make it to the polling station on election day, and decrease administrative costs.

Research on voter turnout, could potentially study how macro level factors impact voters at the individual level. This will create a series of new challenges and speculations for a better understanding of voter turnout in Canada and within the international context.

## Pearson's product-moment correlation of the number of Mobile and Stationary Polling Stations with Turnout in Canada 2004 and 2006 Federal General Election

	2004			2006	
Independent	r	<i>p</i> -Value	r	<i>p</i> -Value	
Mobile Polling Stations	-0.035	0.5425	0.048	0.402	
Stationary Polling Stations	-0.125	0.028	0.139	0.015	
Ν		308		308	

\*Correlation is significant at p < 0.05

## Table 2

## Pearson's product-moment correlation of the number of Total Polling Stations with Turnout in Canada 2004 and 2006 Federal General Election

	2004		200	)6
Independent	r	<i>p</i> -Value	r	<i>p</i> -Value
Total Polling Stations	-0.124	0.028	0.16	0.005
Ν		308		308

\*Correlation is significant at p < 0.05

## Pearson's product-moment correlation of the number of Total Polling Stations with Turnout in Canada Change 2004 and 2006 Federal General Election

	Change from 2004-2006		
Independent (Change)	r	p-Value	
Mobile Polling Stations	0.076	0.180	
Stationary Polling Stations	-0.021	0.709	
Ν	308	308	

\*Correlation is significant at p < 0.05

#### Table 4

## Pearson's product-moment correlation of the number of Total Polling Stations with Turnout in Canada Change 2004 and 2006 Federal General Election

	Change from 2004-2006		
Independent (Change)	r	p-Value	
Total Polling Stations	0.0005	0.992	
Ν	308	308	

\*Correlation is significant at p < 0.05

Factors	2004	2006	
Independent			
Mobile Polling Stations	-0.082 (0.191)	0.025 (0.045)	
Stationary Polling Stations	0.041 (0.035)	0.001 (0.014)	
Control			
Electorate Population	-0.312 *** (0.093)	0.052 (0.036)	
Incumbency	0.187 (1.458)	-0.650 (0.693)	
Ballot Length	-1.236 * (0.589)	-0.328 (0.230)	
Candidate Percentage Difference (Winner and Runner-up)	-0.047 (0.040)	-0.055 ** (0.018)	
Total Campaign Expenses	0.067 *** (0.020)	0.008 (0.008)	
$R^2$	0.12	0.11	
Adjusted R <sup>2</sup>	0.10	0.09	
Ν	308	308	

# Determinants of Voting in Canada 2004 and 2006 Federal General Election

*Notes:* \*\*\* p < 0.001, \*\* p <0.01, \* p < 0.05, . p <0.1; robust standard errors are in parentheses.

Factors	2004	2006
Independent		
Total Polling Stations	0.033 (0.033)	0.004 (0.012)
Control		
Electorate Population	-0.298 ** (0.090)	0.046 (0.032)
Incumbency	0.214 (1.456)	-0.699 (0.112)
Ballot Length	-1.208 * (0.587)	-0.327 (0.259)
Candidate Percentage Difference (Winner and Runner-up)	-0.048 (0.039)	-0.053 ** (0.017)
Total Campaign Expenses	0.068 *** (0.020)	0.008 (0.008)
$R^2$	0.12	0.11
Adjusted R <sup>2</sup>	0.10	0.09
Ν	308	308

## Determinants of Voting in Canada 2004 and 2006 Federal General Election

*Notes:* \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05, . p < 0.1; robust standard errors are in parentheses.

Factors (Change)	Change in 2004 and 2006
Independent (Change)	
Mobile Polling Stations	0.213 (0.150)
Stationary Polling Stations	-0.020 (0.044)
Control (Change)	
Electorate Population	0.085 (0.251)
Incumbency	-0.530 (0.996)
Ballot Length	0.058 (0.563)
Candidate Percentage Difference (Winner and Runner-up)	0.098 * (0.044)
Total Campaign Expenses	0.029 . (0.016)
$\mathbb{R}^2$	0.037
Adjusted R <sup>2</sup>	0.015
Ν	308

# Determinants of Voting in Canada Estimated Change in 2004 and 2006 Federal General Election

*Notes:* \*\*\* p < 0.001, \* p < 0.05, . p<0.1; robust standard errors are in parentheses.

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Factors	Change in 2004 and 2006
Independent (Change)	
Total Polling Stations	0.002 (0.042)
Control (Change)	
Electorate Population	0.049 (0.250)
Incumbency	-0.729 (0.988)
Ballot Length	0.109 (0.563)
Candidate Percentage Difference (Winner and Runner-up)	-0.096 * (0.044)
Total Campaign Expenses	0.028 . (0.016)
$\mathbb{R}^2$	0.031
Adjusted R <sup>2</sup>	0.011
Ν	308

# Determinants of Voting in Canada Estimated Change in 2004 and 2006 Federal General Election

*Notes:* \*\*\* p < 0.001, \* p < 0.05, . p < 0.1; robust standard errors are in parentheses.

# **Bibliography**

Abramson, R. Paul, and Aldrich H. John. (1982) "The Decline of Electoral Participation in America." *American Political Science Review*, Vol. **76**, Issue 3. pp. 502-521.

Alvarez, R. Michael, and Nagler, Jonathan. (2002) "Assessing the Potential of Internet Political Participation in the United States: A Resource Approach." *American Politics Research*, Vol. 30, No. 5. pp. 476-498.

Agranov, Marina, Caplin, Andrew, and Tergiman, Chloe. (2012) *Naïve Play and the Process of Choice in Guessing Games*. Pasadena, CA: Mimeo, California Institute of Technology.

Ashworth, Scott, and Bueno De Mesquita, Ethan. (2008) "Electoral Selection, Strategic Challenger Entry, and the Incumbency Advantage." *The Journal of Politics*, Vol. **70**, No.4 pp.1006-1025.

Blais, André, Dobrzynska, Agnieszka, and Loewen, Peter. (2007) *Potential Impact on Extended Advance Voting on Voter Turnout*. [Online] Available from: http://www.elections.ca/ [Accessed April 17 2015]

Blais, André, and Loewen, Peter. (2011) *Youth Electoral Engagement in Canada*. [Online] Available from: <u>http://www.elections.ca/</u> [Accessed April 14 2015]

Blais, André. (2000) *To Vote or Note To Vote? The Merits and Limits of Rational Choice Theory*. Pittsburgh, PA: University of Pittsburgh Press.

Birch, Sarah. (2008) *Full Participation. A Comparative Study of Compulsory Voting.* Manchester: Manchester University Press

Brady, E. Henry, and John E. Mcnulty. (2011) "Turning Out to Vote: The Costs of Finding and Getting to the Polling Place." *American Political Science Review* 105 (01): pp. 115-134.

Carpini, Delli, X. Michael. (1997) "Review of Norman H. Nie, Jane Junn, Kenneth Stellik-Barry, Education and Democratic Citizenship in America." [Online] *The American Political Science Review*, Vol. **91**, No.4. Available from: <u>http://repository.upenn.edu/</u> [Accessed May 29 2015] pp.971-972.

Campbell, Angus, Converse, E. Philip, Millers, E. Warren, and Stokes, E. Donald. (1960) *The American Voter*. New York: Wiley, pp. 120-167.

CBC News. (2014) Toronto Election: Long Lines hang up voters at some polling stations. [Online] *CBC News*, in press, October 28 2014. Available from: <u>http://www.cbc.ca/</u> [Accessed April 30 2015]

CBC News. (2014) Vancouver Election: Long lineups reported at many polling stations. [Online] *CBC News*, in press, November 15 2015. Available from: <u>http://www.cbc.ca/</u> [Accessed April 30 2015]

CTV Montreal. (2014) Long lines, missing ballots plague school board elections' advance polls. [Online] *CTV Montreal*, in press, October 24 2014. <u>http://montreal.ctvnews.ca/</u> [Accessed April 30 2015]

Colomer, Josep. (1991) "Benefits and Costs of Voting." *Electoral Studies* 10 (4): 313-325.

Dalton, J. Russel and Klingemann, Hans-Dieter. (2007) *The Oxford Handbook of Political Behavior*. [Online] Oxford University Press Inc.: New York. Available from: <u>https://books.google.ca/</u> [Accessed June 5 2015]

Darmofal, L. David. (2006) The Political Geographic of macro-level turnout in American political development. [Online] *Political Geography*, 23(2). pp. 123-150.

De Benedetto, A. Marco, and De Paola, Maria. (2013) *The Impact of Incumbency on Turnout: Evidence from Italian Municipalities*. Technical report. IZA Discussion Paper.

Downs, Anthony. (1957) An Economic Theory of Democracy. Harper and Row: New York.

Doody, Brian. (2007) *Canada's Electoral System: Introduction to Federal and Provincial Elections*. [Online] Available from: <u>http://mapleleafweb.com/</u> [Accessed May 30 2015]

Dr. Donald, Desserud. (2006) The Confidence Convention under the Canadian Parliamentary System. [Online] *Canadian Study of Parliament Group*, No.7. Available from: <u>http://www.studyparliament.ca/</u> [Accessed April 25 2015]

Elections Canada (2005) *Final Report: Public Opinion Survey at the 38<sup>th</sup> General Election.* [Online]. Available from: <u>http://www.elections.ca/</u> [Accessed May 4 2015]

Elections Canada (2006) *Final Report: Public Opinion Survey at the 39<sup>th</sup> General Election.* [Online]. Available from: <u>http://www.elections.ca/</u> [Accessed May 4 2015]

Elections Canada. (2008) *Estimation of Voter Turnout by Age Group at the 39<sup>th</sup> Federal General Election, January 23, 2006*. [Online] Available from: <u>http://www.elections.ca/</u> [Accessed May 31 2015]

Elections Canada. (2015) *Voter Turnout*. Available: <u>http://www.elections.ca/</u> [Accessed February 14 2015]

Elections Canada. (2015) *Data*. Available: <u>http://www.elections.ca/</u> [Accessed February 14 2015]

Elections Canada. (2015) *Redistribution of Federal Electoral Districts*. [Online] Available from: <u>http://www.elections.ca/</u> [Accessed April 25 2015]

Elections Canada (2015) *Estimation of Voter Turnout by Age Group and Gender at the 2011 Federal General Election*. [Online] Available from: <u>http://www.elections.ca/</u> [Accessed May 30 2015]

Fair Vote. (2015) *Voter Turnout*. [Online] Available from: <u>http://www.fairvote.org/</u> [Accessed May 28<sup>th</sup> 2015] Farber, S. Henry. (2010) "Rational Choice and Voter Turnout: Evidence from Union Representation Elections." *NBER Working Paper no. 16160.* 

Fowler, H. James, and Smirnov, Oleg. (2007) *Mandates, Parties, and Voters: How Elections Shapes the Future.* Temple University Press: United States of America.

Franklin, N. Mark (2004) *Electoral Competitiveness and Turnout: How Voters React to the Changing Character of Elections*. Paper prepared for presentation at the annual Meeting of the Midwest Political Science Association, Chicago, II.

Franklin, N. Mark. (2004) Voter Turnout and the Dynamics of Electoral Competition in Established Democracies since 1945. Cambridge University Press: New York.

Geys, Benny. (2006) Explaining voter turnout: A review of aggregate-level research. [Online] *Electoral Studies* Vol, **25**. Available from: <u>http://www.wzb.eu/</u> [Accessed May 30 2015]

Giodel, K. Robert, Gross, A. Donald, and Shields, G. Todd. (1999) *Money Matters: Consequences of Campaign Finance Reform in U.S. House Elections*. Rowman & Littlefield Publishers, Inc. Oxford: England.

Gosnell, F. Harold. (1930) Why Europe Votes. The University of Chicago Press: Chicago.

Goerres, Achim, and Rabuza, Florian. (2014) *The Social Opportunity of Voting: a Factorial Vignette Survey of a Most-Likely-To-Vote Population*. [Online] Available from: http://www.pol.ed.ac.uk/ [Accessed May 30 2015]

Government of Canada. (2015) *Federal Elections*. [Online]. Available from: <u>http://www.cic.gc.ca/</u> [Accessed April 27 2015]

Haspel, Moshe, and Knotts, H. Gibbs. (2005) Location, Location, Location: Precinct Placement and the Costs of Voting. *The Journal of Politics*, Vol. **67**, No. 2. pp. 560-573.

Hanmer, J. Michael. (2009) *Discount Voting: Voter Registration Reforms and their Effects*. Cambridge: Cambridge University Press.

Harb, Mac. (2005) The Case for Mandatory Voting in Canada. [Online] *The Canadian Parliamentary Review*, **Vol.28**, No.2. Available from: <u>http://www.revparl.ca/</u> [Accessed April 14 2015]

Hill, David. (2006) American Voter Turnout: An Institutional Perspective. Westview Press, Colorado: United States of America.

International IDEA Handbook of Electoral System Design. (1997) *What affects turnout?* [Online] Available from: <u>http://www.idea.int/</u> [Accessed April 17 2015]

International IDEA. (1997) *Voter Turnout from 1945 to 1997: A Global Report on Political Participation*. [Online] Available from: <u>http://www.idea.int/</u> [Accessed April 29 2015]

International IDEA Institute for Democracy and Electoral Assistance. (2015) *Voter Turnout Analyzer*. [Online] Available from: <u>http://www.idea.int/</u> [Accessed April 29 2015]

Jackman, W. Robert. (1987) "Political Institutions and Voter Turnout in the Industrial Democracies." *American Political Science Review* 81 (2): 405-423.

Jackson, Emily. (2014) Long Lines as several Vancouver polling stations run out of ballots. [Online] *Metro*, in press, November 15, 2014. Available from: <u>http://metronews.ca/</u> [Accessed May 9 2015]

Lijphart, Arend. (1997). "Unequal Participation: Democracy's Unresolved Dilemma." *American Political Science Review*, 91. pp. 1–14.

Lijphart, Arend. (1998) The Problem of Low and Unequal Voter Turnout—and What We Can Do About It. [Online] *Political Science Series*, No. 54. Available from: <u>http://aei.pitt.edu/</u> [Accessed April 17 2015]

Nagler, Jonathan. (1991). 'The Effect of Registration Laws and Education on U.S. Voter Turnout'. *American Political Science Review*, 80. pp.17-41.

Norris, Pipa. (2014) *Why Electoral Integrity Matters*. [Online] Cambridge University Press: United States of America. Available from: <u>https://books.google.ca/</u> [Accessed June 5 2015]

Nie, H. Norman, Junn, Jane, and Stehlik-Barry, Kenneth. (1996) *Education and Democratic Citizenship in America*. University of Chicago Press: Chicago.

O'Neal, Brian. (1993) *Electoral Systems*. [Online] Available from: <u>http://www.parl.gc.ca/</u> [Accessed May 30 2015]

Pammett, H. John, and LeDuc, Lawrence. (2003) *Explaining the Turnout Decline in Canadian Federal Elections: A New Survey of Non-voters*. [Online] Available from: <u>http://www.elections.ca/</u> [Accessed May 29 2015]

Parliament of Canada. (2010) *Estimated Voter Turnout in Canada*. [Online] Available from: <u>http://www.parl.gc.ca/</u> [Accessed April 14 2015]

Pintor, L. Rafael, Gratschew, Maria, and Sullivan, Kate. (2012) *Voter Turnout Rates from a Comparative Perspective*. [Online]. Available from: <u>http://www.idea.int/</u> [Accessed May 19 2015]

Powell, G. Bingham Jr. (1982) *Contemporary Democracies: Participation, Stability and Violence*. Cambridge, MA: Harvard University Press.

Powell, G. Bingham Jr. (1986). "American Voter Turnout in Comparative Perspective." *American Political Science Review* 80 (1). pp. 17-43.

Redistribution: Federal Electoral Districts. (2012) *Redistribution of federal electoral districts*. [Online] Available from: <u>http://www.redecoupage-federal-redistribution.ca/</u> [Accessed June 6 2015]

Riker, H, William, and Ordeshook C. Peter. (1968) 'A Theory of the Calculus of Voting.' *The American Political Science Review*, Vol.**62**, No.1. pp. 25-42.

Rosenstone, J Steven, and Wolfinger, E. Raymond. (1978) "The Effect of Registration Laws on Voter Turnout." American Political Science Review. Vol. 72. pp. 22-45.

Rosenstone, J Steven, and Wolfinger, E. Raymond. (1980) *Who Votes?* Yale University Press:New Haven.

De Alth, Shelley. (2009) "ID at the Polls: Assessing the Impact of Recent State Voter ID Laws on Voter Turnout." *Harvard Law & Policy Review*, Vol. 3. pp.185-202.

Sniderman, M. Paul, and Highton, Benjamin. (2011) *Facing the Challenge of Democracy: Explorations in the Analysis of Public Opinion and Political Participation*. Princeton University Press: Princeton and Oxford.

Spencer, M. Douglas, and Markovits, S. Zachary. (2009) *Long Lines at Polling Stations? Observations from an Election Day Field Study*. [Online] Available from: <u>http://www.vote.caltech.edu/</u> [Accessed April 28 2015]

Timmons, Heather. (2014) Here's how India's record-setting voter turnout compares to the rest of the world. [Online] *Quartz*, in press, May 13 2014. Available from: <u>http://qz.com/</u> [Accessed May 5 2015]

Wessels, Bernhard, and Mark N. Franklin. (2009) "Turning Out or Turning Off: Do Mobilization and Attitudes Account for Turnout Differences between New and Established Member States at the 2004 EP Elections?" *Journal of European Integration* 31 (5): pp. 609-626.

Wesley, J. Jared, and Summerlee, Lydia. (2012) Voter Turnout in Manitoba: An Ecological Analysis. *Canadian Political Science Review*, Vol.6, No.2-3, pp.267-279.